Intraspecific variation for host immune activation by the spider mite Tetranychus evansi

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Figure 1

(A)

Data set

File= "Figure1A_B & Figure2A.txt"

ovip - data set in R

block - Experimental block

qpcrtime - time point of experiment in which gene expression was measured (t4 - four days after first infestation; t6 - six days after first infestation)

plant - plant number

variety - Plant variety (CM = WT or def1= def-1)

Pop - Control: control benchmarks (inducer, suppressor or clean plants); Te: Populations of the species T. evansi; Tu: Populations of the species T. urticae

treatment - Mite population (T. urticae inducer benchmark, T. evansi suppressor benchmark, T. evansi outbred, VIT, 6M1, QG or PBS)

survfemales_1 - females that survived in the end of the first infestation (t4)

totalfemales_1 - total number of females (alive and dead) in the end of the first infestation (t4)

eggs_1 - eggs oviposited by the females of the first infestation

survfemales_2 - females that survived in the end of the second infestation (t6)

totalfemales_2 - total number of females (alive and dead) in the end of the second infestation (t6)

eggs_2 - eggs oviposited by the females of the second infestation

survmean_1 - average female survival; results from: survmean=(survfemales_1+totalfemales)/2

eggsp - Eggs per female (Fecundity); results from: eggsp=(eggs_1/survmean_1)

survmean_2 - average female survival; results from: survmean=(survfemales_2+3)/2

eggsc - Eggs per female (Fecundity) of competitor; results from: (eggs_2/survmean_2)

```
(F1A_summary<- ddply(ovip[ovip$treatment!="C"&ovip$variety=="CM",], .(variety,treatment), summarize, mean2=mean(egg
```

```
##   variety treatment     mean2       sd        se  n
## 1      CM         I  6.365446 2.636933 0.7950653 11
## 2      CM         S 20.073346 5.205472 1.5695088 11
## 3      CM      Te_O 16.238698 5.055196 1.5241989 11
## 4      CM       VIT 18.146756 4.071605 1.2276351 11
## 5      CM    Te_6M1 15.642407 3.515804 1.0600547 11
## 6      CM        QG 17.492558 4.247072 1.2805405 11
## 7      CM       PBS 18.843144 5.027250 1.5157729 11
```

Normality test

```
shapiro.test(ovip[ovip$treatment %in% c("Te_0", "VIT", "Te_6M1", "QG", "PBS") & ovip$variety ==
    "CM", ]$eggsp)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  ovip[ovip$treatment %in% c("Te_0", "VIT", "Te_6M1", "QG", "PBS") & ovip$variety == "CM", ]$eggsp
## W = 0.96961, p-value = 0.1767
```

Homogeneity test

```
leveneTest(eggsp ~ treatment * variety, data = ovip[ovip$treatment %in% c("Te_0",
    "VIT", "Te_6M1", "QG", "PBS") & ovip$variety == "CM", ])
```

```
## Levene's Test for Homogeneity of Variance (center = median)
##       Df F value Pr(>F)
## group  4  0.6143 0.6543
##       50
```

Statistics

```
regression1A <- lmer(eggsp ~ treatment + (1 | block), data = ovip[ovip$treatment %in%
    c("Te_0", "VIT", "Te_6M1", "QG", "PBS") & ovip$variety == "CM", ])

Anova(regression1A, type = "III", tewtst = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: eggsp
##               Chisq Df Pr(>Chisq)
## (Intercept) 105.336  1     <2e-16 ***
## treatment    12.204  4     0.0159 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
(multcomp_dev_1A <- emmeans(regression1A, pairwise ~ treatment, adjust = "fdr"))
```

```
## $emmeans
##  treatment emmean   SE   df lower.CL upper.CL
##  Te_0        16.3 1.59 8.89     12.7     19.9
##  VIT         18.2 1.59 8.89     14.6     21.8
##  Te_6M1      15.7 1.59 8.89     12.1     19.3
##  QG          17.6 1.59 8.89     14.0     21.2
##  PBS         18.9 1.59 8.89     15.3     22.5
##
## Degrees-of-freedom method: kenward-roger
## Confidence level used: 0.95
```

```
##
## $contrasts
##  contrast      estimate   SE df t.ratio p.value
##  Te_O - VIT      -1.908 1.07 44  -1.781  0.1825
##  Te_O - Te_6M1    0.596 1.07 44   0.557  0.5807
##  Te_O - QG       -1.254 1.07 44  -1.170  0.3546
##  Te_O - PBS      -2.604 1.07 44  -2.431  0.0801
##  VIT - Te_6M1     2.504 1.07 44   2.337  0.0801
##  VIT - QG         0.654 1.07 44   0.611  0.5807
##  VIT - PBS       -0.696 1.07 44  -0.650  0.5807
##  Te_6M1 - QG     -1.850 1.07 44  -1.727  0.1825
##  Te_6M1 - PBS    -3.201 1.07 44  -2.987  0.0459
##  QG - PBS        -1.351 1.07 44  -1.260  0.3546
##
## Degrees-of-freedom method: kenward-roger
## P value adjustment: fdr method for 10 tests
```

```
(PH.1A <- as.data.frame(cld(multcomp_dev_1A, Letters = letters, adjust = "fdr", reverse = T,
    decreasing = T)))
```

```
##   treatment   emmean       SE       df lower.CL upper.CL .group
## 3       PBS 18.93710 1.591581 8.887069 13.74804 24.12616     a
## 1       VIT 18.24071 1.591581 8.887069 13.05166 23.42977     ab
## 4        QG 17.58651 1.591581 8.887069 12.39746 22.77557     ab
## 2      Te_O 16.33265 1.591581 8.887069 11.14360 21.52171     ab
## 5    Te_6M1 15.73636 1.591581 8.887069 10.54731 20.92542      b
```

(B)

Data set

File= “Figure1A_B & Figure2A.txt”

ovip - data set in R

block - Experimental block

qpcrtime - time point of experiment in which gene expression was measured (t4 - four days after first infestation; t6 - six days after first infestation)

plant - plant number

variety - Plant variety (CM = WT or def1= def-1)

Pop - Control: control benchmarks (inducer, suppressor or clean plants); Te: Populations of the species T. evansi; Tu: Populations of the species T. urticae

treatment - Mite population (T. urticae inducer benchmark, T. evansi suppressor benchmark, T. evansi outbred, VIT, 6M1, QG or PBS)

survfemales_1 - females that survived in the end of the first infestation (t4)

totalfemales_1 - total number of females (alive and dead) in the end of the first infestation (t4)

eggs_1 - eggs oviposited by the females of the first infestation

survfemales_2 - females that survived in the end of the second infestation (t6)

totalfemales_2 - total number of females (alive and dead) in the end of the second infestation (t6)

eggs_2 - eggs oviposited by the females of the second infestation

survmean_1 - average female survival; results from: survmean=(survfemales_1+totalfemales)/2

eggsp - Eggs per female (Fecundity); results from: eggsp=(eggs_1/survmean_1)

survmean_2 - average female survival; results from: survmean=(survfemales_2+3)/2

eggsc - Eggs per female (Fecundity) of competitor; results from: (eggs_2/survmean_2)

```
(F1B_summary<- ddply(ovip[ovip$treatment!="C"&ovip$variety=="def1",], .(variety,treatment), summarize, mean2=mean(e
```

```
##   variety treatment    mean2       sd        se n
## 1    def1         I 20.26026 2.166660 0.7222199 9
## 2    def1         S 19.89114 4.176470 1.3921568 9
## 3    def1      Te_O 19.71905 2.950482 0.9834938 9
## 4    def1       VIT 20.96391 3.011521 1.0647335 8
## 5    def1    Te_6M1 17.34775 2.816917 0.9959305 8
## 6    def1        QG 16.13005 4.365911 1.5435828 8
## 7    def1       PBS 16.82826 4.705992 1.6638193 8
```

Normality test

```
shapiro.test(ovip[ovip$treatment %in% c("Te_O", "VIT", "Te_6M1", "QG", "PBS") & ovip$variety ==
    "def1", ]$eggsp)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  ovip[ovip$treatment %in% c("Te_O", "VIT", "Te_6M1", "QG", "PBS") & ovip$variety == "def1", ]$eggsp
## W = 0.98062, p-value = 0.6991
```

Homogeneity test

```
leveneTest(eggsp ~ treatment * variety, data = ovip[ovip$treatment %in% c("Te_O",
    "VIT", "Te_6M1", "QG", "PBS") & ovip$variety == "def1", ])
```

```
## Levene's Test for Homogeneity of Variance (center = median)
##       Df F value Pr(>F)
## group  4  0.6418 0.6362
##       36
```

Statistics

```
regression1B <- lmer(eggsp ~ treatment + (1 | block), data = ovip[ovip$treatment %in%
    c("Te_O", "VIT", "Te_6M1", "QG", "PBS") & ovip$variety == "def1", ])

Anova(regression1B, type = "III", tewtst = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: eggsp
```

```
##               Chisq Df Pr(>Chisq)
## (Intercept) 161.735  1  < 2.2e-16 ***
## treatment    15.928  4   0.003118 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
(multcomp_dev_1B <- emmeans(regression1B, pairwise ~ treatment, adjust = "fdr"))
```

```
## $emmeans
##  treatment emmean   SE   df lower.CL upper.CL
##  Te_O        19.3 1.52 8.25     15.8     22.8
##  VIT         20.7 1.56 9.06     17.2     24.2
##  Te_6M1      17.1 1.56 9.06     13.5     20.6
##  QG          15.8 1.56 9.06     12.3     19.4
##  PBS         16.5 1.56 9.06     13.0     20.1
##
## Degrees-of-freedom method: kenward-roger
## Confidence level used: 0.95
##
## $contrasts
##  contrast      estimate   SE   df t.ratio p.value
##  Te_O - VIT      -1.379 1.41 32.1  -0.977  0.4796
##  Te_O - Te_6M1    2.237 1.41 32.1   1.585  0.2045
##  Te_O - QG        3.455 1.41 32.1   2.448  0.0500
##  Te_O - PBS       2.757 1.41 32.1   1.953  0.1191
##  VIT - Te_6M1     3.616 1.45 32.0   2.500  0.0500
##  VIT - QG         4.834 1.45 32.0   3.342  0.0213
##  VIT - PBS        4.136 1.45 32.0   2.859  0.0371
##  Te_6M1 - QG      1.218 1.45 32.0   0.842  0.5076
##  Te_6M1 - PBS     0.519 1.45 32.0   0.359  0.7218
##  QG - PBS        -0.698 1.45 32.0  -0.483  0.7028
##
## Degrees-of-freedom method: kenward-roger
## P value adjustment: fdr method for 10 tests
```

```
PH.1B <- as.data.frame(cld(multcomp_dev_1B, Letters = letters, adjust = "fdr", reverse = T,
    decreasing = T))
```

(C)

Data set

File = "Figure1C.txt"

eff- data set in R

block - Experimental block

sample - plant number (equivalent to plant in "Figure1A_B & Figure 2A.txt")

Pop - Control: control benchmarks (inducer, suppressor or clean plants); Te: Populations of the species T. evansi; Tu: Populations of the species T. urticae

target - target gene (salivary effector 84 - eff84)

treatment - Mite population (T. urticae inducer benchmark, T. evansi suppressor benchmark, T. evansi outbred, VIT, 6M1, QG or PBS)

norm.exp - Normalized expression effectors

scaled - Normalized expression effectors scaled to the minimum mean

```
(F1C_summary <- ddply(eff, .(treatment), summarize, mean2=mean(scaled,na.rm=TRUE), sd=sd(scaled,na.rm=TRUE), se=sd
```

```
##   treatment      mean2        sd        se  n
## 1         I   3.387379  4.649059  1.470162 10
## 2         S  72.328425 70.744228 22.371289 10
## 3      Te_O  88.875640 58.687175 18.558514 10
## 4       VIT 114.691192 57.727723 25.816622  5
## 5    Te_6M1  76.795629 57.820875 25.858281  5
## 6        QG 152.257698 79.212638 35.424969  5
## 7       PBS 117.475539 65.714127 29.388251  5
```

Normality test

```
shapiro.test(eff$norm.exp)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  eff$norm.exp
## W = 0.90521, p-value = 0.0007172
```

Homegeneity of variance test

```
leveneTest(norm.exp ~ treatment, data = eff)
```

```
## Levene's Test for Homogeneity of Variance (center = median)
##       Df F value Pr(>F)
## group  6  1.4198 0.2292
##       43
```

Statistics without benchmark controls

```
regression1C <- glmmTMB(norm.exp ~ treatment + (1 | block), family = Gamma(link = "log"),
    data = eff[eff$treatment %in% c("C", "I", "S") == F, ])

Anova(regression1C, type = "III", test = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##              Chisq Df Pr(>Chisq)
## (Intercept) 3.2064  1    0.07335 .
## treatment   4.0418  4    0.40038
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Statistics with benckmark controls

```
regression1Ccontrols <- glmmTMB(norm.exp ~ treatment + (1 | block), family = Gamma(link = "log"),
    data = eff)

Anova(regression1Ccontrols, type = "III", test = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##              Chisq Df Pr(>Chisq)
## (Intercept) 166.73  1  < 2.2e-16 ***
## treatment   116.29  6  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
(multcomp_dev_1C <- emmeans(regression1Ccontrols, pairwise ~ treatment, adjust = "fdr"))
```

```
## $emmeans
##  treatment  emmean    SE df lower.CL upper.CL
##  I         -3.6184 0.280 41   -4.184 -3.05249
##  S         -0.5573 0.280 41   -1.123  0.00867
##  Te_O      -0.3512 0.280 41   -0.917  0.21469
##  VIT       -0.0962 0.396 41   -0.897  0.70411
##  Te_6M1    -0.4973 0.396 41   -1.298  0.30301
##  QG         0.1871 0.396 41   -0.613  0.98744
##  PBS       -0.0722 0.396 41   -0.873  0.72810
##
## Results are given on the log (not the response) scale.
## Confidence level used: 0.95
##
## $contrasts
##  contrast      estimate    SE df t.ratio p.value
##  I - S          -3.0612 0.396 41  -7.724  <.0001
##  I - Te_O       -3.2672 0.396 41  -8.244  <.0001
##  I - VIT        -3.5222 0.485 41  -7.257  <.0001
##  I - Te_6M1     -3.1211 0.485 41  -6.430  <.0001
##  I - QG         -3.8055 0.485 41  -7.840  <.0001
##  I - PBS        -3.5462 0.485 41  -7.306  <.0001
##  S - Te_O       -0.2060 0.396 41  -0.520  0.7537
##  S - VIT        -0.4610 0.485 41  -0.950  0.6639
##  S - Te_6M1     -0.0599 0.485 41  -0.123  0.9475
##  S - QG         -0.7444 0.485 41  -1.534  0.3984
##  S - PBS        -0.4850 0.485 41  -0.999  0.6639
##  Te_O - VIT     -0.2550 0.485 41  -0.525  0.7537
##  Te_O - Te_6M1   0.1461 0.485 41   0.301  0.8455
##  Te_O - QG      -0.5383 0.485 41  -1.109  0.6390
##  Te_O - PBS     -0.2790 0.485 41  -0.575  0.7537
##  VIT - Te_6M1    0.4011 0.560 41   0.716  0.7537
##  VIT - QG       -0.2833 0.560 41  -0.506  0.7537
##  VIT - PBS      -0.0240 0.560 41  -0.043  0.9661
##  Te_6M1 - QG    -0.6844 0.560 41  -1.221  0.6011
##  Te_6M1 - PBS   -0.4251 0.560 41  -0.758  0.7537
##  QG - PBS        0.2593 0.560 41   0.463  0.7537
```

```
##
## Results are given on the log (not the response) scale.
## P value adjustment: fdr method for 21 tests
```

```
PH.1C <- as.data.frame(cld(multcomp_dev_1C, Letters = letters, adjust = "fdr", reverse = T,
    decreasing = T))
```

(D)

Data set

File ="Figure 1D_E & Figure 2B_C.txt"

gen- data set in R

block - Experimental block

sample - plant number (equivalent to plant in "Figure1A_B & Figure 2A.txt")

Pop - Control: control benchmarks (inducer, suppressor or clean plants); Te: Populations of the species T. evansi; Tu: Populations of the species T. urticae

target - target gene (IIc - WIPII_IIc; IIf - WIPI-IIf)

qpcrtime - time point of experiment in which gene expression was measured (t4 - four days after first infestation; t6 - six days after first infestation)

treatment - Mite population (T. urticae inducer benchmark, T. evansi suppressor benchmark, T. evansi outbred, VIT, 6M1, QG or PBS)

norm.exp - Normalized expression

scaled - Normalized expression scaled to the minimum mean

```
(F1D_summary <- ddply(gen[gen$target=="IIc"&gen$qpcrtime=="t4",], .(treatment,qpcrtime), summarize, mean2=mean(sca
```

```
##   treatment qpcrtime      mean2          sd          se  n        maxi
## 1         C       t4   48.93150  121.301551   38.358918 10   380.43449
## 2         I       t4 2842.90792 4050.857457 1280.993604 10 12399.88152
## 3         S       t4  110.11706  209.810290   66.347839 10   684.54112
## 4      Te_O       t4   20.25406   38.096012   12.047017 10   125.28958
## 5       VIT       t4   11.80189    9.828453    4.395418  5    22.31840
## 6    Te_6M1       t4    8.82062    9.961684    4.455001  5    25.29538
## 7        QG       t4   63.94279   73.546124   32.890827  5   174.34507
## 8       PBS       t4   54.25183   98.470626   44.037403  5   229.23649
```

Normality test

```
shapiro.test(gen[gen$qpcrtime == "t4" & gen$target == "IIc" & gen$treatment %in%
    c("C", "I", "S") == F, ]$norm.exp)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  gen[gen$qpcrtime == "t4" & gen$target == "IIc" & gen$treatment %in% c("C", "I", "S") == F, ]$norm.exp
## W = 0.5799, p-value = 4.185e-08
```

Homogeneity of variance test

```
leveneTest(norm.exp ~ treatment * qpcrtime, data = gen[gen$qpcrtime == "t4" & gen$target ==
    "IIc" & gen$treatment %in% c("C", "I", "S") == F, ])
```

```
## Levene's Test for Homogeneity of Variance (center = median)
##       Df F value Pr(>F)
## group  4    1.22 0.3274
##       25
```

Statistics without benchmark controls

```
regression1D <- glmmTMB(norm.exp ~ treatment * qpcrtime + (1 | block), family = Gamma(link = "log"),
    data = gen[gen$target == "IIc" & gen$treatment %in% c("C", "I", "S") == F, ])


Anova(regression1D, type = "III")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##                       Chisq Df Pr(>Chisq)
## (Intercept)        199.1321  1     <2e-16 ***
## treatment            3.1941  4     0.5259
## qpcrtime             2.0275  1     0.1545
## treatment:qpcrtime   5.3229  4     0.2557
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
regression1D.2 <- glmmTMB(norm.exp ~ treatment + qpcrtime + (1 | block), family = Gamma(link = "log"),
    data = gen[gen$target == "IIc" & gen$treatment %in% c("C", "I", "S") == F, ])

Anova(regression1D.2, type = "III")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##                Chisq Df Pr(>Chisq)
## (Intercept) 212.4223  1  < 2.2e-16 ***
## treatment     0.9371  4  0.9191729
## qpcrtime     12.5964  1  0.0003865 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Statistics with benchmark controls

```
regression1Dcontrols <- glmmTMB(norm.exp ~ treatment * qpcrtime + (1 | block), family = Gamma(link = "log"),
    data = gen[gen$target == "IIc" & gen$block %in% c(1:12), ])

Anova(regression1Dcontrols, type = "III")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##                       Chisq Df Pr(>Chisq)
## (Intercept)        234.8906  1  < 2.2e-16 ***
## treatment           64.0973  7  2.283e-11 ***
## qpcrtime             3.7777  1  0.0519393 .
## treatment:qpcrtime  24.5159  7  0.0009242 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
(regression1Dcontrols_byqpcrtime <- emmeans(regression1Dcontrols, pairwise ~ treatment *
    qpcrtime, by = "qpcrtime", type = "response", adjust = "fdr"))
```

```
## $emmeans
## qpcrtime = t4:
##  treatment response       SE  df lower.CL upper.CL
##  C         2.22e-04 1.22e-04 109 7.46e-05 6.58e-04
##  I         1.29e-02 7.07e-03 109 4.34e-03 3.82e-02
##  S         4.99e-04 2.74e-04 109 1.68e-04 1.48e-03
##  Te_O      9.17e-05 5.03e-05 109 3.09e-05 2.72e-04
##  VIT       5.34e-05 4.15e-05 109 1.15e-05 2.49e-04
##  Te_6M1    3.99e-05 3.10e-05 109 8.57e-06 1.86e-04
##  QG        2.89e-04 2.25e-04 109 6.21e-05 1.35e-03
##  PBS       2.46e-04 1.91e-04 109 5.27e-05 1.14e-03
##
## qpcrtime = t6:
##  treatment response       SE  df lower.CL upper.CL
##  C         9.68e-04 5.07e-04 109 3.43e-04 2.73e-03
##  I         2.15e-03 1.12e-03 109 7.61e-04 6.06e-03
##  S         1.43e-04 7.50e-05 109 5.08e-05 4.05e-04
##  Te_O      1.82e-04 9.54e-05 109 6.46e-05 5.14e-04
##  VIT       2.38e-05 1.69e-05 109 5.84e-06 9.70e-05
##  Te_6M1    2.17e-05 1.54e-05 109 5.34e-06 8.86e-05
##  QG        5.99e-06 4.65e-06 109 1.28e-06 2.79e-05
##  PBS       2.74e-05 1.94e-05 109 6.72e-06 1.12e-04
##
## Confidence level used: 0.95
## Intervals are back-transformed from the log scale
##
## $contrasts
## qpcrtime = t4:
##  contrast         ratio       SE  df null t.ratio p.value
##  C / I           0.0172   0.0134 109    1  -5.231  <.0001
##  C / S           0.4444   0.3450 109    1  -1.045  0.4235
##  C / Te_O        2.4159   1.8759 109    1   1.136  0.4020
##  C / VIT         4.1461   3.9429 109    1   1.495  0.2570
##  C / Te_6M1      5.5474   5.2756 109    1   1.802  0.1735
##  C / QG          0.7652   0.7277 109    1  -0.281  0.8523
##  C / PBS         0.9019   0.8577 109    1  -0.109  0.9138
##  I / S          25.8171  20.0466 109    1   4.187  0.0003
##  I / Te_O      140.3631 108.9894 109    1   6.367  <.0001
##  I / VIT       240.8872 229.0817 109    1   5.767  <.0001
##  I / Te_6M1    322.3028 306.5078 109    1   6.073  <.0001
##  I / QG         44.4602  42.2813 109    1   3.990  0.0005
##  I / PBS        52.4025  49.8343 109    1   4.163  0.0003
```

```
##  S / Te_O        5.4368   4.2216 109    1   2.181  0.0878
##  S / VIT         9.3305   8.8732 109    1   2.348  0.0643
##  S / Te_6M1     12.4841  11.8723 109    1   2.655  0.0320
##  S / QG          1.7221   1.6377 109    1   0.572  0.6665
##  S / PBS         2.0298   1.9303 109    1   0.744  0.5832
##  Te_O / VIT      1.7162   1.6321 109    1   0.568  0.6665
##  Te_O / Te_6M1   2.2962   2.1837 109    1   0.874  0.5120
##  Te_O / QG       0.3168   0.3012 109    1  -1.209  0.3777
##  Te_O / PBS      0.3733   0.3550 109    1  -1.036  0.4235
##  VIT / Te_6M1    1.3380   1.4693 109    1   0.265  0.8523
##  VIT / QG        0.1846   0.2027 109    1  -1.539  0.2535
##  VIT / PBS       0.2175   0.2389 109    1  -1.389  0.2934
##  Te_6M1 / QG     0.1379   0.1515 109    1  -1.804  0.1735
##  Te_6M1 / PBS    0.1626   0.1785 109    1  -1.654  0.2174
##  QG / PBS        1.1786   1.2943 109    1   0.150  0.9138
##
## qpcrtime = t6:
##  contrast         ratio       SE  df null t.ratio p.value
##  C / I           0.4504   0.3335 109    1  -1.077  0.3310
##  C / S           6.7528   4.9994 109    1   2.580  0.0242
##  C / Te_O        5.3113   3.9322 109    1   2.255  0.0457
##  C / VIT        40.6483  35.8188 109    1   4.204  0.0002
##  C / Te_6M1     44.5111  39.2227 109    1   4.308  0.0002
##  C / QG        161.6631 151.3934 109    1   5.430  <.0001
##  C / PBS        35.3493  31.1494 109    1   4.046  0.0003
##  I / S          14.9924  11.0996 109    1   3.657  0.0011
##  I / Te_O       11.7921   8.7302 109    1   3.333  0.0027
##  I / VIT        90.2465  79.5243 109    1   5.110  <.0001
##  I / Te_6M1     98.8228  87.0816 109    1   5.213  <.0001
##  I / QG        358.9215 336.1208 109    1   6.282  <.0001
##  I / PBS        78.4820  69.1573 109    1   4.951  <.0001
##  S / Te_O        0.7865   0.5823 109    1  -0.324  0.8359
##  S / VIT         6.0195   5.3043 109    1   2.037  0.0649
##  S / Te_6M1      6.5915   5.8084 109    1   2.140  0.0538
##  S / QG         23.9403  22.4195 109    1   3.391  0.0025
##  S / PBS         5.2348   4.6128 109    1   1.879  0.0882
##  Te_O / VIT      7.6531   6.7439 109    1   2.310  0.0426
##  Te_O / Te_6M1   8.3804   7.3847 109    1   2.413  0.0350
##  Te_O / QG      30.4375  28.5039 109    1   3.647  0.0011
##  Te_O / PBS      6.6555   5.8647 109    1   2.151  0.0538
##  VIT / Te_6M1    1.0950   1.0977 109    1   0.091  0.9280
##  VIT / QG        3.9771   4.1814 109    1   1.313  0.2442
##  VIT / PBS       0.8696   0.8718 109    1  -0.139  0.9224
##  Te_6M1 / QG     3.6320   3.8185 109    1   1.227  0.2709
##  Te_6M1 / PBS    0.7942   0.7961 109    1  -0.230  0.8816
##  QG / PBS        0.2187   0.2299 109    1  -1.446  0.2014
##
## P value adjustment: fdr method for 28 tests
## Tests are performed on the log scale
```

```
PH1D_qpctime <- as.data.frame(cld(regression1Dcontrols_byqpcrtime, Letters = letters,
    adjust = "fdr", reverse = T))

(regression1Dcontrols_bytreatment <- emmeans(regression1Dcontrols, pairwise ~ treatment *
    qpcrtime, by = "treatment", type = "response", adjust = "fdr"))
```

```
## $emmeans
## treatment = C:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       2.22e-04 1.22e-04 109 7.46e-05 6.58e-04
##  t6       9.68e-04 5.07e-04 109 3.43e-04 2.73e-03
##
## treatment = I:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       1.29e-02 7.07e-03 109 4.34e-03 3.82e-02
##  t6       2.15e-03 1.12e-03 109 7.61e-04 6.06e-03
##
## treatment = S:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       4.99e-04 2.74e-04 109 1.68e-04 1.48e-03
##  t6       1.43e-04 7.50e-05 109 5.08e-05 4.05e-04
##
## treatment = Te_O:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       9.17e-05 5.03e-05 109 3.09e-05 2.72e-04
##  t6       1.82e-04 9.54e-05 109 6.46e-05 5.14e-04
##
## treatment = VIT:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       5.34e-05 4.15e-05 109 1.15e-05 2.49e-04
##  t6       2.38e-05 1.69e-05 109 5.84e-06 9.70e-05
##
## treatment = Te_6M1:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       3.99e-05 3.10e-05 109 8.57e-06 1.86e-04
##  t6       2.17e-05 1.54e-05 109 5.34e-06 8.86e-05
##
## treatment = QG:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       2.89e-04 2.25e-04 109 6.21e-05 1.35e-03
##  t6       5.99e-06 4.65e-06 109 1.28e-06 2.79e-05
##
## treatment = PBS:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       2.46e-04 1.91e-04 109 5.27e-05 1.14e-03
##  t6       2.74e-05 1.94e-05 109 6.72e-06 1.12e-04
##
## Confidence level used: 0.95
## Intervals are back-transformed from the log scale
##
## $contrasts
## treatment = C:
##  contrast  ratio     SE  df null t.ratio p.value
##  t4 / t6   0.229  0.174 109    1  -1.944  0.0545
##
## treatment = I:
##  contrast  ratio     SE  df null t.ratio p.value
##  t4 / t6   5.990  4.544 109    1   2.360  0.0201
##
## treatment = S:
##  contrast  ratio     SE  df null t.ratio p.value
##  t4 / t6   3.478  2.639 109    1   1.643  0.1032
```

```
##
## treatment = Te_O:
##  contrast  ratio     SE  df null t.ratio p.value
##  t4 / t6   0.503  0.382 109    1  -0.905  0.3673
##
## treatment = VIT:
##  contrast  ratio     SE  df null t.ratio p.value
##  t4 / t6   2.244  2.359 109    1   0.769  0.4437
##
## treatment = Te_6M1:
##  contrast  ratio     SE  df null t.ratio p.value
##  t4 / t6   1.837  1.931 109    1   0.578  0.5643
##
## treatment = QG:
##  contrast  ratio     SE  df null t.ratio p.value
##  t4 / t6  48.355 53.100 109    1   3.532  0.0006
##
## treatment = PBS:
##  contrast  ratio     SE  df null t.ratio p.value
##  t4 / t6   8.971  9.432 109    1   2.087  0.0392
##
## Tests are performed on the log scale
```

```
PH1D_treatment <- as.data.frame(cld(regression1Dcontrols_bytreatment, Letters = letters,
    adjust = "fdr", reverse = T))
```

(E)

Data set

File =“Figure 1D_E & Figure 2B_C.txt”

gen- data set in R

block - Experimental block

sample - plant number (equivalent to plant in “Figure1A_B & Figure 2A.txt”)

Pop - Control: control benchmarks (inducer, suppressor or clean plants); Te: Populations of the species T. evansi; Tu: Populations of the species T. urticae

target - target gene (IIc - WIPII_IIc; IIf - WIPI-IIf)

qpcrtime - time point of experiment in which gene expression was measured (t4 - four days after first infestation; t6 - six days after first infestation)

treatment - Mite population (T. urticae inducer benchmark, T. evansi suppressor benchmark, T. evansi outbred, VIT, 6M1, QG or PBS)

norm.exp - Normalized expression

scaled - Normalized expression scaled to the minimum mean

```
(F1E_summary <- ddply(gen[gen$target=="IIf"&gen$qpcrtime=="t4",], .(treatment,qpcrtime), summarize, mean2=mean(scal
```

```
##   treatment qpcrtime      mean2          sd          se  n         maxi
## 1         C       t4    3.18465    3.803421    1.437558  7     8.757833
## 2         I       t4 2965.39471 8120.833295 2568.032971 10 25969.205539
## 3         S       t4   58.02722   68.362951   21.618263 10   196.228141
```

```
## 4      Te_O       t4    8.58770    8.003517    2.530934 10    24.310652
## 5       VIT       t4   50.30726   95.088857   42.525030  5   219.747478
## 6    Te_6M1       t4   24.17252   28.741066   12.853395  5    68.180241
## 7        QG       t4   49.60611   59.105413   26.432744  5   115.442079
## 8       PBS       t4   67.07938  128.169341   57.319072  5   295.863939
```

Normality test

```
shapiro.test(gen[gen$target == "IIf" & gen$treatment %in% c("C", "I", "S") == F,
    ]$norm.exp)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  gen[gen$target == "IIf" & gen$treatment %in% c("C", "I", "S") == F, ]$norm.exp
## W = 0.42804, p-value = 2.212e-14
```

Homegeneity of variance test

```
leveneTest(norm.exp ~ treatment * qpcrtime, data = gen[gen$target == "IIf" & gen$treatment %in%
    c("C", "I", "S") == F, ])
```

```
## Levene's Test for Homogeneity of Variance (center = median)
##       Df F value Pr(>F)
## group  9  1.0438 0.4185
##       54
```

Statistics without benchmark controls

```
regression1E <- glmmTMB(norm.exp ~ treatment * qpcrtime + (1 | block), family = Gamma(link = "log"),
    data = gen[gen$target == "IIf" & gen$treatment %in% c("C", "I", "S") == F, ])


Anova(regression1E, type = "III")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##                       Chisq Df Pr(>Chisq)
## (Intercept)        313.7649  1    < 2e-16 ***
## treatment            3.1577  4    0.53179
## qpcrtime             0.0020  1    0.96403
## treatment:qpcrtime   8.3786  4    0.07865 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
regression1E.2 <- glmmTMB(norm.exp ~ treatment + qpcrtime + (1 | block), family = Gamma(link = "log"),
    data = gen[gen$target == "IIf" & gen$treatment %in% c("C", "I", "S") == F, ])

Anova(regression1E.2, type = "III")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##                Chisq Df Pr(>Chisq)
## (Intercept) 223.2690  1  < 2.2e-16 ***
## treatment     0.7106  4  0.9500196
## qpcrtime     14.6020  1  0.0001328 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
regression1E.3 <- glmmTMB(norm.exp ~ qpcrtime + (1 | block), family = Gamma(link = "log"),
    data = gen[gen$target == "IIf" & gen$treatment %in% c("C", "I", "S") == F, ])

Anova(regression1E.3, type = "III")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##               Chisq Df Pr(>Chisq)
## (Intercept) 330.510  1  < 2.2e-16 ***
## qpcrtime     14.097  1  0.0001736 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Statistics with benchmark controls

```
regression1Econtrols <- glmmTMB(norm.exp ~ treatment * qpcrtime + (1 | block), family = Gamma(link = "log"),
    data = gen[gen$target == "IIf", ])

Anova(regression1Econtrols, type = "III")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##                      Chisq Df Pr(>Chisq)
## (Intercept)        246.425  1  < 2.2e-16 ***
## treatment           53.344  7  3.170e-09 ***
## qpcrtime            27.264  1  1.775e-07 ***
## treatment:qpcrtime  56.020  7  9.359e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
(regression1Econtrols_byqpcrtime <- emmeans(regression1Econtrols, pairwise ~ treatment *
    qpcrtime, by = "qpcrtime", type = "response", adjust = "fdr"))
```

```
## $emmeans
## qpcrtime = t4:
##  treatment response       SE  df lower.CL upper.CL
##  C         3.97e-05 2.56e-05 103 1.10e-05 1.43e-04
##  I         1.09e-02 6.67e-03 103 3.21e-03 3.67e-02
##  S         6.82e-04 3.66e-04 103 2.36e-04 1.98e-03
##  Te_0      1.15e-04 6.10e-05 103 4.03e-05 3.29e-04
##  VIT       3.26e-04 2.44e-04 103 7.38e-05 1.44e-03
```

```
##  Te_6M1    3.49e-04 2.78e-04 103 7.19e-05 1.70e-03
##  QG        3.90e-04 2.78e-04 103 9.51e-05 1.60e-03
##  PBS       4.90e-04 3.60e-04 103 1.14e-04 2.10e-03
##
## qpcrtime = t6:
##  treatment response       SE  df lower.CL upper.CL
##  C         3.81e-03 2.54e-03 103 1.01e-03 1.43e-02
##  I         5.72e-03 3.04e-03 103 1.99e-03 1.64e-02
##  S         9.32e-05 4.96e-05 103 3.24e-05 2.68e-04
##  Te_O      1.11e-04 5.92e-05 103 3.84e-05 3.20e-04
##  VIT       5.04e-05 3.39e-05 103 1.33e-05 1.91e-04
##  Te_6M1    6.69e-05 4.59e-05 103 1.71e-05 2.61e-04
##  QG        1.78e-05 1.26e-05 103 4.36e-06 7.27e-05
##  PBS       3.68e-05 2.50e-05 103 9.59e-06 1.41e-04
##
## Confidence level used: 0.95
## Intervals are back-transformed from the log scale
##
## $contrasts
## qpcrtime = t4:
##  contrast         ratio       SE  df null t.ratio p.value
##  C / I           0.0037 3.09e-03 103    1  -6.641  <.0001
##  C / S           0.0582 4.33e-02 103    1  -3.822  0.0015
##  C / Te_O        0.3448 2.58e-01 103    1  -1.425  0.2751
##  C / VIT         0.1220 1.15e-01 103    1  -2.231  0.0644
##  C / Te_6M1      0.1138 1.12e-01 103    1  -2.202  0.0644
##  C / QG          0.1018 9.22e-02 103    1  -2.523  0.0335
##  C / PBS         0.0810 7.57e-02 103    1  -2.688  0.0254
##  I / S          15.9079 1.20e+01 103    1   3.654  0.0019
##  I / Te_O       94.2587 7.22e+01 103    1   5.938  <.0001
##  I / VIT        33.3404 3.01e+01 103    1   3.889  0.0015
##  I / Te_6M1     31.1004 3.08e+01 103    1   3.469  0.0028
##  I / QG         27.8357 2.45e+01 103    1   3.775  0.0015
##  I / PBS        22.1360 1.99e+01 103    1   3.453  0.0028
##  S / Te_O        5.9253 3.96e+00 103    1   2.660  0.0254
##  S / VIT         2.0958 1.83e+00 103    1   0.848  0.5869
##  S / Te_6M1      1.9550 1.78e+00 103    1   0.734  0.6502
##  S / QG          1.7498 1.47e+00 103    1   0.667  0.6753
##  S / PBS         1.3915 1.19e+00 103    1   0.386  0.8521
##  Te_O / VIT      0.3537 3.00e-01 103    1  -1.226  0.3470
##  Te_O / Te_6M1   0.3299 2.91e-01 103    1  -1.259  0.3470
##  Te_O / QG       0.2953 2.42e-01 103    1  -1.486  0.2620
##  Te_O / PBS      0.2348 1.97e-01 103    1  -1.730  0.1732
##  VIT / Te_6M1    0.9328 9.68e-01 103    1  -0.067  0.9467
##  VIT / QG        0.8349 7.66e-01 103    1  -0.197  0.9094
##  VIT / PBS       0.6639 5.96e-01 103    1  -0.456  0.8260
##  Te_6M1 / QG     0.8950 9.02e-01 103    1  -0.110  0.9464
##  Te_6M1 / PBS    0.7118 7.28e-01 103    1  -0.332  0.8638
##  QG / PBS        0.7952 7.28e-01 103    1  -0.250  0.8991
##
## qpcrtime = t6:
##  contrast         ratio       SE  df null t.ratio p.value
##  C / I           0.6664 5.34e-01 103    1  -0.506  0.7162
##  C / S          40.9047 3.23e+01 103    1   4.703  <.0001
##  C / Te_O       34.3989 2.75e+01 103    1   4.423  0.0001
##  C / VIT        75.6277 6.71e+01 103    1   4.876  <.0001
```

```
##  C / Te_6M1     56.9740 5.20e+01 103    1   4.429  0.0001
##  C / QG        213.8897 1.89e+02 103    1   6.061  <.0001
##  C / PBS       103.5173 9.32e+01 103    1   5.151  <.0001
##  I / S          61.3806 4.13e+01 103    1   6.114  <.0001
##  I / Te_O       51.6182 3.42e+01 103    1   5.952  <.0001
##  I / VIT       113.4853 9.22e+01 103    1   5.823  <.0001
##  I / Te_6M1     85.4939 6.69e+01 103    1   5.689  <.0001
##  I / QG        320.9582 2.68e+02 103    1   6.920  <.0001
##  I / PBS       155.3358 1.24e+02 103    1   6.330  <.0001
##  S / Te_O        0.8410 5.58e-01 103    1  -0.261  0.7946
##  S / VIT         1.8489 1.49e+00 103    1   0.762  0.5972
##  S / Te_6M1      1.3928 1.16e+00 103    1   0.400  0.7605
##  S / QG          5.2290 4.42e+00 103    1   1.959  0.1057
##  S / PBS         2.5307 2.03e+00 103    1   1.156  0.3894
##  Te_O / VIT      2.1986 1.76e+00 103    1   0.983  0.4832
##  Te_O / Te_6M1   1.6563 1.35e+00 103    1   0.621  0.6525
##  Te_O / QG       6.2179 5.16e+00 103    1   2.203  0.0642
##  Te_O / PBS      3.0093 2.45e+00 103    1   1.354  0.3126
##  VIT / Te_6M1    0.7533 6.57e-01 103    1  -0.325  0.7738
##  VIT / QG        2.8282 2.47e+00 103    1   1.190  0.3894
##  VIT / PBS       1.3688 1.14e+00 103    1   0.378  0.7605
##  Te_6M1 / QG     3.7542 3.32e+00 103    1   1.497  0.2565
##  Te_6M1 / PBS    1.8169 1.59e+00 103    1   0.681  0.6334
##  QG / PBS        0.4840 4.36e-01 103    1  -0.806  0.5909
##
## P value adjustment: fdr method for 28 tests
## Tests are performed on the log scale
```

```
PH1E_qpctime <- as.data.frame(cld(regression1Econtrols_byqpcrtime, Letters = letters,
    adjust = "fdr", reverse = T))

(regression1Econtrols_bytreatment <- emmeans(regression1Econtrols, pairwise ~ treatment *
    qpcrtime, by = "treatment", type = "response", adjust = "fdr"))
```

```
## $emmeans
## treatment = C:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       3.97e-05 2.56e-05 103 1.10e-05 1.43e-04
##  t6       3.81e-03 2.54e-03 103 1.01e-03 1.43e-02
##
## treatment = I:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       1.09e-02 6.67e-03 103 3.21e-03 3.67e-02
##  t6       5.72e-03 3.04e-03 103 1.99e-03 1.64e-02
##
## treatment = S:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       6.82e-04 3.66e-04 103 2.36e-04 1.98e-03
##  t6       9.32e-05 4.96e-05 103 3.24e-05 2.68e-04
##
## treatment = Te_O:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       1.15e-04 6.10e-05 103 4.03e-05 3.29e-04
##  t6       1.11e-04 5.92e-05 103 3.84e-05 3.20e-04
##
## treatment = VIT:
```

```
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       3.26e-04 2.44e-04 103 7.38e-05 1.44e-03
##  t6       5.04e-05 3.39e-05 103 1.33e-05 1.91e-04
##
## treatment = Te_6M1:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       3.49e-04 2.78e-04 103 7.19e-05 1.70e-03
##  t6       6.69e-05 4.59e-05 103 1.71e-05 2.61e-04
##
## treatment = QG:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       3.90e-04 2.78e-04 103 9.51e-05 1.60e-03
##  t6       1.78e-05 1.26e-05 103 4.36e-06 7.27e-05
##
## treatment = PBS:
##  qpcrtime response       SE  df lower.CL upper.CL
##  t4       4.90e-04 3.60e-04 103 1.14e-04 2.10e-03
##  t6       3.68e-05 2.50e-05 103 9.59e-06 1.41e-04
##
## Confidence level used: 0.95
## Intervals are back-transformed from the log scale
##
## $contrasts
## treatment = C:
##  contrast   ratio       SE  df null t.ratio p.value
##  t4 / t6   0.0104  0.00911 103    1  -5.222  <.0001
##
## treatment = I:
##  contrast   ratio       SE  df null t.ratio p.value
##  t4 / t6   1.8984  1.37519 103    1   0.885  0.3783
##
## treatment = S:
##  contrast   ratio       SE  df null t.ratio p.value
##  t4 / t6   7.3251  4.89247 103    1   2.981  0.0036
##
## treatment = Te_O:
##  contrast   ratio       SE  df null t.ratio p.value
##  t4 / t6   1.0396  0.72471 103    1   0.056  0.9556
##
## treatment = VIT:
##  contrast   ratio       SE  df null t.ratio p.value
##  t4 / t6   6.4620  6.26273 103    1   1.925  0.0569
##
## treatment = Te_6M1:
##  contrast   ratio       SE  df null t.ratio p.value
##  t4 / t6   5.2187  5.22497 103    1   1.650  0.1019
##
## treatment = QG:
##  contrast   ratio       SE  df null t.ratio p.value
##  t4 / t6  21.8899 20.80326 103    1   3.247  0.0016
##
## treatment = PBS:
##  contrast   ratio       SE  df null t.ratio p.value
##  t4 / t6  13.3220 12.28489 103    1   2.808  0.0060
##
## Tests are performed on the log scale
```

```
PH1E_treatment <- as.data.frame(cld(regression1Econtrols_bytreatment, Letters = letters,
    adjust = "fdr", reverse = T))
```

Figure 2

(A)

Data set

File= "Figure1A_B & Figure2A.txt"

ovic - data set in R

block - Experimental block

qpcrtime - time point of experiment in which gene expression was measured (t4 - four days after first infestation; t6 - six days after first infestation)

plant - plant number

variety - Plant variety (CM = WT or def1= def-1)

Pop - Control: control benchmarks (inducer, suppressor or clean plants); Te: Populations of the species T. evansi; Tu: Populations of the species T. urticae

treatment - Mite population (T. urticae inducer benchmark, T. evansi suppressor benchmark, T. evansi outbred, VIT, 6M1, QG or PBS)

survfemales_1 - females that survived in the end of the first infestation (t4)

totalfemales_1 - total number of females (alive and dead) in the end of the first infestation (t4)

eggs_1 - eggs oviposited by the females of the first infestation

survfemales_2 - females that survived in the end of the second infestation (t6)

totalfemales_2 - total number of females (alive and dead) in the end of the second infestation (t6)

eggs_2 - eggs oviposited by the females of the second infestation

survmean_1 - average female survival; results from: survmean=(survfemales_1+totalfemales)/2

eggsp - Eggs per female (Fecundity); results from: eggsp=(eggs_1/survmean_1)

survmean_2 - average female survival; results from: survmean=(survfemales_2+3)/2

eggsc - Eggs per female (Fecundity) of competitor; results from: (eggs_2/survmean_2)

```
(F2A_summary <- ddply(ovic, .(variety,treatment), summarize, mean2=mean(eggsc,na.rm=TRUE), sd=sd(eggsc,na.rm=TRUE)
```

```
##   variety treatment    mean2       sd        se  n
## 1      CM         C 5.360606 4.886144 1.4732279 11
## 2      CM         I 4.333333 3.125807 0.9424661 11
## 3      CM         S 6.145455 3.372282 1.0167811 11
## 4      CM      Te_0 5.515152 4.027251 1.2142617 11
## 5      CM       VIT 5.300000 2.792928 1.1402079  6
## 6      CM    Te_6M1 4.255556 1.153481 0.4709067  6
## 7      CM        QG 6.761111 1.219183 0.4977294  6
## 8      CM       PBS 6.066667 4.572381 1.8666667  6
```

Normality test

```
shapiro.test(ovic$eggsc)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  ovic$eggsc
## W = 0.94924, p-value = 0.00771
```

Homogeneity test

```
leveneTest(eggsc ~ treatment, data = ovic)
```

```
## Levene's Test for Homogeneity of Variance (center = median)
##       Df F value  Pr(>F)
## group  7  2.3444 0.03484 *
##       60
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Statistics

```
regression2A <- glmer(eggsc + 1 ~ treatment + (1 | block), family = Gamma(link = "log"),
    data = ovic[ovic$treatment %in% c("C", "I", "S") == F, ])
Anova(regression2A, type = "III", tewtst = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: eggsc + 1
##               Chisq Df Pr(>Chisq)
## (Intercept) 85.1147  1     <2e-16 ***
## treatment    5.0907  4     0.2781
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
regression2A.c <- glmer(eggsc + 1 ~ treatment + (1 | block), family = Gamma(link = "log"),
    data = ovic)

Anova(regression2A.c, type = "III", tewtst = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: eggsc + 1
##               Chisq Df Pr(>Chisq)
## (Intercept) 80.3313  1     <2e-16 ***
## treatment    7.7907  7     0.3514
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

(B)

Data set

File =“Figure 1D_E & Figure 2B_C.txt”

gen- data set in R

block - Experimental block

sample - plant number (equivalent to plant in “Figure1A_B & Figure 2A.txt”)

Pop - Control: control benchmarks (inducer, suppressor or clean plants); Te: Populations of the species T. evansi; Tu: Populations of the species T. urticae

target - target gene (IIc - WIPII_IIc; IIf - WIPI-IIf)

qpcrtime - time point of experiment in which gene expression was measured (t4 - four days after first infestation; t6 - six days after first infestation)

treatment - Mite population (T. urticae inducer benchmark, T. evansi suppressor benchmark, T. evansi outbred, VIT, 6M1, QG or PBS)

norm.exp - Normalized expression

scaled - Normalized expression scaled to the minimum mean

```
(F2B_summary <- ddply(gen[gen$target=="IIc"&gen$qpcrtime=="t6",], .(treatment,qpcrtime), summarize, mean2=mean(sca
```

```
##   treatment qpcrtime      mean2         sd          se  n
## 1         C       t6 213.775380 305.165338  92.0108112 11
## 2         I       t6 474.620449 565.702915 170.5658465 11
## 3         S       t6  31.657387  53.384929  16.0961618 11
## 4      Te_0       t6  40.249065 103.947671  31.3414019 11
## 5       VIT       t6   5.259150   9.181126   3.7481792  6
## 6    Te_6M1       t6   4.802748   9.524904   3.8885259  6
## 7        QG       t6   1.322347   1.616115   0.7227488  5
## 8       PBS       t6   6.047554   8.489363   3.4657678  6
```

Stats in section of Figure 1D

(C)

Data set

File =“Figure 1D_E & Figure 2B_C.txt”

gen- data set in R

block - Experimental block

sample - plant number (equivalent to plant in “Figure1A_B & Figure 2A.txt”)

Pop - Control: control benchmarks (inducer, suppressor or clean plants); Te: Populations of the species T. evansi; Tu: Populations of the species T. urticae

target - target gene (IIc - WIPII_IIc; IIf - WIPI-IIf)

qpcrtime - time point of experiment in which gene expression was measured (t4 - four days after first infestation; t6 - six days after first infestation)

treatment - Mite population (T. urticae inducer benchmark, T. evansi suppressor benchmark, T. evansi outbred, VIT, 6M1, QG or PBS)

norm.exp - Normalized expression

scaled - Normalized expression scaled to the minimum mean

```
(F2C_summary <- ddply(gen[gen$target=="IIf"&gen$qpcrtime=="t6",], .(treatment,qpcrtime), summarize, mean2=mean(scal
```

```
##   treatment qpcrtime      mean2           sd          se  n
## 1         C       t6 271.213055  488.4162920 172.6812361  8
## 2         I       t6 817.992621 1432.7298061 431.9842902 11
## 3         S       t6   9.599318   14.5649544   4.3914990 11
## 4      Te_O       t6  22.531893   56.1544216  16.9311952 11
## 5       VIT       t6   2.324803    2.3285098   0.9506101  6
## 6    Te_6M1       t6   5.769186   10.6629396   4.3531269  6
## 7        QG       t6   1.000000    0.6267872   0.2803077  5
## 8       PBS       t6   2.378862    2.5275693   1.0318759  6
```

Stats in section of Figure 1E

Figure 3 ## **(A)**

Data set

File= "Figure3A & Figure 1S & Figure 2S.txt"

ovilines - data set in R

block - Experimental block

sample - plant number

variety - Plant variety (castlemart = WT or def1= def-1)

phenotype - if inbred line "inbred" or benchmark control "controls"

treatment - Mite population (Inbred line number, outbred line "O" or benchmark treatment - inducer "I", suppressor "S" or clean "C")

replicate - replicate number for each treatment

survfemales - females that survived in the end of the infestation

totalfemales - total number of females (alive and dead) in the end of the infestation

eggs - eggs oviposited by the females

survmean- average female survival; results from: survmean=(survfemales_1+totalfemales)/2

eggsmean - Eggs per female (Fecundity); results from: eggsp=(eggs_1/survmean_1)

```
(F3A_summary<-ddply(ovilines[ovilines$treatment!="C"&ovilines$treatment!="NA",], .(phenotype,variety,treatment), su
```

```
##     phenotype    variety treatment     mean2        sd        se  n
## 1    controls castlemart         I  6.646892 3.0937795 0.3572389 75
## 2    controls castlemart         S  9.860352 3.7264190 0.4302898 75
## 3    controls castlemart         O  7.335714 4.2008017 1.8786556  5
## 4    controls       def1         I 11.663415 4.3806646 0.5162663 72
## 5    controls       def1         S 11.127191 3.3217819 0.4058202 67
## 6    controls       def1         O  7.718358 4.6298796 2.0705451  5
## 7      inbred castlemart         1  4.461686 1.1814918 0.4465619  7
## 8      inbred castlemart         2  5.949385 1.1974308 0.4888491  6
## 9      inbred castlemart         3  7.187257 2.8739425 1.1732821  6
```

```
## 10     inbred castlemart         4  6.804210 2.6452159 1.1829765  5
## 11     inbred castlemart         5  7.601581 4.0435588 1.6507760  6
## 12     inbred castlemart         6  6.224725 2.7844872 1.1367621  6
## 13     inbred castlemart         7  7.424958 4.3723756 1.7850149  6
## 14     inbred castlemart         8  4.537208 2.8637834 1.1691347  6
## 15     inbred castlemart         9  7.530340 2.1522703 0.8786607  6
## 16     inbred castlemart        10  6.590053 2.9984394 1.3409429  5
## 17     inbred castlemart        11  6.596572 2.9207254 1.1923812  6
## 18     inbred castlemart        12  9.698176 5.5728456 2.1063377  7
## 19     inbred castlemart        13  5.087985 1.9975755 0.8155068  6
## 20     inbred castlemart        14 10.608215 7.2370115 2.9544976  6
## 21     inbred castlemart        15  7.125236 4.6907848 1.9150049  6
## 22     inbred castlemart        16  6.977015 3.5623883 1.3464562  7
## 23     inbred castlemart        17  5.453006 1.1392292 0.4650884  6
## 24     inbred castlemart        18  5.910354 2.0092555 0.8202751  6
## 25     inbred castlemart        19  4.060112 1.4557942 0.7278971  4
## 26     inbred castlemart        20  6.493687 3.9983553 1.6323217  6
## 27     inbred castlemart        22  7.764679 3.1611153 1.2905199  6
## 28     inbred castlemart        23  5.673265 5.1978026 2.3245280  5
## 29     inbred castlemart        24  6.761663 2.6592977 1.1892741  5
## 30     inbred castlemart        25  6.960556 3.1740128 1.2957853  6
## 31     inbred castlemart        26  8.526935 3.4647217 1.5494707  5
## 32     inbred castlemart        27 11.666143 6.1094102 2.7322113  5
## 33     inbred castlemart        28  8.591991 4.5883349 1.8731799  6
## 34     inbred castlemart        29  6.032959 3.2512525 1.3273183  6
## 35     inbred castlemart        30  6.588481 4.0876617 1.6687809  6
## 36     inbred castlemart        31  8.687622 2.7629836 1.0443096  7
## 37     inbred castlemart        32  4.792869 2.0118007 0.8213142  6
## 38     inbred castlemart        33  6.457212 4.6719685 1.9073232  6
## 39     inbred castlemart        34  8.367122 3.4557944 1.4108222  6
## 40     inbred castlemart        35  8.005460 3.2273587 1.4433187  5
## 41     inbred castlemart        36  7.475289 2.4780948 1.0116780  6
## 42     inbred castlemart        37  5.375714 3.2922125 1.4723222  5
## 43     inbred castlemart        38  4.851990 1.8315443 0.7477248  6
## 44     inbred castlemart        39  4.715383 1.0282721 0.4598573  5
## 45     inbred castlemart        41  6.078229 3.4179431 1.3953694  6
## 46     inbred castlemart        42  7.815246 1.9901873 0.8124906  6
## 47     inbred castlemart        43  5.473942 2.2379692 0.9136471  6
## 48     inbred castlemart        44  9.333100 2.8903224 1.1799692  6
## 49     inbred castlemart        45  5.907064 3.3815478 1.3805111  6
## 50     inbred castlemart        46  9.270202 5.8386307 2.2067950  7
## 51     inbred castlemart        47  5.175675 3.0281898 1.2362533  6
## 52     inbred castlemart        48  8.930382 3.0842043 1.2591211  6
## 53     inbred castlemart        49  8.388170 5.9710593 2.2568483  7
## 54     inbred castlemart        50  6.006431 3.3029203 1.3484116  6
## 55     inbred castlemart        51  9.631087 4.5490433 1.7193768  7
## 56     inbred castlemart        52  7.899429 3.2894070 1.3428948  6
## 57     inbred castlemart        53  7.138712 3.6457873 1.4883865  6
## 58     inbred castlemart        54  6.050464 3.1400234 1.1868173  7
## 59     inbred castlemart        55  5.234905 2.2928313 0.8666088  7
## 60     inbred castlemart        56  6.697344 3.3223333 1.3563369  6
## 61     inbred castlemart        57  6.720758 2.6714729 1.0906242  6
## 62     inbred castlemart        58  8.584886 6.4699696 2.6413540  6
## 63     inbred castlemart        59  4.487458 4.6645119 1.9042790  6
## 64     inbred castlemart        60  4.944094 2.7385938 1.1180262  6
## 65     inbred castlemart        61  7.120588 4.5238662 1.8468606  6
```

```
## 66     inbred       def1         1  5.088196 1.7434318 0.7117531  6
## 67     inbred       def1         2  7.711744 2.4834938 0.9386724  7
## 68     inbred       def1         3  6.801657 2.0452034 0.8349508  6
## 69     inbred       def1         4  9.758581 4.3756498 1.7863515  6
## 70     inbred       def1         5  9.455453 4.6741341 1.9082073  6
## 71     inbred       def1         6  6.066734 1.2994350 0.5304921  6
## 72     inbred       def1         7  6.901702 4.2754766 1.7454560  6
## 73     inbred       def1         8  6.694671 4.4941538 1.8347306  6
## 74     inbred       def1         9  7.991489 2.9960669 1.3398819  5
## 75     inbred       def1        10  8.926154 3.2378176 1.4479961  5
## 76     inbred       def1        11  8.771571 3.4046394 1.3899382  6
## 77     inbred       def1        12  7.185959 2.7216728 1.1111183  6
## 78     inbred       def1        13  5.795455 1.8220099 0.7438324  6
## 79     inbred       def1        14  9.910442 5.9023986 2.4096441  6
## 80     inbred       def1        15  6.395249 3.9660116 1.6191175  6
## 81     inbred       def1        16  6.604580 3.8853816 1.4685362  7
## 82     inbred       def1        17  6.477349 2.6424808 1.0787883  6
## 83     inbred       def1        18  7.237273 4.2325759 1.8928655  5
## 84     inbred       def1        19  3.385933 0.7462223 0.3731111  4
## 85     inbred       def1        20  6.365751 4.9162309 2.1986053  5
## 86     inbred       def1        22  7.681044 3.5956212 1.4679062  6
## 87     inbred       def1        23  4.896051 3.8497038 1.7216399  5
## 88     inbred       def1        24  6.467754 4.0031688 1.6342868  6
## 89     inbred       def1        25  6.450269 3.4399737 1.5384030  5
## 90     inbred       def1        26  8.579330 4.2660549 1.7416096  6
## 91     inbred       def1        27  8.671756 3.9905394 1.6291309  6
## 92     inbred       def1        28  9.003030 2.7349146 1.2230910  5
## 93     inbred       def1        29  6.443072 2.9795963 1.2164151  6
## 94     inbred       def1        30  6.810352 3.3843433 1.3816524  6
## 95     inbred       def1        31  8.789190 2.7900147 1.0545264  7
## 96     inbred       def1        32  5.814990 2.4100646 1.0778136  5
## 97     inbred       def1        33  6.314616 4.1920503 1.5844461  7
## 98     inbred       def1        34  8.683606 2.2109188 0.8356488  7
## 99     inbred       def1        35  6.381066 3.6680258 1.4974653  6
## 100    inbred       def1        36  7.520907 3.9659449 1.6190902  6
## 101    inbred       def1        37  6.252522 4.6112281 2.0622039  5
## 102    inbred       def1        38  6.173246 1.8247653 0.7449573  6
## 103    inbred       def1        39  7.478052 3.9955291 1.9977646  4
## 104    inbred       def1        41  7.606161 4.0241483 1.6428517  6
## 105    inbred       def1        42  5.697421 1.4852183 0.6063378  6
## 106    inbred       def1        43  5.410587 2.7444593 1.1204208  6
## 107    inbred       def1        44 11.991292 4.6148311 2.0638152  5
## 108    inbred       def1        45  6.994921 3.1243197 1.2754982  6
## 109    inbred       def1        46  9.388581 5.2366900 2.3419190  5
## 110    inbred       def1        47  6.495894 3.3331305 1.3607448  6
## 111    inbred       def1        48 10.005226 3.8013492 1.5518943  6
## 112    inbred       def1        49 10.315573 4.4338147 1.9828622  5
## 113    inbred       def1        50  7.203131 2.1193644 0.8652269  6
## 114    inbred       def1        51 11.633478 5.2003333 2.1230272  6
## 115    inbred       def1        52  8.743787 3.3891789 1.3836265  6
## 116    inbred       def1        53  5.887427 4.6589374 1.9020032  6
## 117    inbred       def1        54  7.143939 3.5399415 1.4451751  6
## 118    inbred       def1        55  6.831306 3.8426084 1.5687383  6
## 119    inbred       def1        56  6.912206 4.6485384 2.0788896  5
## 120    inbred       def1        57  7.026501 2.8508385 1.1638500  6
## 121    inbred       def1        58  8.443038 3.9969742 1.6317579  6
```

```
## 122    inbred       def1        59  5.159209 3.1825102 1.4232618  5
## 123    inbred       def1        60  6.713978 2.9785789 1.2159997  6
## 124    inbred       def1        61  8.377713 3.9382316 1.6077763  6
```

```
(F3A_summary<-ddply(ovilines[ovilines$treatment%in%c("C","O","I","S","NA")==F,], .(variety), summarize, mean2=mean
```

```
##      variety    mean2       sd        se   n
## 1 castlemart 6.918159 3.708968 0.1976886 352
## 2       def1 7.405221 3.651206 0.1977239 341
```

Heritability on WT

```
model0<- glmer(eggsp ~ 1 +(1|block) ,
               control = glmerControl(
                 optimizer ='bobyqa'),
               family=Gamma(link="log"), data=ovilines[ovilines$variety=="castlemart",])


model1 <- glmer(eggsp
                ~ 1 + (1|treatment)+(1|block), family=Gamma(link="log"), data=ovilines[ovilines$variety=="castlemar

anova(model1, model0)
```

```
## Data: ovilines[ovilines$variety == "castlemart", ]
## Models:
## model0: eggsp ~ 1 + (1 | block)
## model1: eggsp ~ 1 + (1 | treatment) + (1 | block)
##        npar    AIC    BIC  logLik deviance  Chisq Df Pr(>Chisq)
## model0    3 2602.0 2614.7 -1298.0   2596.0
## model1    4 2528.6 2545.5 -1260.3   2520.6 75.435  1  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
var_Gene2<-as.numeric(as.data.frame(VarCorr(model1))[1,4])
var_block2<-as.numeric(as.data.frame(VarCorr(model1))[2,4])

var_Resid2<-as.numeric(as.data.frame(VarCorr(model1))[3,4])

# Estimate heritability as line / (line + block + residuals) * 100
Herit2<-var_Gene2 / (var_Gene2 +  var_block2+ var_Resid2) * 100
Herit2
```

```
## [1] 9.427707
```

Heritability on def-1

```
model0<- glmer(eggsp ~ 1 +(1|block) , family=Gamma(link="log"), data=ovilines[ovilines$variety=="def1",])


model1 <- glmer(eggsp
                ~ 1 + (1|treatment) +(1|block), family=Gamma(link="log"), data=ovilines[ovilines$variety=="def1",])

anova(model1, model0)
```

```
## Data: ovilines[ovilines$variety == "def1", ]
## Models:
## model0: eggsp ~ 1 + (1 | block)
## model1: eggsp ~ 1 + (1 | treatment) + (1 | block)
##        npar    AIC    BIC  logLik deviance  Chisq Df Pr(>Chisq)
## model0    3 2647.9 2660.4 -1320.9   2641.9
## model1    4 2513.4 2530.1 -1252.7   2505.4 136.49  1  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
var_Gene2<-as.numeric(as.data.frame(VarCorr(model1))[1,4])
var_block2<-as.numeric(as.data.frame(VarCorr(model1))[2,4])

var_Resid2<-as.numeric(as.data.frame(VarCorr(model1))[3,4])


# Estimate heritability as line / (line + residual + plantvar) * 100
Herit2<-var_Gene2 / (var_Gene2 + var_block2+ var_Resid2) * 100
Herit2
```

```
## [1] 12.16471
```

Genetic correlation fecundity on WT vs def-1

```
model2.0<- glmer(eggsp ~ plantvar+(0+plantvar|treatment)+(1|block), family=Gamma(link="log"), data=ovilines[complet

##### 3) Significance of Genetic Correlation

model2.1<-  glmer(eggsp ~ plantvar+(1|block) + (0+model.matrix(model2.0)[,2]||treatment),family=Gamma(link="log"),

#remove correlation
anova(model2.0, model2.1)
```

```
## Data: ovilines[complete.cases(ovilines$eggsp), ]
## Models:
## model2.1: eggsp ~ plantvar + (1 | block) + (0 + model.matrix(model2.0)[, 2] || treatment)
## model2.0: eggsp ~ plantvar + (0 + plantvar | treatment) + (1 | block)
##          npar    AIC    BIC  logLik deviance  Chisq Df Pr(>Chisq)
## model2.1    5 5093.3 5117.8 -2541.7   5083.3
## model2.0    7 4992.8 5027.1 -2489.4   4978.8 104.58  2  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##### 4) Genetic correlation value
summary(model2.0)
```

```
## Generalized linear mixed model fit by maximum likelihood (Laplace
##   Approximation) [glmerMod]
##  Family: Gamma  ( log )
## Formula: eggsp ~ plantvar + (0 + plantvar | treatment) + (1 | block)
##    Data: ovilines[complete.cases(ovilines$eggsp), ]
##
##      AIC      BIC   logLik deviance df.resid
```

```
##   4992.8   5027.1  -2489.4   4978.8      985
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.0888 -0.6863 -0.0808  0.6381  4.3276
##
## Random effects:
##  Groups    Name                Variance Std.Dev. Corr
##  treatment plantvarcastlemart 0.02155  0.1468
##            plantvardef1       0.02637  0.1624   0.72
##  block     (Intercept)        0.03491  0.1869
##  Residual                     0.16266  0.4033
## Number of obs: 992, groups:  treatment, 62; block, 35
##
## Fixed effects:
##              Estimate Std. Error t value Pr(>|z|)
## (Intercept)   1.87678    0.07414  25.315   <2e-16 ***
## plantvardef1  0.07835    0.03557   2.202   0.0276 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr)
## plantvardf1 -0.183
```

(B)

Data set

File ="Figure 3B_C & Figure 2S.txt"

gen.lines - data set in R

block - Experimental block

sample - plant number

phenotype - if inbred line "inbred" or benchmark control "controls"

target - target gene (IIc - WIPII_IIc; IIf - WIPI-IIf)

treatment - Mite population (Inbred line number, outbred line "O" or benchmark treatment - inducer "I", suppressor "S" or clean "C")

norm.exp - Normalized expression

scaled - Normalized expression scaled to the minimum mean

replicate - replicate number for each treatment

```
(F3B_summary <- ddply(gen.lines[gen.lines$target=="IIc",], .(treatment, phenotype), summarize, mean2=mean(scaled,na
```

```
##    treatment phenotype      mean2         sd          se n
## 1          C  controls   1.000000   1.305039   0.6525195 4
## 2          I  controls 107.403958  78.385978  39.1929889 4
## 3          S  controls  10.645854   8.186512   4.0932562 4
## 4          O  controls   4.845624   5.964118   2.6672347 5
## 5          1     lines  34.749677  58.385094  26.1106079 5
## 6          8     lines  48.440830 101.637645  45.4537365 5
## 7         11     lines   4.498682   3.759016   1.5346118 6
## 8         12     lines  49.609256 114.564935  43.3014753 7
```

```
## 9         15     lines  25.177516  35.717504  14.5816101 6
## 10        16     lines  14.237133  27.655917  10.4529541 7
## 11        28     lines  11.032546  11.513825   4.7004992 6
## 12        30     lines  62.319460 137.024559  55.9400421 6
## 13        32     lines 171.241796 358.251674 160.2150193 5
## 14        37     lines  32.529383  67.508911  30.1909030 5
## 15        38     lines 169.060014 270.014433 110.2329305 6
## 16        39     lines 123.529834 185.066734  82.7643595 5
## 17        42     lines  88.380540 112.628036  50.3687889 5
## 18        48     lines 153.300931 287.505998 117.3738324 6
## 19        54     lines  32.052769  34.331358  12.9760336 7
## 20        56     lines  36.327785  50.620623  20.6657829 6
## 21        59     lines  28.183191  46.266190  18.8880930 6
## 22        60     lines  21.855729  37.170879  15.1749476 6
## 23        61     lines   5.779165   3.065656   1.2515490 6
```

Normality test

```
shapiro.test(gen.lines[gen.lines$target == "IIc" & gen.lines$treatment %in% c("C",
    "I", "S", "O") == F, ]$norm.exp)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  gen.lines[gen.lines$target == "IIc" & gen.lines$treatment %in% c("C", "I", "S", "O") == F, ]$norm.exp
## W = 0.44095, p-value < 2.2e-16
```

Homogeneity test

```
leveneTest(norm.exp ~ treatment, data = gen.lines[gen.lines$target == "IIc" & gen.lines$treatment %in%
    c("C", "I", "S", "O") == F, ])
```

```
## Levene's Test for Homogeneity of Variance (center = median)
##       Df F value Pr(>F)
## group 18  0.8553 0.6319
##       92
```

Statistics without benchmark controls

```
regression3B <- glmmTMB(norm.exp ~ treatment + (1 | block), family = Gamma(link = "log"),
    data = gen.lines[gen.lines$target == "IIc" & gen.lines$treatment %in% c("C",
        "I", "S", "O") == F & complete.cases(gen.lines$norm.exp), ])

Anova(regression3B, type = "III")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##               Chisq Df Pr(>Chisq)
## (Intercept) 224.325  1    < 2e-16 ***
```

```
## treatment    32.119 18    0.02128 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
multcomp_dev_3B <- emmeans(regression3B, type = "response", pairwise ~ treatment,
    adjust = "fdr")
PH3B <- as.data.frame(cld(multcomp_dev_3B, Letters = letters, adjust = "fdr", reverse = T,
    decreasing = T))

write.table(as.data.frame(multcomp_dev_3B$contrasts), file = "fuckthis.txt")
```

Statistics with benchmark controls

```
regression3B.controls <- glmmTMB(norm.exp ~ treatment + (1 | block), family = Gamma(link = "log"),
    data = gen.lines[gen.lines$target == "IIc", ])


Anova(regression3B.controls, type = "III")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##              Chisq Df Pr(>Chisq)
## (Intercept) 254.16  1  < 2.2e-16 ***
## treatment    78.47 22  2.887e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
multcomp_dev_3B <- emmeans(regression3B.controls, type = "response", pairwise ~ treatment,
    adjust = "fdr")
PH3B <- as.data.frame(cld(multcomp_dev_3B, Letters = letters, adjust = "fdr", reverse = T,
    decreasing = T))

table.S8 <- as.data.frame(multcomp_dev_3B$contrasts)
write.table(table.S8$contrast, file = "megaposthoc2.txt")
```

(C)

Data set

File =“Figure 3B_C & Figure 2S.txt”

gen.lines - data set in R

block - Experimental block

sample - plant number

phenotype - if inbred line “inbred” or benchmark control “controls”

target - target gene (IIc - WIPII_IIc; IIf - WIPI-IIf)

treatment - Mite population (Inbred line number, outbred line “O” or benchmark treatment - inducer “I”, suppressor “S” or clean “C”)

norm.exp - Normalized expression

scaled - Normalized expression scaled to the minimum mean

replicate - replicate number for each treatment

```
(F3C_summary <- ddply(gen.lines[gen.lines$target=="IIf",], .(treatment, phenotype), summarize, mean2=mean(scaled,na
```

```
##    treatment phenotype       mean2          sd          se n
## 1          C  controls    1.000000    0.3030155   0.1515078 4
## 2          I  controls   53.525439   47.5410606  23.7705303 4
## 3          S  controls    2.462031    2.7381372   1.3690686 4
## 4          O  controls   25.018232   42.7834797  21.3917398 4
## 5          1     lines  778.414278 1350.2096181 603.8320980 5
## 6          8     lines  403.816403  700.2389211 313.1563656 5
## 7         11     lines   20.232370   21.6250928   8.8284072 6
## 8         12     lines   18.644689   19.1888254   7.2526943 7
## 9         15     lines  108.498285  216.0627825  88.2072616 6
## 10        16     lines   63.109279  137.3838240  51.9262046 7
## 11        28     lines   53.992469   46.9926013  19.1846491 6
## 12        30     lines  438.879312 1037.3386727 423.4917398 6
## 13        32     lines   48.408187   87.2943572  39.0392234 5
## 14        37     lines  110.443433  228.5752830 102.2219742 5
## 15        38     lines  180.063356  244.0892453  99.6490171 6
## 16        39     lines   20.669849   39.4335896  17.6352374 5
## 17        42     lines 1273.324560 1739.3028206 777.8398681 5
## 18        48     lines  157.477945  219.0792095  89.4387127 6
## 19        54     lines   76.631411   85.3189261  32.2475229 7
## 20        56     lines   65.163278   98.5021747  40.2133444 6
## 21        59     lines  128.255046  204.5513285  83.5077302 6
## 22        60     lines   81.920067  149.4517920  61.0134386 6
## 23        61     lines   27.391175   32.5314139  13.2808941 6
```

Normality test

```
shapiro.test(gen.lines[gen.lines$target == "IIf" & gen.lines$treatment %in% c("C",
    "I", "S", "O") == F, ]$norm.exp)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  gen.lines[gen.lines$target == "IIf" & gen.lines$treatment %in% c("C", "I", "S", "O") == F, ]$norm.exp
## W = 0.35647, p-value < 2.2e-16
```

Homogeneity of variance test

```
leveneTest(norm.exp ~ treatment, data = gen.lines[gen.lines$target == "IIf" & gen.lines$treatment %in%
    c("C", "I", "S", "O") == F, ])
```

```
## Levene's Test for Homogeneity of Variance (center = median)
##       Df F value  Pr(>F)
## group 18  1.7944 0.03755 *
##       92
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Statistics without benchmark controls

```
regression3C <- glmmTMB(norm.exp ~ treatment + (1 | block), family = Gamma(link = "log"),
    data = gen.lines[gen.lines$target == "IIf" & gen.lines$treatment %in% c("C",
        "I", "S", "O") == F, ])


Anova(regression3C, type = "III", tewtst = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##              Chisq Df Pr(>Chisq)
## (Intercept) 34.963  1  3.361e-09 ***
## treatment   54.515 18  1.525e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Statistics with benchmark controls

```
regression3C.controls <- glmmTMB(norm.exp ~ treatment + (1 | block), family = Gamma(link = "log"),
    data = gen.lines[gen.lines$target == "IIf", ])

Anova(regression3C.controls, type = "III")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: norm.exp
##               Chisq Df Pr(>Chisq)
## (Intercept) 168.199  1  < 2.2e-16 ***
## treatment    98.584 22  1.139e-11 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
multcomp_dev_3C <- emmeans(regression3C.controls, pairwise ~ treatment, adjust = "fdr")
PH3C <- as.data.frame(cld(multcomp_dev_3C, Letters = letters, adjust = "fdr", reverse = T,
    decreasing = T))
table.S8 <- as.data.frame(multcomp_dev_3C$contrasts)
write.table(table.S8, file = "megaposthoc3.txt")
```

Figure 1S

Data set

File= "Figure3A & Figure 1S & Figure 2S.txt"

ovilines - data set in R

block - Experimental block

sample - plant number

variety - Plant variety (castlemart = WT or def1= def-1)

phenotype - if inbred line “inbred” or benchmark control “controls”

treatment - Mite population (Inbred line number, outbred line “O” or benchmark treatment - inducer “I”, suppressor “S” or clean “C”)

replicate - replicate number for each treatment

survfemales - females that survived in the end of the infestation

totalfemales - total number of females (alive and dead) in the end of the infestation

eggs - eggs oviposited by the females

survmean- average female survival; results from: survmean=(survfemales_1+totalfemales)/2

eggsmean - Eggs per female (Fecundity); results from: eggsp=(eggs_1/survmean_1)

```
(FS1_summary<-ddply(ovilines[ovilines$treatment!="C"&ovilines$treatment!="NA",], .(phenotype,variety,treatment), su
```

```
##     phenotype    variety treatment     mean2        sd        se  n
## 1    controls castlemart         I  6.646892 3.0937795 0.3572389 75
## 2    controls castlemart         S  9.860352 3.7264190 0.4302898 75
## 3    controls castlemart         O  7.335714 4.2008017 1.8786556  5
## 4    controls       def1         I 11.663415 4.3806646 0.5162663 72
## 5    controls       def1         S 11.127191 3.3217819 0.4058202 67
## 6    controls       def1         O  7.718358 4.6298796 2.0705451  5
## 7      inbred castlemart         1  4.461686 1.1814918 0.4465619  7
## 8      inbred castlemart         2  5.949385 1.1974308 0.4888491  6
## 9      inbred castlemart         3  7.187257 2.8739425 1.1732821  6
## 10     inbred castlemart         4  6.804210 2.6452159 1.1829765  5
## 11     inbred castlemart         5  7.601581 4.0435588 1.6507760  6
## 12     inbred castlemart         6  6.224725 2.7844872 1.1367621  6
## 13     inbred castlemart         7  7.424958 4.3723756 1.7850149  6
## 14     inbred castlemart         8  4.537208 2.8637834 1.1691347  6
## 15     inbred castlemart         9  7.530340 2.1522703 0.8786607  6
## 16     inbred castlemart        10  6.590053 2.9984394 1.3409429  5
## 17     inbred castlemart        11  6.596572 2.9207254 1.1923812  6
## 18     inbred castlemart        12  9.698176 5.5728456 2.1063377  7
## 19     inbred castlemart        13  5.087985 1.9975755 0.8155068  6
## 20     inbred castlemart        14 10.608215 7.2370115 2.9544976  6
## 21     inbred castlemart        15  7.125236 4.6907848 1.9150049  6
## 22     inbred castlemart        16  6.977015 3.5623883 1.3464562  7
## 23     inbred castlemart        17  5.453006 1.1392292 0.4650884  6
## 24     inbred castlemart        18  5.910354 2.0092555 0.8202751  6
## 25     inbred castlemart        19  4.060112 1.4557942 0.7278971  4
## 26     inbred castlemart        20  6.493687 3.9983553 1.6323217  6
## 27     inbred castlemart        22  7.764679 3.1611153 1.2905199  6
## 28     inbred castlemart        23  5.673265 5.1978026 2.3245280  5
## 29     inbred castlemart        24  6.761663 2.6592977 1.1892741  5
## 30     inbred castlemart        25  6.960556 3.1740128 1.2957853  6
## 31     inbred castlemart        26  8.526935 3.4647217 1.5494707  5
## 32     inbred castlemart        27 11.666143 6.1094102 2.7322113  5
## 33     inbred castlemart        28  8.591991 4.5883349 1.8731799  6
## 34     inbred castlemart        29  6.032959 3.2512525 1.3273183  6
## 35     inbred castlemart        30  6.588481 4.0876617 1.6687809  6
## 36     inbred castlemart        31  8.687622 2.7629836 1.0443096  7
## 37     inbred castlemart        32  4.792869 2.0118007 0.8213142  6
## 38     inbred castlemart        33  6.457212 4.6719685 1.9073232  6
## 39     inbred castlemart        34  8.367122 3.4557944 1.4108222  6
## 40     inbred castlemart        35  8.005460 3.2273587 1.4433187  5
## 41     inbred castlemart        36  7.475289 2.4780948 1.0116780  6
```

```
## 42     inbred castlemart        37  5.375714 3.2922125 1.4723222  5
## 43     inbred castlemart        38  4.851990 1.8315443 0.7477248  6
## 44     inbred castlemart        39  4.715383 1.0282721 0.4598573  5
## 45     inbred castlemart        41  6.078229 3.4179431 1.3953694  6
## 46     inbred castlemart        42  7.815246 1.9901873 0.8124906  6
## 47     inbred castlemart        43  5.473942 2.2379692 0.9136471  6
## 48     inbred castlemart        44  9.333100 2.8903224 1.1799692  6
## 49     inbred castlemart        45  5.907064 3.3815478 1.3805111  6
## 50     inbred castlemart        46  9.270202 5.8386307 2.2067950  7
## 51     inbred castlemart        47  5.175675 3.0281898 1.2362533  6
## 52     inbred castlemart        48  8.930382 3.0842043 1.2591211  6
## 53     inbred castlemart        49  8.388170 5.9710593 2.2568483  7
## 54     inbred castlemart        50  6.006431 3.3029203 1.3484116  6
## 55     inbred castlemart        51  9.631087 4.5490433 1.7193768  7
## 56     inbred castlemart        52  7.899429 3.2894070 1.3428948  6
## 57     inbred castlemart        53  7.138712 3.6457873 1.4883865  6
## 58     inbred castlemart        54  6.050464 3.1400234 1.1868173  7
## 59     inbred castlemart        55  5.234905 2.2928313 0.8666088  7
## 60     inbred castlemart        56  6.697344 3.3223333 1.3563369  6
## 61     inbred castlemart        57  6.720758 2.6714729 1.0906242  6
## 62     inbred castlemart        58  8.584886 6.4699696 2.6413540  6
## 63     inbred castlemart        59  4.487458 4.6645119 1.9042790  6
## 64     inbred castlemart        60  4.944094 2.7385938 1.1180262  6
## 65     inbred castlemart        61  7.120588 4.5238662 1.8468606  6
## 66     inbred       def1         1  5.088196 1.7434318 0.7117531  6
## 67     inbred       def1         2  7.711744 2.4834938 0.9386724  7
## 68     inbred       def1         3  6.801657 2.0452034 0.8349508  6
## 69     inbred       def1         4  9.758581 4.3756498 1.7863515  6
## 70     inbred       def1         5  9.455453 4.6741341 1.9082073  6
## 71     inbred       def1         6  6.066734 1.2994350 0.5304921  6
## 72     inbred       def1         7  6.901702 4.2754766 1.7454560  6
## 73     inbred       def1         8  6.694671 4.4941538 1.8347306  6
## 74     inbred       def1         9  7.991489 2.9960669 1.3398819  5
## 75     inbred       def1        10  8.926154 3.2378176 1.4479961  5
## 76     inbred       def1        11  8.771571 3.4046394 1.3899382  6
## 77     inbred       def1        12  7.185959 2.7216728 1.1111183  6
## 78     inbred       def1        13  5.795455 1.8220099 0.7438324  6
## 79     inbred       def1        14  9.910442 5.9023986 2.4096441  6
## 80     inbred       def1        15  6.395249 3.9660116 1.6191175  6
## 81     inbred       def1        16  6.604580 3.8853816 1.4685362  7
## 82     inbred       def1        17  6.477349 2.6424808 1.0787883  6
## 83     inbred       def1        18  7.237273 4.2325759 1.8928655  5
## 84     inbred       def1        19  3.385933 0.7462223 0.3731111  4
## 85     inbred       def1        20  6.365751 4.9162309 2.1986053  5
## 86     inbred       def1        22  7.681044 3.5956212 1.4679062  6
## 87     inbred       def1        23  4.896051 3.8497038 1.7216399  5
## 88     inbred       def1        24  6.467754 4.0031688 1.6342868  6
## 89     inbred       def1        25  6.450269 3.4399737 1.5384030  5
## 90     inbred       def1        26  8.579330 4.2660549 1.7416096  6
## 91     inbred       def1        27  8.671756 3.9905394 1.6291309  6
## 92     inbred       def1        28  9.003030 2.7349146 1.2230910  5
## 93     inbred       def1        29  6.443072 2.9795963 1.2164151  6
## 94     inbred       def1        30  6.810352 3.3843433 1.3816524  6
## 95     inbred       def1        31  8.789190 2.7900147 1.0545264  7
## 96     inbred       def1        32  5.814990 2.4100646 1.0778136  5
## 97     inbred       def1        33  6.314616 4.1920503 1.5844461  7
```

```
## 98     inbred       def1        34  8.683606 2.2109188 0.8356488  7
## 99     inbred       def1        35  6.381066 3.6680258 1.4974653  6
## 100    inbred       def1        36  7.520907 3.9659449 1.6190902  6
## 101    inbred       def1        37  6.252522 4.6112281 2.0622039  5
## 102    inbred       def1        38  6.173246 1.8247653 0.7449573  6
## 103    inbred       def1        39  7.478052 3.9955291 1.9977646  4
## 104    inbred       def1        41  7.606161 4.0241483 1.6428517  6
## 105    inbred       def1        42  5.697421 1.4852183 0.6063378  6
## 106    inbred       def1        43  5.410587 2.7444593 1.1204208  6
## 107    inbred       def1        44 11.991292 4.6148311 2.0638152  5
## 108    inbred       def1        45  6.994921 3.1243197 1.2754982  6
## 109    inbred       def1        46  9.388581 5.2366900 2.3419190  5
## 110    inbred       def1        47  6.495894 3.3331305 1.3607448  6
## 111    inbred       def1        48 10.005226 3.8013492 1.5518943  6
## 112    inbred       def1        49 10.315573 4.4338147 1.9828622  5
## 113    inbred       def1        50  7.203131 2.1193644 0.8652269  6
## 114    inbred       def1        51 11.633478 5.2003333 2.1230272  6
## 115    inbred       def1        52  8.743787 3.3891789 1.3836265  6
## 116    inbred       def1        53  5.887427 4.6589374 1.9020032  6
## 117    inbred       def1        54  7.143939 3.5399415 1.4451751  6
## 118    inbred       def1        55  6.831306 3.8426084 1.5687383  6
## 119    inbred       def1        56  6.912206 4.6485384 2.0788896  5
## 120    inbred       def1        57  7.026501 2.8508385 1.1638500  6
## 121    inbred       def1        58  8.443038 3.9969742 1.6317579  6
## 122    inbred       def1        59  5.159209 3.1825102 1.4232618  5
## 123    inbred       def1        60  6.713978 2.9785789 1.2159997  6
## 124    inbred       def1        61  8.377713 3.9382316 1.6077763  6
```

Normality test

```
shapiro.test(ovilines[ovilines$treatment %in% c("C", "I", "S", "O") == F, ]$eggsp)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  ovilines[ovilines$treatment %in% c("C", "I", "S", "O") == F, ]$eggsp
## W = 0.94918, p-value = 1.064e-14
```

Homogeneity test

```
leveneTest(eggsp ~ treatment * variety, data = ovilines[ovilines$treatment %in% c("C",
    "I", "S", "O") == F, ])
```

```
## Levene's Test for Homogeneity of Variance (center = median)
##        Df F value Pr(>F)
## group 117  0.7854 0.9459
##       575
```

Statistics

```
regressionS1 <- glmer(eggsp ~ treatment * variety + (1 | block), family = Gamma(link = "log"),
    data = ovilines[ovilines$treatment %in% c("C", "I", "S", "O") == F, ])


Anova(regressionS1, type = "III", tewtst = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: eggsp
##                      Chisq Df Pr(>Chisq)
## (Intercept)        98.7753  1  < 2.2e-16 ***
## treatment         106.3017 58  0.0001136 ***
## variety             0.4371  1  0.5085336
## treatment:variety  42.5485 58  0.9361209
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
regressionS1.2 <- glmer(eggsp ~ treatment + variety + (1 | block), family = Gamma(link = "log"),
    data = ovilines[ovilines$treatment %in% c("C", "I", "S", "O") == F, ])


Anova(regressionS1.2, type = "III", tewtst = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: eggsp
##                Chisq Df Pr(>Chisq)
## (Intercept) 149.6374  1  < 2.2e-16 ***
## treatment   156.6112 58  5.273e-11 ***
## variety       5.3714  1    0.02047 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
(multcomp_dev_S1 <- emmeans(regressionS1.2, pairwise ~ treatment + variety, adjust = "fdr",
    decreasing = T))
```

```
## $emmeans
##  treatment variety    emmean    SE  df asymp.LCL asymp.UCL
##  1         castlemart   1.62 0.133 Inf     1.364      1.88
##  2         castlemart   1.87 0.134 Inf     1.603      2.13
##  3         castlemart   1.89 0.137 Inf     1.619      2.15
##  4         castlemart   2.01 0.141 Inf     1.729      2.28
##  5         castlemart   2.10 0.137 Inf     1.833      2.37
##  6         castlemart   1.93 0.138 Inf     1.660      2.20
##  7         castlemart   1.94 0.138 Inf     1.668      2.21
##  8         castlemart   1.63 0.141 Inf     1.356      1.91
##  9         castlemart   2.11 0.141 Inf     1.833      2.39
##  10        castlemart   1.92 0.149 Inf     1.634      2.22
##  11        castlemart   2.07 0.138 Inf     1.796      2.34
##  12        castlemart   1.98 0.134 Inf     1.720      2.25
##  13        castlemart   1.90 0.137 Inf     1.634      2.17
##  14        castlemart   2.25 0.137 Inf     1.982      2.52
##  15        castlemart   1.81 0.138 Inf     1.542      2.08
##  16        castlemart   1.77 0.130 Inf     1.513      2.02
```

```
##  17        castlemart   1.87 0.138 Inf     1.596      2.14
##  18        castlemart   1.84 0.142 Inf     1.563      2.12
##  19        castlemart   1.27 0.163 Inf     0.951      1.59
##  20        castlemart   1.79 0.141 Inf     1.513      2.07
##  22        castlemart   2.01 0.137 Inf     1.745      2.28
##  23        castlemart   1.57 0.152 Inf     1.270      1.87
##  24        castlemart   1.93 0.141 Inf     1.652      2.21
##  25        castlemart   1.83 0.142 Inf     1.552      2.11
##  26        castlemart   1.93 0.141 Inf     1.657      2.21
##  27        castlemart   2.05 0.142 Inf     1.769      2.32
##  28        castlemart   1.94 0.141 Inf     1.668      2.22
##  29        castlemart   1.75 0.138 Inf     1.479      2.02
##  30        castlemart   1.78 0.139 Inf     1.503      2.05
##  31        castlemart   2.11 0.130 Inf     1.856      2.37
##  32        castlemart   1.53 0.142 Inf     1.248      1.80
##  33        castlemart   1.61 0.136 Inf     1.341      1.87
##  34        castlemart   2.08 0.135 Inf     1.817      2.35
##  35        castlemart   1.83 0.143 Inf     1.554      2.11
##  36        castlemart   2.09 0.138 Inf     1.819      2.36
##  37        castlemart   1.71 0.147 Inf     1.422      2.00
##  38        castlemart   1.80 0.138 Inf     1.531      2.07
##  39        castlemart   1.85 0.157 Inf     1.542      2.16
##  41        castlemart   1.85 0.138 Inf     1.583      2.12
##  42        castlemart   1.97 0.138 Inf     1.697      2.24
##  43        castlemart   1.74 0.139 Inf     1.464      2.01
##  44        castlemart   2.25 0.141 Inf     1.974      2.53
##  45        castlemart   1.92 0.138 Inf     1.650      2.19
##  46        castlemart   2.06 0.138 Inf     1.785      2.33
##  47        castlemart   1.58 0.137 Inf     1.308      1.85
##  48        castlemart   2.29 0.137 Inf     2.026      2.56
##  49        castlemart   1.99 0.137 Inf     1.725      2.26
##  50        castlemart   1.87 0.139 Inf     1.596      2.14
##  51        castlemart   2.22 0.141 Inf     1.944      2.50
##  52        castlemart   2.07 0.139 Inf     1.795      2.34
##  53        castlemart   1.92 0.137 Inf     1.650      2.19
##  54        castlemart   2.04 0.134 Inf     1.781      2.30
##  55        castlemart   1.91 0.134 Inf     1.647      2.17
##  56        castlemart   1.96 0.144 Inf     1.683      2.25
##  57        castlemart   2.04 0.139 Inf     1.764      2.31
##  58        castlemart   2.09 0.138 Inf     1.821      2.36
##  59        castlemart   1.74 0.145 Inf     1.458      2.02
##  60        castlemart   1.85 0.137 Inf     1.578      2.12
##  61        castlemart   2.11 0.138 Inf     1.840      2.38
##  1         def1         1.69 0.133 Inf     1.431      1.95
##  2         def1         1.93 0.134 Inf     1.671      2.20
##  3         def1         1.95 0.137 Inf     1.686      2.22
##  4         def1         2.07 0.141 Inf     1.797      2.35
##  5         def1         2.17 0.137 Inf     1.900      2.44
##  6         def1         2.00 0.138 Inf     1.727      2.27
##  7         def1         2.00 0.138 Inf     1.734      2.28
##  8         def1         1.70 0.140 Inf     1.424      1.97
##  9         def1         2.18 0.141 Inf     1.900      2.45
##  10        def1         1.99 0.148 Inf     1.701      2.28
##  11        def1         2.13 0.137 Inf     1.863      2.40
##  12        def1         2.05 0.135 Inf     1.785      2.32
##  13        def1         1.97 0.137 Inf     1.700      2.24
```

```
##  14        def1         2.32 0.138 Inf     2.048      2.59
##  15        def1         1.88 0.138 Inf     1.608      2.15
##  16        def1         1.84 0.131 Inf     1.579      2.09
##  17        def1         1.93 0.138 Inf     1.662      2.20
##  18        def1         1.91 0.142 Inf     1.631      2.19
##  19        def1         1.34 0.163 Inf     1.018      1.66
##  20        def1         1.86 0.142 Inf     1.579      2.13
##  22        def1         2.08 0.137 Inf     1.811      2.35
##  23        def1         1.64 0.153 Inf     1.336      1.94
##  24        def1         2.00 0.141 Inf     1.719      2.27
##  25        def1         1.90 0.142 Inf     1.619      2.17
##  26        def1         2.00 0.141 Inf     1.724      2.28
##  27        def1         2.11 0.142 Inf     1.836      2.39
##  28        def1         2.01 0.141 Inf     1.734      2.29
##  29        def1         1.82 0.138 Inf     1.546      2.09
##  30        def1         1.84 0.139 Inf     1.570      2.12
##  31        def1         2.18 0.131 Inf     1.923      2.43
##  32        def1         1.59 0.142 Inf     1.314      1.87
##  33        def1         1.67 0.135 Inf     1.408      1.94
##  34        def1         2.15 0.135 Inf     1.884      2.41
##  35        def1         1.90 0.143 Inf     1.621      2.18
##  36        def1         2.16 0.139 Inf     1.885      2.43
##  37        def1         1.78 0.147 Inf     1.489      2.06
##  38        def1         1.87 0.137 Inf     1.598      2.14
##  39        def1         1.92 0.157 Inf     1.610      2.22
##  41        def1         1.92 0.138 Inf     1.650      2.19
##  42        def1         2.03 0.138 Inf     1.763      2.30
##  43        def1         1.80 0.139 Inf     1.531      2.07
##  44        def1         2.32 0.141 Inf     2.041      2.59
##  45        def1         1.99 0.137 Inf     1.717      2.26
##  46        def1         2.12 0.139 Inf     1.850      2.40
##  47        def1         1.64 0.137 Inf     1.376      1.91
##  48        def1         2.36 0.137 Inf     2.093      2.63
##  49        def1         2.06 0.137 Inf     1.792      2.33
##  50        def1         1.94 0.138 Inf     1.664      2.21
##  51        def1         2.29 0.141 Inf     2.012      2.56
##  52        def1         2.14 0.139 Inf     1.862      2.41
##  53        def1         1.99 0.137 Inf     1.716      2.26
##  54        def1         2.11 0.134 Inf     1.847      2.37
##  55        def1         1.98 0.135 Inf     1.714      2.24
##  56        def1         2.03 0.144 Inf     1.750      2.31
##  57        def1         2.10 0.139 Inf     1.830      2.37
##  58        def1         2.16 0.138 Inf     1.888      2.43
##  59        def1         1.81 0.145 Inf     1.525      2.09
##  60        def1         1.91 0.137 Inf     1.645      2.18
##  61        def1         2.18 0.138 Inf     1.907      2.45
##
## Results are given on the log (not the response) scale.
## Confidence level used: 0.95
##
## $contrasts
##  contrast                       estimate     SE  df z.ratio p.value
##  1 castlemart - 2 castlemart   -2.42e-01 0.1530 Inf  -1.582  0.3449
##  1 castlemart - 3 castlemart   -2.63e-01 0.1565 Inf  -1.680  0.3099
##  1 castlemart - 4 castlemart   -3.82e-01 0.1629 Inf  -2.347  0.1278
##  1 castlemart - 5 castlemart   -4.78e-01 0.1584 Inf  -3.017  0.0372
```

```
##  1 castlemart - 6 castlemart   -3.06e-01 0.1581 Inf  -1.937  0.2245
##  1 castlemart - 7 castlemart   -3.14e-01 0.1595 Inf  -1.966  0.2151
##  1 castlemart - 8 castlemart   -7.11e-03 0.1600 Inf  -0.044  0.9832
##  1 castlemart - 9 castlemart   -4.85e-01 0.1616 Inf  -3.003  0.0382
##  1 castlemart - 10 castlemart  -3.01e-01 0.1690 Inf  -1.778  0.2735
##  1 castlemart - 11 castlemart  -4.42e-01 0.1579 Inf  -2.798  0.0579
##  1 castlemart - 12 castlemart  -3.59e-01 0.1558 Inf  -2.306  0.1286
##  1 castlemart - 13 castlemart  -2.79e-01 0.1595 Inf  -1.746  0.2855
##  1 castlemart - 14 castlemart  -6.27e-01 0.1561 Inf  -4.014  0.0035
##  1 castlemart - 15 castlemart  -1.88e-01 0.1576 Inf  -1.192  0.5039
##  1 castlemart - 16 castlemart  -1.44e-01 0.1530 Inf  -0.941  0.6183
##  1 castlemart - 17 castlemart  -2.41e-01 0.1551 Inf  -1.555  0.3564
##  1 castlemart - 18 castlemart  -2.18e-01 0.1614 Inf  -1.351  0.4366
##  1 castlemart - 19 castlemart   3.54e-01 0.1796 Inf   1.972  0.2136
##  1 castlemart - 20 castlemart  -1.65e-01 0.1610 Inf  -1.027  0.5741
##  1 castlemart - 22 castlemart  -3.89e-01 0.1590 Inf  -2.446  0.1095
##  1 castlemart - 23 castlemart   5.55e-02 0.1746 Inf   0.318  0.8861
##  1 castlemart - 24 castlemart  -3.05e-01 0.1625 Inf  -1.874  0.2412
##  1 castlemart - 25 castlemart  -2.06e-01 0.1628 Inf  -1.263  0.4754
##  1 castlemart - 26 castlemart  -3.09e-01 0.1594 Inf  -1.938  0.2244
##  1 castlemart - 27 castlemart  -4.23e-01 0.1617 Inf  -2.616  0.0812
##  1 castlemart - 28 castlemart  -3.20e-01 0.1612 Inf  -1.984  0.2100
##  1 castlemart - 29 castlemart  -1.25e-01 0.1573 Inf  -0.796  0.6812
##  1 castlemart - 30 castlemart  -1.52e-01 0.1612 Inf  -0.941  0.6183
##  1 castlemart - 31 castlemart  -4.88e-01 0.1528 Inf  -3.190  0.0271
##  1 castlemart - 32 castlemart   9.87e-02 0.1626 Inf   0.607  0.7661
##  1 castlemart - 33 castlemart   1.72e-02 0.1585 Inf   0.108  0.9644
##  1 castlemart - 34 castlemart  -4.58e-01 0.1576 Inf  -2.905  0.0462
##  1 castlemart - 35 castlemart  -2.09e-01 0.1625 Inf  -1.289  0.4636
##  1 castlemart - 36 castlemart  -4.66e-01 0.1596 Inf  -2.919  0.0455
##  1 castlemart - 37 castlemart  -8.55e-02 0.1657 Inf  -0.516  0.8066
##  1 castlemart - 38 castlemart  -1.76e-01 0.1589 Inf  -1.109  0.5391
##  1 castlemart - 39 castlemart  -2.26e-01 0.1744 Inf  -1.294  0.4611
##  1 castlemart - 41 castlemart  -2.29e-01 0.1598 Inf  -1.431  0.3991
##  1 castlemart - 42 castlemart  -3.42e-01 0.1602 Inf  -2.138  0.1674
##  1 castlemart - 43 castlemart  -1.11e-01 0.1579 Inf  -0.704  0.7218
##  1 castlemart - 44 castlemart  -6.27e-01 0.1609 Inf  -3.895  0.0050
##  1 castlemart - 45 castlemart  -2.95e-01 0.1586 Inf  -1.862  0.2449
##  1 castlemart - 46 castlemart  -4.32e-01 0.1580 Inf  -2.734  0.0647
##  1 castlemart - 47 castlemart   4.70e-02 0.1567 Inf   0.300  0.8942
##  1 castlemart - 48 castlemart  -6.71e-01 0.1551 Inf  -4.323  0.0015
##  1 castlemart - 49 castlemart  -3.70e-01 0.1556 Inf  -2.378  0.1218
##  1 castlemart - 50 castlemart  -2.44e-01 0.1606 Inf  -1.519  0.3683
##  1 castlemart - 51 castlemart  -5.97e-01 0.1590 Inf  -3.753  0.0070
##  1 castlemart - 52 castlemart  -4.44e-01 0.1609 Inf  -2.759  0.0622
##  1 castlemart - 53 castlemart  -2.95e-01 0.1583 Inf  -1.862  0.2449
##  1 castlemart - 54 castlemart  -4.19e-01 0.1565 Inf  -2.674  0.0718
##  1 castlemart - 55 castlemart  -2.86e-01 0.1530 Inf  -1.870  0.2426
##  1 castlemart - 56 castlemart  -3.41e-01 0.1656 Inf  -2.058  0.1894
##  1 castlemart - 57 castlemart  -4.11e-01 0.1590 Inf  -2.585  0.0856
##  1 castlemart - 58 castlemart  -4.67e-01 0.1587 Inf  -2.943  0.0432
##  1 castlemart - 59 castlemart  -1.17e-01 0.1653 Inf  -0.707  0.7205
##  1 castlemart - 60 castlemart  -2.23e-01 0.1582 Inf  -1.409  0.4102
##  1 castlemart - 61 castlemart  -4.86e-01 0.1562 Inf  -3.115  0.0310
##  1 castlemart - 1 def1         -6.69e-02 0.0289 Inf  -2.318  0.1278
##  1 castlemart - 2 def1         -3.09e-01 0.1552 Inf  -1.991  0.2082
```

```
##  1 castlemart - 3 def1         -3.30e-01 0.1592 Inf  -2.071  0.1860
##  1 castlemart - 4 def1         -4.49e-01 0.1649 Inf  -2.724  0.0657
##  1 castlemart - 5 def1         -5.45e-01 0.1607 Inf  -3.389  0.0172
##  1 castlemart - 6 def1         -3.73e-01 0.1607 Inf  -2.322  0.1278
##  1 castlemart - 7 def1         -3.81e-01 0.1623 Inf  -2.345  0.1278
##  1 castlemart - 8 def1         -7.40e-02 0.1620 Inf  -0.457  0.8296
##  1 castlemart - 9 def1         -5.52e-01 0.1645 Inf  -3.357  0.0185
##  1 castlemart - 10 def1        -3.67e-01 0.1713 Inf  -2.146  0.1648
##  1 castlemart - 11 def1        -5.09e-01 0.1602 Inf  -3.175  0.0277
##  1 castlemart - 12 def1        -4.26e-01 0.1591 Inf  -2.679  0.0710
##  1 castlemart - 13 def1        -3.45e-01 0.1621 Inf  -2.130  0.1694
##  1 castlemart - 14 def1        -6.94e-01 0.1590 Inf  -4.363  0.0014
##  1 castlemart - 15 def1        -2.55e-01 0.1605 Inf  -1.587  0.3429
##  1 castlemart - 16 def1        -2.11e-01 0.1560 Inf  -1.351  0.4364
##  1 castlemart - 17 def1        -3.08e-01 0.1577 Inf  -1.953  0.2200
##  1 castlemart - 18 def1        -2.85e-01 0.1638 Inf  -1.739  0.2881
##  1 castlemart - 19 def1         2.87e-01 0.1821 Inf   1.578  0.3475
##  1 castlemart - 20 def1        -2.32e-01 0.1641 Inf  -1.415  0.4080
##  1 castlemart - 22 def1        -4.56e-01 0.1619 Inf  -2.816  0.0560
##  1 castlemart - 23 def1        -1.13e-02 0.1776 Inf  -0.064  0.9785
##  1 castlemart - 24 def1        -3.71e-01 0.1652 Inf  -2.249  0.1412
##  1 castlemart - 25 def1        -2.73e-01 0.1656 Inf  -1.646  0.3222
##  1 castlemart - 26 def1        -3.76e-01 0.1621 Inf  -2.320  0.1278
##  1 castlemart - 27 def1        -4.90e-01 0.1642 Inf  -2.982  0.0396
##  1 castlemart - 28 def1        -3.87e-01 0.1640 Inf  -2.358  0.1251
##  1 castlemart - 29 def1        -1.92e-01 0.1597 Inf  -1.203  0.4998
##  1 castlemart - 30 def1        -2.19e-01 0.1638 Inf  -1.335  0.4440
##  1 castlemart - 31 def1        -5.54e-01 0.1557 Inf  -3.561  0.0123
##  1 castlemart - 32 def1         3.18e-02 0.1654 Inf   0.193  0.9352
##  1 castlemart - 33 def1        -4.97e-02 0.1610 Inf  -0.309  0.8898
##  1 castlemart - 34 def1        -5.25e-01 0.1601 Inf  -3.277  0.0225
##  1 castlemart - 35 def1        -2.76e-01 0.1651 Inf  -1.674  0.3115
##  1 castlemart - 36 def1        -5.33e-01 0.1624 Inf  -3.281  0.0225
##  1 castlemart - 37 def1        -1.52e-01 0.1682 Inf  -0.906  0.6322
##  1 castlemart - 38 def1        -2.43e-01 0.1610 Inf  -1.510  0.3717
##  1 castlemart - 39 def1        -2.92e-01 0.1766 Inf  -1.656  0.3185
##  1 castlemart - 41 def1        -2.96e-01 0.1623 Inf  -1.821  0.2595
##  1 castlemart - 42 def1        -4.09e-01 0.1631 Inf  -2.510  0.0981
##  1 castlemart - 43 def1        -1.78e-01 0.1604 Inf  -1.109  0.5391
##  1 castlemart - 44 def1        -6.93e-01 0.1633 Inf  -4.246  0.0019
##  1 castlemart - 45 def1        -3.62e-01 0.1610 Inf  -2.251  0.1411
##  1 castlemart - 46 def1        -4.99e-01 0.1612 Inf  -3.094  0.0321
##  1 castlemart - 47 def1        -1.99e-02 0.1591 Inf  -0.125  0.9596
##  1 castlemart - 48 def1        -7.37e-01 0.1577 Inf  -4.677  0.0007
##  1 castlemart - 49 def1        -4.37e-01 0.1584 Inf  -2.758  0.0622
##  1 castlemart - 50 def1        -3.11e-01 0.1628 Inf  -1.909  0.2309
##  1 castlemart - 51 def1        -6.64e-01 0.1612 Inf  -4.116  0.0026
##  1 castlemart - 52 def1        -5.11e-01 0.1635 Inf  -3.126  0.0302
##  1 castlemart - 53 def1        -3.62e-01 0.1611 Inf  -2.245  0.1416
##  1 castlemart - 54 def1        -4.85e-01 0.1593 Inf  -3.047  0.0346
##  1 castlemart - 55 def1        -3.53e-01 0.1558 Inf  -2.266  0.1376
##  1 castlemart - 56 def1        -4.08e-01 0.1681 Inf  -2.425  0.1132
##  1 castlemart - 57 def1        -4.78e-01 0.1616 Inf  -2.957  0.0419
##  1 castlemart - 58 def1        -5.34e-01 0.1614 Inf  -3.309  0.0209
##  1 castlemart - 59 def1        -1.84e-01 0.1677 Inf  -1.096  0.5448
##  1 castlemart - 60 def1        -2.90e-01 0.1605 Inf  -1.806  0.2636
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##  1 castlemart - 61 def1        -5.53e-01 0.1587 Inf  -3.487  0.0139
##  2 castlemart - 3 castlemart   -2.07e-02 0.1583 Inf  -0.131  0.9576
##  2 castlemart - 4 castlemart   -1.40e-01 0.1625 Inf  -0.862  0.6530
##  2 castlemart - 5 castlemart   -2.36e-01 0.1572 Inf  -1.499  0.3755
##  2 castlemart - 6 castlemart   -6.40e-02 0.1586 Inf  -0.404  0.8524
##  2 castlemart - 7 castlemart   -7.15e-02 0.1610 Inf  -0.444  0.8351
##  2 castlemart - 8 castlemart    2.35e-01 0.1638 Inf   1.434  0.3987
##  2 castlemart - 9 castlemart   -2.43e-01 0.1634 Inf  -1.488  0.3792
##  2 castlemart - 10 castlemart  -5.85e-02 0.1696 Inf  -0.345  0.8775
##  2 castlemart - 11 castlemart  -2.00e-01 0.1609 Inf  -1.240  0.4832
##  2 castlemart - 12 castlemart  -1.17e-01 0.1576 Inf  -0.744  0.7042
##  2 castlemart - 13 castlemart  -3.64e-02 0.1601 Inf  -0.227  0.9234
##  2 castlemart - 14 castlemart  -3.85e-01 0.1578 Inf  -2.438  0.1107
##  2 castlemart - 15 castlemart   5.42e-02 0.1577 Inf   0.344  0.8775
##  2 castlemart - 16 castlemart   9.81e-02 0.1511 Inf   0.649  0.7458
##  2 castlemart - 17 castlemart   9.68e-04 0.1563 Inf   0.006  0.9969
##  2 castlemart - 18 castlemart   2.41e-02 0.1613 Inf   0.150  0.9523
##  2 castlemart - 19 castlemart   5.96e-01 0.1795 Inf   3.321  0.0201
##  2 castlemart - 20 castlemart   7.68e-02 0.1594 Inf   0.482  0.8236
##  2 castlemart - 22 castlemart  -1.47e-01 0.1576 Inf  -0.932  0.6201
##  2 castlemart - 23 castlemart   2.98e-01 0.1749 Inf   1.702  0.3012
##  2 castlemart - 24 castlemart  -6.25e-02 0.1633 Inf  -0.383  0.8615
##  2 castlemart - 25 castlemart   3.65e-02 0.1642 Inf   0.222  0.9261
##  2 castlemart - 26 castlemart  -6.70e-02 0.1622 Inf  -0.413  0.8495
##  2 castlemart - 27 castlemart  -1.81e-01 0.1634 Inf  -1.106  0.5409
##  2 castlemart - 28 castlemart  -7.78e-02 0.1584 Inf  -0.491  0.8204
##  2 castlemart - 29 castlemart   1.17e-01 0.1611 Inf   0.726  0.7138
##  2 castlemart - 30 castlemart   9.05e-02 0.1622 Inf   0.558  0.7894
##  2 castlemart - 31 castlemart  -2.45e-01 0.1536 Inf  -1.598  0.3384
##  2 castlemart - 32 castlemart   3.41e-01 0.1627 Inf   2.095  0.1791
##  2 castlemart - 33 castlemart   2.59e-01 0.1602 Inf   1.618  0.3313
##  2 castlemart - 34 castlemart  -2.16e-01 0.1576 Inf  -1.369  0.4284
##  2 castlemart - 35 castlemart   3.27e-02 0.1643 Inf   0.199  0.9322
##  2 castlemart - 36 castlemart  -2.24e-01 0.1604 Inf  -1.395  0.4159
##  2 castlemart - 37 castlemart   1.57e-01 0.1639 Inf   0.956  0.6105
##  2 castlemart - 38 castlemart   6.60e-02 0.1591 Inf   0.415  0.8495
##  2 castlemart - 39 castlemart   1.65e-02 0.1749 Inf   0.094  0.9701
##  2 castlemart - 41 castlemart   1.34e-02 0.1606 Inf   0.083  0.9741
##  2 castlemart - 42 castlemart  -1.00e-01 0.1612 Inf  -0.622  0.7605
##  2 castlemart - 43 castlemart   1.31e-01 0.1578 Inf   0.830  0.6658
##  2 castlemart - 44 castlemart  -3.84e-01 0.1622 Inf  -2.371  0.1228
##  2 castlemart - 45 castlemart  -5.33e-02 0.1570 Inf  -0.339  0.8797
##  2 castlemart - 46 castlemart  -1.90e-01 0.1623 Inf  -1.169  0.5151
##  2 castlemart - 47 castlemart   2.89e-01 0.1587 Inf   1.822  0.2593
##  2 castlemart - 48 castlemart  -4.28e-01 0.1581 Inf  -2.711  0.0669
##  2 castlemart - 49 castlemart  -1.28e-01 0.1568 Inf  -0.815  0.6730
##  2 castlemart - 50 castlemart  -1.85e-03 0.1605 Inf  -0.012  0.9958
##  2 castlemart - 51 castlemart  -3.55e-01 0.1622 Inf  -2.187  0.1557
##  2 castlemart - 52 castlemart  -2.02e-01 0.1597 Inf  -1.264  0.4751
##  2 castlemart - 53 castlemart  -5.26e-02 0.1585 Inf  -0.332  0.8816
##  2 castlemart - 54 castlemart  -1.76e-01 0.1568 Inf  -1.125  0.5335
##  2 castlemart - 55 castlemart  -4.40e-02 0.1577 Inf  -0.279  0.9021
##  2 castlemart - 56 castlemart  -9.87e-02 0.1649 Inf  -0.598  0.7691
##  2 castlemart - 57 castlemart  -1.69e-01 0.1567 Inf  -1.077  0.5519
##  2 castlemart - 58 castlemart  -2.25e-01 0.1594 Inf  -1.411  0.4094
##  2 castlemart - 59 castlemart   1.25e-01 0.1662 Inf   0.753  0.7001
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##  2 castlemart - 60 castlemart   1.91e-02 0.1574 Inf   0.122  0.9601
##  2 castlemart - 61 castlemart  -2.44e-01 0.1567 Inf  -1.559  0.3542
##  2 castlemart - 1 def1          1.75e-01 0.1563 Inf   1.121  0.5354
##  2 castlemart - 2 def1         -6.69e-02 0.0289 Inf  -2.318  0.1278
##  2 castlemart - 3 def1         -8.76e-02 0.1615 Inf  -0.542  0.7965
##  2 castlemart - 4 def1         -2.07e-01 0.1651 Inf  -1.254  0.4792
##  2 castlemart - 5 def1         -3.03e-01 0.1601 Inf  -1.889  0.2368
##  2 castlemart - 6 def1         -1.31e-01 0.1617 Inf  -0.810  0.6750
##  2 castlemart - 7 def1         -1.38e-01 0.1643 Inf  -0.842  0.6612
##  2 castlemart - 8 def1          1.68e-01 0.1663 Inf   1.011  0.5810
##  2 castlemart - 9 def1         -3.10e-01 0.1668 Inf  -1.859  0.2456
##  2 castlemart - 10 def1        -1.25e-01 0.1723 Inf  -0.728  0.7124
##  2 castlemart - 11 def1        -2.66e-01 0.1637 Inf  -1.628  0.3287
##  2 castlemart - 12 def1        -1.84e-01 0.1614 Inf  -1.140  0.5297
##  2 castlemart - 13 def1        -1.03e-01 0.1632 Inf  -0.633  0.7555
##  2 castlemart - 14 def1        -4.52e-01 0.1612 Inf  -2.802  0.0576
##  2 castlemart - 15 def1        -1.26e-02 0.1611 Inf  -0.078  0.9751
##  2 castlemart - 16 def1         3.12e-02 0.1547 Inf   0.202  0.9314
##  2 castlemart - 17 def1        -6.59e-02 0.1595 Inf  -0.413  0.8495
##  2 castlemart - 18 def1        -4.28e-02 0.1642 Inf  -0.260  0.9089
##  2 castlemart - 19 def1         5.29e-01 0.1825 Inf   2.901  0.0466
##  2 castlemart - 20 def1         9.91e-03 0.1632 Inf   0.061  0.9797
##  2 castlemart - 22 def1        -2.14e-01 0.1610 Inf  -1.328  0.4461
##  2 castlemart - 23 def1         2.31e-01 0.1784 Inf   1.293  0.4612
##  2 castlemart - 24 def1        -1.29e-01 0.1664 Inf  -0.777  0.6894
##  2 castlemart - 25 def1        -3.04e-02 0.1675 Inf  -0.182  0.9383
##  2 castlemart - 26 def1        -1.34e-01 0.1654 Inf  -0.810  0.6751
##  2 castlemart - 27 def1        -2.48e-01 0.1665 Inf  -1.487  0.3795
##  2 castlemart - 28 def1        -1.45e-01 0.1618 Inf  -0.894  0.6367
##  2 castlemart - 29 def1         5.01e-02 0.1641 Inf   0.305  0.8916
##  2 castlemart - 30 def1         2.36e-02 0.1653 Inf   0.143  0.9536
##  2 castlemart - 31 def1        -3.12e-01 0.1570 Inf  -1.989  0.2086
##  2 castlemart - 32 def1         2.74e-01 0.1659 Inf   1.651  0.3205
##  2 castlemart - 33 def1         1.92e-01 0.1633 Inf   1.178  0.5107
##  2 castlemart - 34 def1        -2.83e-01 0.1607 Inf  -1.759  0.2800
##  2 castlemart - 35 def1        -3.42e-02 0.1673 Inf  -0.205  0.9312
##  2 castlemart - 36 def1        -2.91e-01 0.1637 Inf  -1.776  0.2737
##  2 castlemart - 37 def1         8.97e-02 0.1669 Inf   0.538  0.7995
##  2 castlemart - 38 def1        -9.19e-04 0.1618 Inf  -0.006  0.9971
##  2 castlemart - 39 def1        -5.04e-02 0.1777 Inf  -0.283  0.9000
##  2 castlemart - 41 def1        -5.35e-02 0.1636 Inf  -0.327  0.8829
##  2 castlemart - 42 def1        -1.67e-01 0.1646 Inf  -1.016  0.5793
##  2 castlemart - 43 def1         6.41e-02 0.1610 Inf   0.398  0.8541
##  2 castlemart - 44 def1        -4.51e-01 0.1652 Inf  -2.733  0.0647
##  2 castlemart - 45 def1        -1.20e-01 0.1599 Inf  -0.752  0.7006
##  2 castlemart - 46 def1        -2.57e-01 0.1660 Inf  -1.546  0.3593
##  2 castlemart - 47 def1         2.22e-01 0.1616 Inf   1.375  0.4252
##  2 castlemart - 48 def1        -4.95e-01 0.1611 Inf  -3.074  0.0333
##  2 castlemart - 49 def1        -1.95e-01 0.1601 Inf  -1.216  0.4930
##  2 castlemart - 50 def1        -6.87e-02 0.1633 Inf  -0.421  0.8468
##  2 castlemart - 51 def1        -4.22e-01 0.1649 Inf  -2.557  0.0901
##  2 castlemart - 52 def1        -2.69e-01 0.1628 Inf  -1.651  0.3205
##  2 castlemart - 53 def1        -1.20e-01 0.1619 Inf  -0.738  0.7067
##  2 castlemart - 54 def1        -2.43e-01 0.1602 Inf  -1.519  0.3683
##  2 castlemart - 55 def1        -1.11e-01 0.1609 Inf  -0.689  0.7281
##  2 castlemart - 56 def1        -1.66e-01 0.1680 Inf  -0.985  0.5949
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##  2 castlemart - 57 def1        -2.36e-01 0.1599 Inf  -1.474  0.3852
##  2 castlemart - 58 def1        -2.92e-01 0.1626 Inf  -1.795  0.2680
##  2 castlemart - 59 def1         5.83e-02 0.1691 Inf   0.345  0.8775
##  2 castlemart - 60 def1        -4.77e-02 0.1603 Inf  -0.298  0.8950
##  2 castlemart - 61 def1        -3.11e-01 0.1598 Inf  -1.948  0.2217
##  3 castlemart - 4 castlemart   -1.19e-01 0.1655 Inf  -0.722  0.7155
##  3 castlemart - 5 castlemart   -2.15e-01 0.1608 Inf  -1.336  0.4429
##  3 castlemart - 6 castlemart   -4.33e-02 0.1621 Inf  -0.267  0.9066
##  3 castlemart - 7 castlemart   -5.08e-02 0.1624 Inf  -0.313  0.8891
##  3 castlemart - 8 castlemart    2.56e-01 0.1644 Inf   1.555  0.3564
##  3 castlemart - 9 castlemart   -2.22e-01 0.1639 Inf  -1.357  0.4341
##  3 castlemart - 10 castlemart  -3.78e-02 0.1722 Inf  -0.219  0.9267
##  3 castlemart - 11 castlemart  -1.79e-01 0.1613 Inf  -1.109  0.5391
##  3 castlemart - 12 castlemart  -9.65e-02 0.1601 Inf  -0.602  0.7683
##  3 castlemart - 13 castlemart  -1.57e-02 0.1595 Inf  -0.098  0.9684
##  3 castlemart - 14 castlemart  -3.64e-01 0.1624 Inf  -2.241  0.1425
##  3 castlemart - 15 castlemart   7.50e-02 0.1633 Inf   0.459  0.8291
##  3 castlemart - 16 castlemart   1.19e-01 0.1541 Inf   0.771  0.6918
##  3 castlemart - 17 castlemart   2.17e-02 0.1603 Inf   0.135  0.9561
##  3 castlemart - 18 castlemart   4.49e-02 0.1665 Inf   0.270  0.9057
##  3 castlemart - 19 castlemart   6.17e-01 0.1795 Inf   3.438  0.0151
##  3 castlemart - 20 castlemart   9.75e-02 0.1634 Inf   0.597  0.7693
##  3 castlemart - 22 castlemart  -1.26e-01 0.1605 Inf  -0.786  0.6856
##  3 castlemart - 23 castlemart   3.18e-01 0.1753 Inf   1.817  0.2603
##  3 castlemart - 24 castlemart  -4.17e-02 0.1645 Inf  -0.254  0.9117
##  3 castlemart - 25 castlemart   5.72e-02 0.1639 Inf   0.349  0.8757
##  3 castlemart - 26 castlemart  -4.62e-02 0.1615 Inf  -0.286  0.8984
##  3 castlemart - 27 castlemart  -1.60e-01 0.1650 Inf  -0.969  0.6016
##  3 castlemart - 28 castlemart  -5.70e-02 0.1624 Inf  -0.351  0.8750
##  3 castlemart - 29 castlemart   1.38e-01 0.1623 Inf   0.848  0.6578
##  3 castlemart - 30 castlemart   1.11e-01 0.1634 Inf   0.680  0.7324
##  3 castlemart - 31 castlemart  -2.25e-01 0.1569 Inf  -1.432  0.3991
##  3 castlemart - 32 castlemart   3.62e-01 0.1652 Inf   2.189  0.1553
##  3 castlemart - 33 castlemart   2.80e-01 0.1602 Inf   1.748  0.2848
##  3 castlemart - 34 castlemart  -1.95e-01 0.1584 Inf  -1.230  0.4878
##  3 castlemart - 35 castlemart   5.34e-02 0.1655 Inf   0.323  0.8848
##  3 castlemart - 36 castlemart  -2.03e-01 0.1637 Inf  -1.241  0.4832
##  3 castlemart - 37 castlemart   1.77e-01 0.1691 Inf   1.049  0.5647
##  3 castlemart - 38 castlemart   8.67e-02 0.1613 Inf   0.538  0.7995
##  3 castlemart - 39 castlemart   3.73e-02 0.1790 Inf   0.208  0.9301
##  3 castlemart - 41 castlemart   3.41e-02 0.1602 Inf   0.213  0.9288
##  3 castlemart - 42 castlemart  -7.96e-02 0.1599 Inf  -0.497  0.8159
##  3 castlemart - 43 castlemart   1.52e-01 0.1622 Inf   0.936  0.6201
##  3 castlemart - 44 castlemart  -3.64e-01 0.1655 Inf  -2.198  0.1540
##  3 castlemart - 45 castlemart  -3.25e-02 0.1617 Inf  -0.201  0.9314
##  3 castlemart - 46 castlemart  -1.69e-01 0.1633 Inf  -1.035  0.5718
##  3 castlemart - 47 castlemart   3.10e-01 0.1614 Inf   1.920  0.2279
##  3 castlemart - 48 castlemart  -4.08e-01 0.1594 Inf  -2.558  0.0901
##  3 castlemart - 49 castlemart  -1.07e-01 0.1606 Inf  -0.667  0.7388
##  3 castlemart - 50 castlemart   1.89e-02 0.1589 Inf   0.119  0.9609
##  3 castlemart - 51 castlemart  -3.34e-01 0.1630 Inf  -2.049  0.1921
##  3 castlemart - 52 castlemart  -1.81e-01 0.1644 Inf  -1.102  0.5420
##  3 castlemart - 53 castlemart  -3.19e-02 0.1624 Inf  -0.196  0.9332
##  3 castlemart - 54 castlemart  -1.56e-01 0.1564 Inf  -0.995  0.5899
##  3 castlemart - 55 castlemart  -2.33e-02 0.1576 Inf  -0.148  0.9526
##  3 castlemart - 56 castlemart  -7.79e-02 0.1657 Inf  -0.470  0.8276
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##  3 castlemart - 57 castlemart  -1.48e-01 0.1618 Inf  -0.915  0.6274
##  3 castlemart - 58 castlemart  -2.04e-01 0.1630 Inf  -1.253  0.4794
##  3 castlemart - 59 castlemart   1.46e-01 0.1679 Inf   0.869  0.6505
##  3 castlemart - 60 castlemart   3.99e-02 0.1606 Inf   0.248  0.9136
##  3 castlemart - 61 castlemart  -2.24e-01 0.1614 Inf  -1.385  0.4214
##  3 castlemart - 1 def1          1.96e-01 0.1590 Inf   1.232  0.4873
##  3 castlemart - 2 def1         -4.61e-02 0.1603 Inf  -0.288  0.8984
##  3 castlemart - 3 def1         -6.69e-02 0.0289 Inf  -2.318  0.1278
##  3 castlemart - 4 def1         -1.86e-01 0.1674 Inf  -1.113  0.5386
##  3 castlemart - 5 def1         -2.82e-01 0.1631 Inf  -1.728  0.2913
##  3 castlemart - 6 def1         -1.10e-01 0.1646 Inf  -0.670  0.7376
##  3 castlemart - 7 def1         -1.18e-01 0.1650 Inf  -0.713  0.7193
##  3 castlemart - 8 def1          1.89e-01 0.1663 Inf   1.136  0.5309
##  3 castlemart - 9 def1         -2.89e-01 0.1666 Inf  -1.736  0.2896
##  3 castlemart - 10 def1        -1.05e-01 0.1743 Inf  -0.600  0.7691
##  3 castlemart - 11 def1        -2.46e-01 0.1634 Inf  -1.504  0.3738
##  3 castlemart - 12 def1        -1.63e-01 0.1632 Inf  -1.001  0.5878
##  3 castlemart - 13 def1        -8.26e-02 0.1620 Inf  -0.510  0.8086
##  3 castlemart - 14 def1        -4.31e-01 0.1651 Inf  -2.610  0.0819
##  3 castlemart - 15 def1         8.10e-03 0.1660 Inf   0.049  0.9821
##  3 castlemart - 16 def1         5.20e-02 0.1571 Inf   0.331  0.8818
##  3 castlemart - 17 def1        -4.52e-02 0.1628 Inf  -0.278  0.9034
##  3 castlemart - 18 def1        -2.20e-02 0.1687 Inf  -0.131  0.9579
##  3 castlemart - 19 def1         5.50e-01 0.1818 Inf   3.025  0.0366
##  3 castlemart - 20 def1         3.07e-02 0.1664 Inf   0.184  0.9373
##  3 castlemart - 22 def1        -1.93e-01 0.1632 Inf  -1.182  0.5091
##  3 castlemart - 23 def1         2.51e-01 0.1782 Inf   1.411  0.4094
##  3 castlemart - 24 def1        -1.09e-01 0.1671 Inf  -0.650  0.7458
##  3 castlemart - 25 def1        -9.66e-03 0.1666 Inf  -0.058  0.9801
##  3 castlemart - 26 def1        -1.13e-01 0.1640 Inf  -0.690  0.7279
##  3 castlemart - 27 def1        -2.27e-01 0.1675 Inf  -1.355  0.4351
##  3 castlemart - 28 def1        -1.24e-01 0.1651 Inf  -0.750  0.7006
##  3 castlemart - 29 def1         7.08e-02 0.1646 Inf   0.430  0.8431
##  3 castlemart - 30 def1         4.43e-02 0.1659 Inf   0.267  0.9066
##  3 castlemart - 31 def1        -2.92e-01 0.1596 Inf  -1.827  0.2575
##  3 castlemart - 32 def1         2.95e-01 0.1678 Inf   1.757  0.2811
##  3 castlemart - 33 def1         2.13e-01 0.1626 Inf   1.311  0.4524
##  3 castlemart - 34 def1        -2.62e-01 0.1609 Inf  -1.628  0.3287
##  3 castlemart - 35 def1        -1.35e-02 0.1679 Inf  -0.080  0.9746
##  3 castlemart - 36 def1        -2.70e-01 0.1663 Inf  -1.623  0.3305
##  3 castlemart - 37 def1         1.10e-01 0.1714 Inf   0.644  0.7491
##  3 castlemart - 38 def1         1.98e-02 0.1633 Inf   0.121  0.9601
##  3 castlemart - 39 def1        -2.96e-02 0.1812 Inf  -0.164  0.9468
##  3 castlemart - 41 def1        -3.28e-02 0.1626 Inf  -0.201  0.9314
##  3 castlemart - 42 def1        -1.46e-01 0.1628 Inf  -0.900  0.6345
##  3 castlemart - 43 def1         8.49e-02 0.1646 Inf   0.516  0.8066
##  3 castlemart - 44 def1        -4.31e-01 0.1678 Inf  -2.566  0.0888
##  3 castlemart - 45 def1        -9.94e-02 0.1639 Inf  -0.607  0.7661
##  3 castlemart - 46 def1        -2.36e-01 0.1663 Inf  -1.418  0.4066
##  3 castlemart - 47 def1         2.43e-01 0.1637 Inf   1.485  0.3806
##  3 castlemart - 48 def1        -4.75e-01 0.1618 Inf  -2.933  0.0443
##  3 castlemart - 49 def1        -1.74e-01 0.1632 Inf  -1.066  0.5566
##  3 castlemart - 50 def1        -4.80e-02 0.1611 Inf  -0.298  0.8950
##  3 castlemart - 51 def1        -4.01e-01 0.1651 Inf  -2.428  0.1126
##  3 castlemart - 52 def1        -2.48e-01 0.1668 Inf  -1.487  0.3795
##  3 castlemart - 53 def1        -9.88e-02 0.1651 Inf  -0.598  0.7691
```

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##  3 castlemart - 54 def1        -2.23e-01 0.1591 Inf  -1.399  0.4147
##  3 castlemart - 55 def1        -9.02e-02 0.1602 Inf  -0.563  0.7867
##  3 castlemart - 56 def1        -1.45e-01 0.1682 Inf  -0.861  0.6530
##  3 castlemart - 57 def1        -2.15e-01 0.1642 Inf  -1.309  0.4536
##  3 castlemart - 58 def1        -2.71e-01 0.1655 Inf  -1.638  0.3257
##  3 castlemart - 59 def1         7.90e-02 0.1701 Inf   0.464  0.8282
##  3 castlemart - 60 def1        -2.70e-02 0.1629 Inf  -0.166  0.9451
##  3 castlemart - 61 def1        -2.90e-01 0.1638 Inf  -1.774  0.2745
##  4 castlemart - 5 castlemart   -9.55e-02 0.1637 Inf  -0.583  0.7748
##  4 castlemart - 6 castlemart    7.61e-02 0.1664 Inf   0.457  0.8295
##  4 castlemart - 7 castlemart    6.87e-02 0.1672 Inf   0.411  0.8501
##  4 castlemart - 8 castlemart    3.75e-01 0.1671 Inf   2.245  0.1416
##  4 castlemart - 9 castlemart   -1.03e-01 0.1670 Inf  -0.617  0.7625
##  4 castlemart - 10 castlemart   8.17e-02 0.1737 Inf   0.470  0.8276
##  4 castlemart - 11 castlemart  -5.94e-02 0.1649 Inf  -0.360  0.8724
##  4 castlemart - 12 castlemart   2.30e-02 0.1608 Inf   0.143  0.9536
##  4 castlemart - 13 castlemart   1.04e-01 0.1633 Inf   0.636  0.7540
##  4 castlemart - 14 castlemart  -2.45e-01 0.1648 Inf  -1.484  0.3806
##  4 castlemart - 15 castlemart   1.94e-01 0.1671 Inf   1.164  0.5168
##  4 castlemart - 16 castlemart   2.38e-01 0.1597 Inf   1.492  0.3785
##  4 castlemart - 17 castlemart   1.41e-01 0.1655 Inf   0.853  0.6569
##  4 castlemart - 18 castlemart   1.64e-01 0.1679 Inf   0.978  0.5974
##  4 castlemart - 19 castlemart   7.36e-01 0.1857 Inf   3.965  0.0041
##  4 castlemart - 20 castlemart   2.17e-01 0.1692 Inf   1.283  0.4667
##  4 castlemart - 22 castlemart  -6.68e-03 0.1650 Inf  -0.040  0.9851
##  4 castlemart - 23 castlemart   4.38e-01 0.1807 Inf   2.423  0.1135
##  4 castlemart - 24 castlemart   7.77e-02 0.1677 Inf   0.463  0.8288
##  4 castlemart - 25 castlemart   1.77e-01 0.1657 Inf   1.066  0.5566
##  4 castlemart - 26 castlemart   7.32e-02 0.1701 Inf   0.430  0.8431
##  4 castlemart - 27 castlemart  -4.05e-02 0.1686 Inf  -0.240  0.9165
##  4 castlemart - 28 castlemart   6.24e-02 0.1695 Inf   0.368  0.8693
##  4 castlemart - 29 castlemart   2.57e-01 0.1674 Inf   1.536  0.3631
##  4 castlemart - 30 castlemart   2.31e-01 0.1651 Inf   1.397  0.4153
##  4 castlemart - 31 castlemart  -1.05e-01 0.1584 Inf  -0.665  0.7396
##  4 castlemart - 32 castlemart   4.81e-01 0.1646 Inf   2.923  0.0453
##  4 castlemart - 33 castlemart   3.99e-01 0.1651 Inf   2.420  0.1141
##  4 castlemart - 34 castlemart  -7.55e-02 0.1621 Inf  -0.466  0.8277
##  4 castlemart - 35 castlemart   1.73e-01 0.1702 Inf   1.015  0.5793
##  4 castlemart - 36 castlemart  -8.36e-02 0.1676 Inf  -0.499  0.8151
##  4 castlemart - 37 castlemart   2.97e-01 0.1714 Inf   1.731  0.2908
##  4 castlemart - 38 castlemart   2.06e-01 0.1643 Inf   1.255  0.4792
##  4 castlemart - 39 castlemart   1.57e-01 0.1822 Inf   0.860  0.6538
##  4 castlemart - 41 castlemart   1.54e-01 0.1642 Inf   0.935  0.6201
##  4 castlemart - 42 castlemart   3.99e-02 0.1620 Inf   0.246  0.9146
##  4 castlemart - 43 castlemart   2.71e-01 0.1672 Inf   1.622  0.3307
##  4 castlemart - 44 castlemart  -2.44e-01 0.1696 Inf  -1.440  0.3964
##  4 castlemart - 45 castlemart   8.69e-02 0.1641 Inf   0.529  0.8013
##  4 castlemart - 46 castlemart  -4.96e-02 0.1680 Inf  -0.295  0.8960
##  4 castlemart - 47 castlemart   4.29e-01 0.1637 Inf   2.622  0.0804
##  4 castlemart - 48 castlemart  -2.88e-01 0.1667 Inf  -1.730  0.2908
##  4 castlemart - 49 castlemart   1.24e-02 0.1663 Inf   0.074  0.9766
##  4 castlemart - 50 castlemart   1.38e-01 0.1675 Inf   0.826  0.6680
##  4 castlemart - 51 castlemart  -2.15e-01 0.1683 Inf  -1.275  0.4697
##  4 castlemart - 52 castlemart  -6.18e-02 0.1676 Inf  -0.369  0.8693
##  4 castlemart - 53 castlemart   8.75e-02 0.1653 Inf   0.530  0.8013
##  4 castlemart - 54 castlemart  -3.62e-02 0.1616 Inf  -0.224  0.9252
```

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##  4 castlemart - 55 castlemart   9.62e-02 0.1634 Inf   0.589  0.7728
##  4 castlemart - 56 castlemart   4.15e-02 0.1681 Inf   0.247  0.9145
##  4 castlemart - 57 castlemart  -2.86e-02 0.1663 Inf  -0.172  0.9420
##  4 castlemart - 58 castlemart  -8.48e-02 0.1647 Inf  -0.515  0.8066
##  4 castlemart - 59 castlemart   2.65e-01 0.1726 Inf   1.538  0.3623
##  4 castlemart - 60 castlemart   1.59e-01 0.1643 Inf   0.970  0.6016
##  4 castlemart - 61 castlemart  -1.04e-01 0.1647 Inf  -0.632  0.7555
##  4 castlemart - 1 def1          3.15e-01 0.1659 Inf   1.901  0.2335
##  4 castlemart - 2 def1          7.33e-02 0.1651 Inf   0.444  0.8351
##  4 castlemart - 3 def1          5.25e-02 0.1686 Inf   0.312  0.8894
##  4 castlemart - 4 def1         -6.69e-02 0.0289 Inf  -2.318  0.1278
##  4 castlemart - 5 def1         -1.62e-01 0.1665 Inf  -0.975  0.5990
##  4 castlemart - 6 def1          9.24e-03 0.1694 Inf   0.055  0.9814
##  4 castlemart - 7 def1          1.78e-03 0.1704 Inf   0.010  0.9961
##  4 castlemart - 8 def1          3.08e-01 0.1695 Inf   1.819  0.2599
##  4 castlemart - 9 def1         -1.70e-01 0.1703 Inf  -0.997  0.5895
##  4 castlemart - 10 def1         1.48e-02 0.1764 Inf   0.084  0.9741
##  4 castlemart - 11 def1        -1.26e-01 0.1676 Inf  -0.754  0.7001
##  4 castlemart - 12 def1        -4.39e-02 0.1645 Inf  -0.267  0.9067
##  4 castlemart - 13 def1         3.69e-02 0.1663 Inf   0.222  0.9261
##  4 castlemart - 14 def1        -3.11e-01 0.1680 Inf  -1.854  0.2472
##  4 castlemart - 15 def1         1.28e-01 0.1703 Inf   0.749  0.7017
##  4 castlemart - 16 def1         1.71e-01 0.1632 Inf   1.050  0.5642
##  4 castlemart - 17 def1         7.43e-02 0.1685 Inf   0.441  0.8372
##  4 castlemart - 18 def1         9.74e-02 0.1707 Inf   0.571  0.7829
##  4 castlemart - 19 def1         6.70e-01 0.1885 Inf   3.551  0.0123
##  4 castlemart - 20 def1         1.50e-01 0.1727 Inf   0.869  0.6505
##  4 castlemart - 22 def1        -7.36e-02 0.1683 Inf  -0.437  0.8387
##  4 castlemart - 23 def1         3.71e-01 0.1841 Inf   2.015  0.2015
##  4 castlemart - 24 def1         1.08e-02 0.1708 Inf   0.063  0.9789
##  4 castlemart - 25 def1         1.10e-01 0.1689 Inf   0.650  0.7458
##  4 castlemart - 26 def1         6.31e-03 0.1730 Inf   0.036  0.9871
##  4 castlemart - 27 def1        -1.07e-01 0.1716 Inf  -0.626  0.7590
##  4 castlemart - 28 def1        -4.50e-03 0.1727 Inf  -0.026  0.9904
##  4 castlemart - 29 def1         1.90e-01 0.1702 Inf   1.118  0.5360
##  4 castlemart - 30 def1         1.64e-01 0.1682 Inf   0.974  0.5999
##  4 castlemart - 31 def1        -1.72e-01 0.1616 Inf  -1.065  0.5567
##  4 castlemart - 32 def1         4.14e-01 0.1678 Inf   2.469  0.1050
##  4 castlemart - 33 def1         3.33e-01 0.1680 Inf   1.979  0.2107
##  4 castlemart - 34 def1        -1.42e-01 0.1651 Inf  -0.863  0.6530
##  4 castlemart - 35 def1         1.06e-01 0.1731 Inf   0.612  0.7643
##  4 castlemart - 36 def1        -1.51e-01 0.1708 Inf  -0.881  0.6447
##  4 castlemart - 37 def1         2.30e-01 0.1743 Inf   1.319  0.4498
##  4 castlemart - 38 def1         1.39e-01 0.1669 Inf   0.834  0.6644
##  4 castlemart - 39 def1         8.98e-02 0.1848 Inf   0.486  0.8228
##  4 castlemart - 41 def1         8.67e-02 0.1671 Inf   0.519  0.8066
##  4 castlemart - 42 def1        -2.70e-02 0.1654 Inf  -0.163  0.9468
##  4 castlemart - 43 def1         2.04e-01 0.1702 Inf   1.201  0.5012
##  4 castlemart - 44 def1        -3.11e-01 0.1725 Inf  -1.805  0.2640
##  4 castlemart - 45 def1         2.00e-02 0.1669 Inf   0.120  0.9609
##  4 castlemart - 46 def1        -1.16e-01 0.1715 Inf  -0.679  0.7326
##  4 castlemart - 47 def1         3.62e-01 0.1666 Inf   2.175  0.1585
##  4 castlemart - 48 def1        -3.55e-01 0.1696 Inf  -2.094  0.1792
##  4 castlemart - 49 def1        -5.45e-02 0.1695 Inf  -0.322  0.8852
##  4 castlemart - 50 def1         7.14e-02 0.1702 Inf   0.420  0.8476
##  4 castlemart - 51 def1        -2.81e-01 0.1709 Inf  -1.647  0.3220
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##  4 castlemart - 52 def1        -1.29e-01 0.1705 Inf  -0.754  0.6998
##  4 castlemart - 53 def1         2.06e-02 0.1685 Inf   0.122  0.9601
##  4 castlemart - 54 def1        -1.03e-01 0.1648 Inf  -0.626  0.7592
##  4 castlemart - 55 def1         2.93e-02 0.1665 Inf   0.176  0.9405
##  4 castlemart - 56 def1        -2.54e-02 0.1711 Inf  -0.148  0.9526
##  4 castlemart - 57 def1        -9.55e-02 0.1693 Inf  -0.564  0.7862
##  4 castlemart - 58 def1        -1.52e-01 0.1678 Inf  -0.904  0.6327
##  4 castlemart - 59 def1         1.98e-01 0.1754 Inf   1.132  0.5319
##  4 castlemart - 60 def1         9.24e-02 0.1671 Inf   0.553  0.7901
##  4 castlemart - 61 def1        -1.71e-01 0.1676 Inf  -1.020  0.5769
##  5 castlemart - 6 castlemart    1.72e-01 0.1619 Inf   1.060  0.5591
##  5 castlemart - 7 castlemart    1.64e-01 0.1592 Inf   1.031  0.5734
##  5 castlemart - 8 castlemart    4.71e-01 0.1665 Inf   2.826  0.0551
##  5 castlemart - 9 castlemart   -7.48e-03 0.1662 Inf  -0.045  0.9832
##  5 castlemart - 10 castlemart   1.77e-01 0.1725 Inf   1.027  0.5741
##  5 castlemart - 11 castlemart   3.61e-02 0.1635 Inf   0.221  0.9263
##  5 castlemart - 12 castlemart   1.18e-01 0.1610 Inf   0.736  0.7075
##  5 castlemart - 13 castlemart   1.99e-01 0.1604 Inf   1.242  0.4832
##  5 castlemart - 14 castlemart  -1.49e-01 0.1614 Inf  -0.923  0.6229
##  5 castlemart - 15 castlemart   2.90e-01 0.1616 Inf   1.794  0.2680
##  5 castlemart - 16 castlemart   3.34e-01 0.1556 Inf   2.146  0.1648
##  5 castlemart - 17 castlemart   2.37e-01 0.1623 Inf   1.458  0.3923
##  5 castlemart - 18 castlemart   2.60e-01 0.1654 Inf   1.571  0.3508
##  5 castlemart - 19 castlemart   8.32e-01 0.1846 Inf   4.506  0.0010
##  5 castlemart - 20 castlemart   3.12e-01 0.1664 Inf   1.878  0.2399
##  5 castlemart - 22 castlemart   8.88e-02 0.1615 Inf   0.550  0.7918
##  5 castlemart - 23 castlemart   5.33e-01 0.1743 Inf   3.060  0.0340
##  5 castlemart - 24 castlemart   1.73e-01 0.1626 Inf   1.065  0.5566
##  5 castlemart - 25 castlemart   2.72e-01 0.1639 Inf   1.660  0.3172
##  5 castlemart - 26 castlemart   1.69e-01 0.1664 Inf   1.014  0.5801
##  5 castlemart - 27 castlemart   5.50e-02 0.1626 Inf   0.338  0.8797
##  5 castlemart - 28 castlemart   1.58e-01 0.1637 Inf   0.964  0.6047
##  5 castlemart - 29 castlemart   3.53e-01 0.1631 Inf   2.163  0.1607
##  5 castlemart - 30 castlemart   3.26e-01 0.1647 Inf   1.980  0.2106
##  5 castlemart - 31 castlemart  -9.76e-03 0.1558 Inf  -0.063  0.9790
##  5 castlemart - 32 castlemart   5.77e-01 0.1652 Inf   3.491  0.0137
##  5 castlemart - 33 castlemart   4.95e-01 0.1623 Inf   3.050  0.0344
##  5 castlemart - 34 castlemart   2.00e-02 0.1614 Inf   0.124  0.9596
##  5 castlemart - 35 castlemart   2.68e-01 0.1682 Inf   1.595  0.3400
##  5 castlemart - 36 castlemart   1.19e-02 0.1617 Inf   0.073  0.9766
##  5 castlemart - 37 castlemart   3.92e-01 0.1680 Inf   2.335  0.1278
##  5 castlemart - 38 castlemart   3.02e-01 0.1603 Inf   1.882  0.2384
##  5 castlemart - 39 castlemart   2.52e-01 0.1794 Inf   1.405  0.4114
##  5 castlemart - 41 castlemart   2.49e-01 0.1623 Inf   1.535  0.3632
##  5 castlemart - 42 castlemart   1.35e-01 0.1608 Inf   0.842  0.6612
##  5 castlemart - 43 castlemart   3.67e-01 0.1640 Inf   2.236  0.1437
##  5 castlemart - 44 castlemart  -1.49e-01 0.1661 Inf  -0.896  0.6357
##  5 castlemart - 45 castlemart   1.82e-01 0.1614 Inf   1.130  0.5320
##  5 castlemart - 46 castlemart   4.59e-02 0.1663 Inf   0.276  0.9037
##  5 castlemart - 47 castlemart   5.25e-01 0.1617 Inf   3.246  0.0243
##  5 castlemart - 48 castlemart  -1.93e-01 0.1636 Inf  -1.179  0.5106
##  5 castlemart - 49 castlemart   1.08e-01 0.1588 Inf   0.679  0.7326
##  5 castlemart - 50 castlemart   2.34e-01 0.1629 Inf   1.436  0.3981
##  5 castlemart - 51 castlemart  -1.19e-01 0.1666 Inf  -0.715  0.7189
##  5 castlemart - 52 castlemart   3.37e-02 0.1617 Inf   0.209  0.9301
##  5 castlemart - 53 castlemart   1.83e-01 0.1617 Inf   1.132  0.5317
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##  5 castlemart - 54 castlemart   5.93e-02 0.1579 Inf   0.375  0.8652
##  5 castlemart - 55 castlemart   1.92e-01 0.1600 Inf   1.198  0.5015
##  5 castlemart - 56 castlemart   1.37e-01 0.1667 Inf   0.822  0.6698
##  5 castlemart - 57 castlemart   6.69e-02 0.1619 Inf   0.413  0.8495
##  5 castlemart - 58 castlemart   1.07e-02 0.1608 Inf   0.067  0.9784
##  5 castlemart - 59 castlemart   3.61e-01 0.1695 Inf   2.129  0.1695
##  5 castlemart - 60 castlemart   2.55e-01 0.1573 Inf   1.620  0.3308
##  5 castlemart - 61 castlemart  -8.67e-03 0.1626 Inf  -0.053  0.9814
##  5 castlemart - 1 def1          4.11e-01 0.1612 Inf   2.549  0.0914
##  5 castlemart - 2 def1          1.69e-01 0.1595 Inf   1.058  0.5601
##  5 castlemart - 3 def1          1.48e-01 0.1637 Inf   0.904  0.6327
##  5 castlemart - 4 def1          2.86e-02 0.1659 Inf   0.172  0.9420
##  5 castlemart - 5 def1         -6.69e-02 0.0289 Inf  -2.318  0.1278
##  5 castlemart - 6 def1          1.05e-01 0.1647 Inf   0.636  0.7540
##  5 castlemart - 7 def1          9.73e-02 0.1622 Inf   0.600  0.7691
##  5 castlemart - 8 def1          4.04e-01 0.1687 Inf   2.394  0.1188
##  5 castlemart - 9 def1         -7.44e-02 0.1692 Inf  -0.440  0.8373
##  5 castlemart - 10 def1         1.10e-01 0.1749 Inf   0.631  0.7567
##  5 castlemart - 11 def1        -3.08e-02 0.1659 Inf  -0.186  0.9373
##  5 castlemart - 12 def1         5.16e-02 0.1645 Inf   0.314  0.8888
##  5 castlemart - 13 def1         1.32e-01 0.1633 Inf   0.811  0.6746
##  5 castlemart - 14 def1        -2.16e-01 0.1644 Inf  -1.313  0.4519
##  5 castlemart - 15 def1         2.23e-01 0.1646 Inf   1.355  0.4351
##  5 castlemart - 16 def1         2.67e-01 0.1588 Inf   1.681  0.3099
##  5 castlemart - 17 def1         1.70e-01 0.1650 Inf   1.029  0.5739
##  5 castlemart - 18 def1         1.93e-01 0.1680 Inf   1.149  0.5244
##  5 castlemart - 19 def1         7.65e-01 0.1872 Inf   4.086  0.0028
##  5 castlemart - 20 def1         2.46e-01 0.1697 Inf   1.447  0.3937
##  5 castlemart - 22 def1         2.19e-02 0.1646 Inf   0.133  0.9565
##  5 castlemart - 23 def1         4.66e-01 0.1775 Inf   2.627  0.0796
##  5 castlemart - 24 def1         1.06e-01 0.1654 Inf   0.643  0.7504
##  5 castlemart - 25 def1         2.05e-01 0.1669 Inf   1.230  0.4880
##  5 castlemart - 26 def1         1.02e-01 0.1692 Inf   0.602  0.7685
##  5 castlemart - 27 def1        -1.19e-02 0.1653 Inf  -0.072  0.9766
##  5 castlemart - 28 def1         9.10e-02 0.1667 Inf   0.546  0.7951
##  5 castlemart - 29 def1         2.86e-01 0.1656 Inf   1.725  0.2919
##  5 castlemart - 30 def1         2.59e-01 0.1674 Inf   1.548  0.3583
##  5 castlemart - 31 def1        -7.66e-02 0.1589 Inf  -0.483  0.8236
##  5 castlemart - 32 def1         5.10e-01 0.1681 Inf   3.032  0.0359
##  5 castlemart - 33 def1         4.28e-01 0.1650 Inf   2.595  0.0841
##  5 castlemart - 34 def1        -4.69e-02 0.1641 Inf  -0.286  0.8984
##  5 castlemart - 35 def1         2.01e-01 0.1709 Inf   1.179  0.5106
##  5 castlemart - 36 def1        -5.50e-02 0.1647 Inf  -0.334  0.8816
##  5 castlemart - 37 def1         3.25e-01 0.1706 Inf   1.907  0.2318
##  5 castlemart - 38 def1         2.35e-01 0.1627 Inf   1.443  0.3961
##  5 castlemart - 39 def1         1.85e-01 0.1818 Inf   1.019  0.5778
##  5 castlemart - 41 def1         1.82e-01 0.1650 Inf   1.104  0.5413
##  5 castlemart - 42 def1         6.85e-02 0.1640 Inf   0.418  0.8486
##  5 castlemart - 43 def1         3.00e-01 0.1667 Inf   1.798  0.2665
##  5 castlemart - 44 def1        -2.16e-01 0.1687 Inf  -1.279  0.4684
##  5 castlemart - 45 def1         1.16e-01 0.1639 Inf   0.705  0.7215
##  5 castlemart - 46 def1        -2.10e-02 0.1696 Inf  -0.124  0.9596
##  5 castlemart - 47 def1         4.58e-01 0.1643 Inf   2.788  0.0593
##  5 castlemart - 48 def1        -2.60e-01 0.1662 Inf  -1.562  0.3537
##  5 castlemart - 49 def1         4.10e-02 0.1618 Inf   0.253  0.9117
##  5 castlemart - 50 def1         1.67e-01 0.1653 Inf   1.010  0.5815
```

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##  5 castlemart - 51 def1        -1.86e-01 0.1689 Inf  -1.101  0.5430
##  5 castlemart - 52 def1        -3.31e-02 0.1645 Inf  -0.201  0.9314
##  5 castlemart - 53 def1         1.16e-01 0.1647 Inf   0.705  0.7214
##  5 castlemart - 54 def1        -7.63e-03 0.1609 Inf  -0.047  0.9822
##  5 castlemart - 55 def1         1.25e-01 0.1629 Inf   0.766  0.6952
##  5 castlemart - 56 def1         7.01e-02 0.1694 Inf   0.414  0.8495
##  5 castlemart - 57 def1        -4.90e-06 0.1647 Inf   0.000  1.0000
##  5 castlemart - 58 def1        -5.62e-02 0.1637 Inf  -0.343  0.8775
##  5 castlemart - 59 def1         2.94e-01 0.1720 Inf   1.709  0.2982
##  5 castlemart - 60 def1         1.88e-01 0.1599 Inf   1.175  0.5122
##  5 castlemart - 61 def1        -7.56e-02 0.1652 Inf  -0.457  0.8295
##  6 castlemart - 7 castlemart   -7.46e-03 0.1628 Inf  -0.046  0.9831
##  6 castlemart - 8 castlemart    2.99e-01 0.1674 Inf   1.787  0.2711
##  6 castlemart - 9 castlemart   -1.79e-01 0.1642 Inf  -1.091  0.5457
##  6 castlemart - 10 castlemart   5.56e-03 0.1677 Inf   0.033  0.9879
##  6 castlemart - 11 castlemart  -1.36e-01 0.1629 Inf  -0.832  0.6657
##  6 castlemart - 12 castlemart  -5.31e-02 0.1606 Inf  -0.331  0.8818
##  6 castlemart - 13 castlemart   2.76e-02 0.1619 Inf   0.171  0.9429
##  6 castlemart - 14 castlemart  -3.21e-01 0.1595 Inf  -2.011  0.2022
##  6 castlemart - 15 castlemart   1.18e-01 0.1611 Inf   0.734  0.7083
##  6 castlemart - 16 castlemart   1.62e-01 0.1576 Inf   1.029  0.5737
##  6 castlemart - 17 castlemart   6.50e-02 0.1590 Inf   0.409  0.8504
##  6 castlemart - 18 castlemart   8.82e-02 0.1660 Inf   0.531  0.8013
##  6 castlemart - 19 castlemart   6.60e-01 0.1857 Inf   3.556  0.0123
##  6 castlemart - 20 castlemart   1.41e-01 0.1648 Inf   0.855  0.6560
##  6 castlemart - 22 castlemart  -8.28e-02 0.1606 Inf  -0.516  0.8066
##  6 castlemart - 23 castlemart   3.62e-01 0.1771 Inf   2.043  0.1933
##  6 castlemart - 24 castlemart   1.57e-03 0.1644 Inf   0.010  0.9961
##  6 castlemart - 25 castlemart   1.01e-01 0.1678 Inf   0.599  0.7691
##  6 castlemart - 26 castlemart  -2.92e-03 0.1669 Inf  -0.018  0.9939
##  6 castlemart - 27 castlemart  -1.17e-01 0.1654 Inf  -0.705  0.7214
##  6 castlemart - 28 castlemart  -1.37e-02 0.1651 Inf  -0.083  0.9741
##  6 castlemart - 29 castlemart   1.81e-01 0.1646 Inf   1.100  0.5430
##  6 castlemart - 30 castlemart   1.55e-01 0.1658 Inf   0.932  0.6201
##  6 castlemart - 31 castlemart  -1.81e-01 0.1580 Inf  -1.148  0.5248
##  6 castlemart - 32 castlemart   4.05e-01 0.1675 Inf   2.418  0.1142
##  6 castlemart - 33 castlemart   3.23e-01 0.1605 Inf   2.014  0.2015
##  6 castlemart - 34 castlemart  -1.52e-01 0.1616 Inf  -0.938  0.6194
##  6 castlemart - 35 castlemart   9.67e-02 0.1688 Inf   0.573  0.7819
##  6 castlemart - 36 castlemart  -1.60e-01 0.1620 Inf  -0.986  0.5949
##  6 castlemart - 37 castlemart   2.21e-01 0.1709 Inf   1.291  0.4626
##  6 castlemart - 38 castlemart   1.30e-01 0.1631 Inf   0.797  0.6812
##  6 castlemart - 39 castlemart   8.06e-02 0.1785 Inf   0.451  0.8311
##  6 castlemart - 41 castlemart   7.74e-02 0.1612 Inf   0.480  0.8236
##  6 castlemart - 42 castlemart  -3.63e-02 0.1637 Inf  -0.221  0.9261
##  6 castlemart - 43 castlemart   1.95e-01 0.1643 Inf   1.187  0.5071
##  6 castlemart - 44 castlemart  -3.20e-01 0.1668 Inf  -1.922  0.2276
##  6 castlemart - 45 castlemart   1.08e-02 0.1635 Inf   0.066  0.9784
##  6 castlemart - 46 castlemart  -1.26e-01 0.1661 Inf  -0.757  0.6995
##  6 castlemart - 47 castlemart   3.53e-01 0.1619 Inf   2.181  0.1569
##  6 castlemart - 48 castlemart  -3.64e-01 0.1614 Inf  -2.259  0.1395
##  6 castlemart - 49 castlemart  -6.38e-02 0.1613 Inf  -0.395  0.8558
##  6 castlemart - 50 castlemart   6.22e-02 0.1626 Inf   0.383  0.8615
##  6 castlemart - 51 castlemart  -2.91e-01 0.1676 Inf  -1.734  0.2905
##  6 castlemart - 52 castlemart  -1.38e-01 0.1557 Inf  -0.885  0.6420
##  6 castlemart - 53 castlemart   1.14e-02 0.1609 Inf   0.071  0.9766
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##  6 castlemart - 54 castlemart  -1.12e-01 0.1606 Inf  -0.700  0.7227
##  6 castlemart - 55 castlemart   2.00e-02 0.1580 Inf   0.127  0.9590
##  6 castlemart - 56 castlemart  -3.46e-02 0.1699 Inf  -0.204  0.9312
##  6 castlemart - 57 castlemart  -1.05e-01 0.1586 Inf  -0.661  0.7410
##  6 castlemart - 58 castlemart  -1.61e-01 0.1603 Inf  -1.004  0.5858
##  6 castlemart - 59 castlemart   1.89e-01 0.1669 Inf   1.134  0.5314
##  6 castlemart - 60 castlemart   8.32e-02 0.1607 Inf   0.518  0.8066
##  6 castlemart - 61 castlemart  -1.80e-01 0.1613 Inf  -1.118  0.5359
##  6 castlemart - 1 def1          2.39e-01 0.1607 Inf   1.489  0.3788
##  6 castlemart - 2 def1         -2.84e-03 0.1606 Inf  -0.018  0.9939
##  6 castlemart - 3 def1         -2.36e-02 0.1648 Inf  -0.143  0.9536
##  6 castlemart - 4 def1         -1.43e-01 0.1684 Inf  -0.849  0.6578
##  6 castlemart - 5 def1         -2.39e-01 0.1642 Inf  -1.452  0.3928
##  6 castlemart - 6 def1         -6.69e-02 0.0289 Inf  -2.318  0.1278
##  6 castlemart - 7 def1         -7.43e-02 0.1655 Inf  -0.449  0.8322
##  6 castlemart - 8 def1          2.32e-01 0.1693 Inf   1.371  0.4270
##  6 castlemart - 9 def1         -2.46e-01 0.1670 Inf  -1.473  0.3857
##  6 castlemart - 10 def1        -6.13e-02 0.1699 Inf  -0.361  0.8722
##  6 castlemart - 11 def1        -2.02e-01 0.1652 Inf  -1.226  0.4900
##  6 castlemart - 12 def1        -1.20e-01 0.1639 Inf  -0.732  0.7091
##  6 castlemart - 13 def1        -3.93e-02 0.1645 Inf  -0.239  0.9170
##  6 castlemart - 14 def1        -3.88e-01 0.1623 Inf  -2.388  0.1200
##  6 castlemart - 15 def1         5.14e-02 0.1639 Inf   0.314  0.8888
##  6 castlemart - 16 def1         9.53e-02 0.1605 Inf   0.593  0.7714
##  6 castlemart - 17 def1        -1.87e-03 0.1616 Inf  -0.012  0.9958
##  6 castlemart - 18 def1         2.13e-02 0.1683 Inf   0.127  0.9591
##  6 castlemart - 19 def1         5.93e-01 0.1881 Inf   3.155  0.0290
##  6 castlemart - 20 def1         7.40e-02 0.1679 Inf   0.441  0.8372
##  6 castlemart - 22 def1        -1.50e-01 0.1634 Inf  -0.916  0.6269
##  6 castlemart - 23 def1         2.95e-01 0.1801 Inf   1.637  0.3257
##  6 castlemart - 24 def1        -6.53e-02 0.1671 Inf  -0.391  0.8581
##  6 castlemart - 25 def1         3.36e-02 0.1705 Inf   0.197  0.9329
##  6 castlemart - 26 def1        -6.98e-02 0.1694 Inf  -0.412  0.8496
##  6 castlemart - 27 def1        -1.84e-01 0.1679 Inf  -1.093  0.5452
##  6 castlemart - 28 def1        -8.06e-02 0.1679 Inf  -0.480  0.8236
##  6 castlemart - 29 def1         1.14e-01 0.1669 Inf   0.684  0.7309
##  6 castlemart - 30 def1         8.76e-02 0.1683 Inf   0.521  0.8066
##  6 castlemart - 31 def1        -2.48e-01 0.1608 Inf  -1.544  0.3596
##  6 castlemart - 32 def1         3.38e-01 0.1701 Inf   1.987  0.2094
##  6 castlemart - 33 def1         2.56e-01 0.1630 Inf   1.573  0.3499
##  6 castlemart - 34 def1        -2.19e-01 0.1641 Inf  -1.332  0.4450
##  6 castlemart - 35 def1         2.98e-02 0.1713 Inf   0.174  0.9416
##  6 castlemart - 36 def1        -2.27e-01 0.1648 Inf  -1.375  0.4252
##  6 castlemart - 37 def1         1.54e-01 0.1733 Inf   0.887  0.6406
##  6 castlemart - 38 def1         6.31e-02 0.1652 Inf   0.382  0.8617
##  6 castlemart - 39 def1         1.37e-02 0.1808 Inf   0.076  0.9763
##  6 castlemart - 41 def1         1.06e-02 0.1637 Inf   0.064  0.9784
##  6 castlemart - 42 def1        -1.03e-01 0.1666 Inf  -0.619  0.7615
##  6 castlemart - 43 def1         1.28e-01 0.1668 Inf   0.768  0.6940
##  6 castlemart - 44 def1        -3.87e-01 0.1692 Inf  -2.290  0.1318
##  6 castlemart - 45 def1        -5.61e-02 0.1657 Inf  -0.339  0.8797
##  6 castlemart - 46 def1        -1.93e-01 0.1692 Inf  -1.138  0.5298
##  6 castlemart - 47 def1         2.86e-01 0.1643 Inf   1.743  0.2867
##  6 castlemart - 48 def1        -4.31e-01 0.1638 Inf  -2.633  0.0784
##  6 castlemart - 49 def1        -1.31e-01 0.1640 Inf  -0.796  0.6812
##  6 castlemart - 50 def1        -4.69e-03 0.1648 Inf  -0.028  0.9900
```

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##  6 castlemart - 51 def1        -3.58e-01 0.1697 Inf  -2.106  0.1762
##  6 castlemart - 52 def1        -2.05e-01 0.1584 Inf  -1.293  0.4613
##  6 castlemart - 53 def1        -5.55e-02 0.1637 Inf  -0.339  0.8797
##  6 castlemart - 54 def1        -1.79e-01 0.1633 Inf  -1.098  0.5444
##  6 castlemart - 55 def1        -4.69e-02 0.1607 Inf  -0.292  0.8976
##  6 castlemart - 56 def1        -1.02e-01 0.1724 Inf  -0.589  0.7728
##  6 castlemart - 57 def1        -1.72e-01 0.1612 Inf  -1.065  0.5568
##  6 castlemart - 58 def1        -2.28e-01 0.1629 Inf  -1.398  0.4148
##  6 castlemart - 59 def1         1.22e-01 0.1693 Inf   0.723  0.7155
##  6 castlemart - 60 def1         1.63e-02 0.1630 Inf   0.100  0.9674
##  6 castlemart - 61 def1        -2.47e-01 0.1637 Inf  -1.510  0.3717
##  7 castlemart - 8 castlemart    3.07e-01 0.1675 Inf   1.830  0.2562
##  7 castlemart - 9 castlemart   -1.72e-01 0.1673 Inf  -1.026  0.5741
##  7 castlemart - 10 castlemart   1.30e-02 0.1737 Inf   0.075  0.9766
##  7 castlemart - 11 castlemart  -1.28e-01 0.1637 Inf  -0.782  0.6874
##  7 castlemart - 12 castlemart  -4.57e-02 0.1597 Inf  -0.286  0.8984
##  7 castlemart - 13 castlemart   3.51e-02 0.1628 Inf   0.216  0.9278
##  7 castlemart - 14 castlemart  -3.13e-01 0.1638 Inf  -1.913  0.2300
##  7 castlemart - 15 castlemart   1.26e-01 0.1639 Inf   0.767  0.6945
##  7 castlemart - 16 castlemart   1.70e-01 0.1566 Inf   1.083  0.5492
##  7 castlemart - 17 castlemart   7.25e-02 0.1643 Inf   0.441  0.8371
##  7 castlemart - 18 castlemart   9.56e-02 0.1680 Inf   0.569  0.7836
##  7 castlemart - 19 castlemart   6.68e-01 0.1857 Inf   3.595  0.0112
##  7 castlemart - 20 castlemart   1.48e-01 0.1650 Inf   0.899  0.6345
##  7 castlemart - 22 castlemart  -7.53e-02 0.1609 Inf  -0.468  0.8276
##  7 castlemart - 23 castlemart   3.69e-01 0.1760 Inf   2.097  0.1788
##  7 castlemart - 24 castlemart   9.03e-03 0.1661 Inf   0.054  0.9814
##  7 castlemart - 25 castlemart   1.08e-01 0.1651 Inf   0.654  0.7441
##  7 castlemart - 26 castlemart   4.53e-03 0.1656 Inf   0.027  0.9904
##  7 castlemart - 27 castlemart  -1.09e-01 0.1639 Inf  -0.666  0.7388
##  7 castlemart - 28 castlemart  -6.28e-03 0.1670 Inf  -0.038  0.9868
##  7 castlemart - 29 castlemart   1.88e-01 0.1580 Inf   1.193  0.5037
##  7 castlemart - 30 castlemart   1.62e-01 0.1627 Inf   0.995  0.5899
##  7 castlemart - 31 castlemart  -1.74e-01 0.1530 Inf  -1.137  0.5302
##  7 castlemart - 32 castlemart   4.12e-01 0.1668 Inf   2.472  0.1041
##  7 castlemart - 33 castlemart   3.31e-01 0.1643 Inf   2.013  0.2016
##  7 castlemart - 34 castlemart  -1.44e-01 0.1624 Inf  -0.888  0.6404
##  7 castlemart - 35 castlemart   1.04e-01 0.1662 Inf   0.627  0.7586
##  7 castlemart - 36 castlemart  -1.52e-01 0.1570 Inf  -0.970  0.6015
##  7 castlemart - 37 castlemart   2.28e-01 0.1715 Inf   1.330  0.4454
##  7 castlemart - 38 castlemart   1.37e-01 0.1635 Inf   0.841  0.6614
##  7 castlemart - 39 castlemart   8.80e-02 0.1780 Inf   0.495  0.8180
##  7 castlemart - 41 castlemart   8.49e-02 0.1646 Inf   0.516  0.8066
##  7 castlemart - 42 castlemart  -2.88e-02 0.1645 Inf  -0.175  0.9409
##  7 castlemart - 43 castlemart   2.03e-01 0.1647 Inf   1.230  0.4880
##  7 castlemart - 44 castlemart  -3.13e-01 0.1628 Inf  -1.923  0.2276
##  7 castlemart - 45 castlemart   1.82e-02 0.1625 Inf   0.112  0.9631
##  7 castlemart - 46 castlemart  -1.18e-01 0.1670 Inf  -0.708  0.7205
##  7 castlemart - 47 castlemart   3.61e-01 0.1624 Inf   2.221  0.1481
##  7 castlemart - 48 castlemart  -3.57e-01 0.1645 Inf  -2.170  0.1598
##  7 castlemart - 49 castlemart  -5.63e-02 0.1589 Inf  -0.354  0.8750
##  7 castlemart - 50 castlemart   6.97e-02 0.1625 Inf   0.429  0.8436
##  7 castlemart - 51 castlemart  -2.83e-01 0.1655 Inf  -1.711  0.2977
##  7 castlemart - 52 castlemart  -1.30e-01 0.1646 Inf  -0.793  0.6822
##  7 castlemart - 53 castlemart   1.89e-02 0.1622 Inf   0.116  0.9621
##  7 castlemart - 54 castlemart  -1.05e-01 0.1594 Inf  -0.658  0.7421
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##  7 castlemart - 55 castlemart   2.75e-02 0.1597 Inf   0.172  0.9420
##  7 castlemart - 56 castlemart  -2.72e-02 0.1674 Inf  -0.162  0.9470
##  7 castlemart - 57 castlemart  -9.73e-02 0.1652 Inf  -0.589  0.7728
##  7 castlemart - 58 castlemart  -1.53e-01 0.1637 Inf  -0.938  0.6194
##  7 castlemart - 59 castlemart   1.97e-01 0.1702 Inf   1.155  0.5208
##  7 castlemart - 60 castlemart   9.07e-02 0.1605 Inf   0.565  0.7861
##  7 castlemart - 61 castlemart  -1.73e-01 0.1650 Inf  -1.047  0.5649
##  7 castlemart - 1 def1          2.47e-01 0.1619 Inf   1.524  0.3664
##  7 castlemart - 2 def1          4.62e-03 0.1629 Inf   0.028  0.9900
##  7 castlemart - 3 def1         -1.61e-02 0.1648 Inf  -0.098  0.9684
##  7 castlemart - 4 def1         -1.36e-01 0.1690 Inf  -0.802  0.6782
##  7 castlemart - 5 def1         -2.31e-01 0.1613 Inf  -1.432  0.3991
##  7 castlemart - 6 def1         -5.94e-02 0.1651 Inf  -0.360  0.8725
##  7 castlemart - 7 def1         -6.69e-02 0.0289 Inf  -2.318  0.1278
##  7 castlemart - 8 def1          2.40e-01 0.1692 Inf   1.416  0.4080
##  7 castlemart - 9 def1         -2.39e-01 0.1698 Inf  -1.404  0.4117
##  7 castlemart - 10 def1        -5.39e-02 0.1757 Inf  -0.307  0.8904
##  7 castlemart - 11 def1        -1.95e-01 0.1658 Inf  -1.176  0.5120
##  7 castlemart - 12 def1        -1.13e-01 0.1628 Inf  -0.692  0.7268
##  7 castlemart - 13 def1        -3.18e-02 0.1652 Inf  -0.193  0.9352
##  7 castlemart - 14 def1        -3.80e-01 0.1663 Inf  -2.285  0.1328
##  7 castlemart - 15 def1         5.89e-02 0.1665 Inf   0.354  0.8750
##  7 castlemart - 16 def1         1.03e-01 0.1594 Inf   0.645  0.7490
##  7 castlemart - 17 def1         5.58e-03 0.1667 Inf   0.034  0.9879
##  7 castlemart - 18 def1         2.87e-02 0.1701 Inf   0.169  0.9439
##  7 castlemart - 19 def1         6.01e-01 0.1880 Inf   3.197  0.0271
##  7 castlemart - 20 def1         8.14e-02 0.1680 Inf   0.485  0.8234
##  7 castlemart - 22 def1        -1.42e-01 0.1636 Inf  -0.869  0.6505
##  7 castlemart - 23 def1         3.02e-01 0.1788 Inf   1.690  0.3057
##  7 castlemart - 24 def1        -5.79e-02 0.1685 Inf  -0.343  0.8775
##  7 castlemart - 25 def1         4.11e-02 0.1676 Inf   0.245  0.9149
##  7 castlemart - 26 def1        -6.24e-02 0.1680 Inf  -0.371  0.8677
##  7 castlemart - 27 def1        -1.76e-01 0.1662 Inf  -1.059  0.5594
##  7 castlemart - 28 def1        -7.32e-02 0.1695 Inf  -0.432  0.8429
##  7 castlemart - 29 def1         1.22e-01 0.1602 Inf   0.759  0.6995
##  7 castlemart - 30 def1         9.51e-02 0.1651 Inf   0.576  0.7804
##  7 castlemart - 31 def1        -2.41e-01 0.1557 Inf  -1.547  0.3588
##  7 castlemart - 32 def1         3.45e-01 0.1693 Inf   2.041  0.1939
##  7 castlemart - 33 def1         2.64e-01 0.1665 Inf   1.584  0.3444
##  7 castlemart - 34 def1        -2.11e-01 0.1647 Inf  -1.282  0.4667
##  7 castlemart - 35 def1         3.73e-02 0.1685 Inf   0.221  0.9261
##  7 castlemart - 36 def1        -2.19e-01 0.1596 Inf  -1.373  0.4263
##  7 castlemart - 37 def1         1.61e-01 0.1737 Inf   0.928  0.6210
##  7 castlemart - 38 def1         7.06e-02 0.1654 Inf   0.427  0.8445
##  7 castlemart - 39 def1         2.11e-02 0.1800 Inf   0.117  0.9618
##  7 castlemart - 41 def1         1.80e-02 0.1669 Inf   0.108  0.9645
##  7 castlemart - 42 def1        -9.57e-02 0.1671 Inf  -0.573  0.7819
##  7 castlemart - 43 def1         1.36e-01 0.1670 Inf   0.812  0.6742
##  7 castlemart - 44 def1        -3.80e-01 0.1650 Inf  -2.302  0.1295
##  7 castlemart - 45 def1        -4.87e-02 0.1646 Inf  -0.296  0.8960
##  7 castlemart - 46 def1        -1.85e-01 0.1698 Inf  -1.090  0.5462
##  7 castlemart - 47 def1         2.94e-01 0.1646 Inf   1.785  0.2714
##  7 castlemart - 48 def1        -4.24e-01 0.1667 Inf  -2.542  0.0923
##  7 castlemart - 49 def1        -1.23e-01 0.1615 Inf  -0.763  0.6973
##  7 castlemart - 50 def1         2.77e-03 0.1646 Inf   0.017  0.9942
##  7 castlemart - 51 def1        -3.50e-01 0.1675 Inf  -2.091  0.1803
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##  7 castlemart - 52 def1        -1.97e-01 0.1669 Inf  -1.183  0.5091
##  7 castlemart - 53 def1        -4.80e-02 0.1648 Inf  -0.292  0.8976
##  7 castlemart - 54 def1        -1.72e-01 0.1620 Inf  -1.061  0.5591
##  7 castlemart - 55 def1        -3.94e-02 0.1622 Inf  -0.243  0.9153
##  7 castlemart - 56 def1        -9.40e-02 0.1698 Inf  -0.554  0.7901
##  7 castlemart - 57 def1        -1.64e-01 0.1675 Inf  -0.980  0.5973
##  7 castlemart - 58 def1        -2.20e-01 0.1660 Inf  -1.327  0.4465
##  7 castlemart - 59 def1         1.30e-01 0.1724 Inf   0.753  0.7002
##  7 castlemart - 60 def1         2.38e-02 0.1626 Inf   0.146  0.9534
##  7 castlemart - 61 def1        -2.40e-01 0.1673 Inf  -1.433  0.3990
##  8 castlemart - 9 castlemart   -4.78e-01 0.1690 Inf  -2.829  0.0551
##  8 castlemart - 10 castlemart  -2.93e-01 0.1763 Inf  -1.665  0.3154
##  8 castlemart - 11 castlemart  -4.35e-01 0.1603 Inf  -2.711  0.0669
##  8 castlemart - 12 castlemart  -3.52e-01 0.1635 Inf  -2.154  0.1628
##  8 castlemart - 13 castlemart  -2.71e-01 0.1659 Inf  -1.636  0.3257
##  8 castlemart - 14 castlemart  -6.20e-01 0.1669 Inf  -3.714  0.0080
##  8 castlemart - 15 castlemart  -1.81e-01 0.1662 Inf  -1.087  0.5473
##  8 castlemart - 16 castlemart  -1.37e-01 0.1617 Inf  -0.846  0.6583
##  8 castlemart - 17 castlemart  -2.34e-01 0.1654 Inf  -1.415  0.4080
##  8 castlemart - 18 castlemart  -2.11e-01 0.1673 Inf  -1.260  0.4768
##  8 castlemart - 19 castlemart   3.61e-01 0.1857 Inf   1.945  0.2223
##  8 castlemart - 20 castlemart  -1.58e-01 0.1700 Inf  -0.930  0.6208
##  8 castlemart - 22 castlemart  -3.82e-01 0.1654 Inf  -2.309  0.1286
##  8 castlemart - 23 castlemart   6.27e-02 0.1811 Inf   0.346  0.8771
##  8 castlemart - 24 castlemart  -2.97e-01 0.1680 Inf  -1.771  0.2757
##  8 castlemart - 25 castlemart  -1.99e-01 0.1644 Inf  -1.208  0.4977
##  8 castlemart - 26 castlemart  -3.02e-01 0.1683 Inf  -1.794  0.2681
##  8 castlemart - 27 castlemart  -4.16e-01 0.1706 Inf  -2.437  0.1108
##  8 castlemart - 28 castlemart  -3.13e-01 0.1695 Inf  -1.846  0.2506
##  8 castlemart - 29 castlemart  -1.18e-01 0.1664 Inf  -0.709  0.7205
##  8 castlemart - 30 castlemart  -1.45e-01 0.1599 Inf  -0.904  0.6327
##  8 castlemart - 31 castlemart  -4.80e-01 0.1601 Inf  -3.001  0.0382
##  8 castlemart - 32 castlemart   1.06e-01 0.1669 Inf   0.634  0.7545
##  8 castlemart - 33 castlemart   2.43e-02 0.1655 Inf   0.147  0.9531
##  8 castlemart - 34 castlemart  -4.51e-01 0.1647 Inf  -2.736  0.0646
##  8 castlemart - 35 castlemart  -2.02e-01 0.1689 Inf  -1.198  0.5015
##  8 castlemart - 36 castlemart  -4.59e-01 0.1667 Inf  -2.752  0.0628
##  8 castlemart - 37 castlemart  -7.84e-02 0.1707 Inf  -0.459  0.8291
##  8 castlemart - 38 castlemart  -1.69e-01 0.1614 Inf  -1.047  0.5649
##  8 castlemart - 39 castlemart  -2.18e-01 0.1824 Inf  -1.198  0.5015
##  8 castlemart - 41 castlemart  -2.22e-01 0.1663 Inf  -1.333  0.4448
##  8 castlemart - 42 castlemart  -3.35e-01 0.1624 Inf  -2.064  0.1878
##  8 castlemart - 43 castlemart  -1.04e-01 0.1675 Inf  -0.621  0.7610
##  8 castlemart - 44 castlemart  -6.19e-01 0.1700 Inf  -3.645  0.0096
##  8 castlemart - 45 castlemart  -2.88e-01 0.1669 Inf  -1.727  0.2916
##  8 castlemart - 46 castlemart  -4.25e-01 0.1653 Inf  -2.569  0.0881
##  8 castlemart - 47 castlemart   5.41e-02 0.1656 Inf   0.327  0.8829
##  8 castlemart - 48 castlemart  -6.63e-01 0.1608 Inf  -4.127  0.0026
##  8 castlemart - 49 castlemart  -3.63e-01 0.1668 Inf  -2.174  0.1585
##  8 castlemart - 50 castlemart  -2.37e-01 0.1678 Inf  -1.411  0.4094
##  8 castlemart - 51 castlemart  -5.90e-01 0.1699 Inf  -3.470  0.0144
##  8 castlemart - 52 castlemart  -4.37e-01 0.1689 Inf  -2.587  0.0856
##  8 castlemart - 53 castlemart  -2.88e-01 0.1667 Inf  -1.726  0.2919
##  8 castlemart - 54 castlemart  -4.11e-01 0.1627 Inf  -2.529  0.0948
##  8 castlemart - 55 castlemart  -2.79e-01 0.1610 Inf  -1.733  0.2907
##  8 castlemart - 56 castlemart  -3.34e-01 0.1683 Inf  -1.983  0.2104
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##  8 castlemart - 57 castlemart  -4.04e-01 0.1676 Inf  -2.409  0.1162
##  8 castlemart - 58 castlemart  -4.60e-01 0.1666 Inf  -2.760  0.0622
##  8 castlemart - 59 castlemart  -1.10e-01 0.1729 Inf  -0.635  0.7540
##  8 castlemart - 60 castlemart  -2.16e-01 0.1663 Inf  -1.298  0.4591
##  8 castlemart - 61 castlemart  -4.79e-01 0.1657 Inf  -2.893  0.0475
##  8 castlemart - 1 def1         -5.98e-02 0.1632 Inf  -0.366  0.8698
##  8 castlemart - 2 def1         -3.02e-01 0.1664 Inf  -1.814  0.2607
##  8 castlemart - 3 def1         -3.23e-01 0.1676 Inf  -1.925  0.2276
##  8 castlemart - 4 def1         -4.42e-01 0.1696 Inf  -2.606  0.0826
##  8 castlemart - 5 def1         -5.38e-01 0.1694 Inf  -3.174  0.0277
##  8 castlemart - 6 def1         -3.66e-01 0.1704 Inf  -2.148  0.1645
##  8 castlemart - 7 def1         -3.73e-01 0.1707 Inf  -2.188  0.1557
##  8 castlemart - 8 def1         -6.69e-02 0.0289 Inf  -2.318  0.1278
##  8 castlemart - 9 def1         -5.45e-01 0.1723 Inf  -3.163  0.0285
##  8 castlemart - 10 def1        -3.60e-01 0.1790 Inf  -2.013  0.2016
##  8 castlemart - 11 def1        -5.01e-01 0.1632 Inf  -3.074  0.0333
##  8 castlemart - 12 def1        -4.19e-01 0.1672 Inf  -2.506  0.0983
##  8 castlemart - 13 def1        -3.38e-01 0.1690 Inf  -2.002  0.2046
##  8 castlemart - 14 def1        -6.87e-01 0.1701 Inf  -4.036  0.0034
##  8 castlemart - 15 def1        -2.48e-01 0.1695 Inf  -1.461  0.3915
##  8 castlemart - 16 def1        -2.04e-01 0.1652 Inf  -1.234  0.4862
##  8 castlemart - 17 def1        -3.01e-01 0.1684 Inf  -1.787  0.2711
##  8 castlemart - 18 def1        -2.78e-01 0.1702 Inf  -1.632  0.3272
##  8 castlemart - 19 def1         2.94e-01 0.1885 Inf   1.561  0.3537
##  8 castlemart - 20 def1        -2.25e-01 0.1736 Inf  -1.297  0.4601
##  8 castlemart - 22 def1        -4.49e-01 0.1687 Inf  -2.660  0.0744
##  8 castlemart - 23 def1        -4.24e-03 0.1846 Inf  -0.023  0.9919
##  8 castlemart - 24 def1        -3.64e-01 0.1711 Inf  -2.129  0.1695
##  8 castlemart - 25 def1        -2.65e-01 0.1677 Inf  -1.583  0.3449
##  8 castlemart - 26 def1        -3.69e-01 0.1714 Inf  -2.152  0.1632
##  8 castlemart - 27 def1        -4.83e-01 0.1736 Inf  -2.780  0.0599
##  8 castlemart - 28 def1        -3.80e-01 0.1727 Inf  -2.198  0.1540
##  8 castlemart - 29 def1        -1.85e-01 0.1693 Inf  -1.092  0.5456
##  8 castlemart - 30 def1        -2.11e-01 0.1631 Inf  -1.296  0.4603
##  8 castlemart - 31 def1        -5.47e-01 0.1634 Inf  -3.350  0.0186
##  8 castlemart - 32 def1         3.90e-02 0.1701 Inf   0.229  0.9232
##  8 castlemart - 33 def1        -4.26e-02 0.1685 Inf  -0.253  0.9120
##  8 castlemart - 34 def1        -5.18e-01 0.1677 Inf  -3.086  0.0326
##  8 castlemart - 35 def1        -2.69e-01 0.1719 Inf  -1.566  0.3529
##  8 castlemart - 36 def1        -5.26e-01 0.1700 Inf  -3.093  0.0321
##  8 castlemart - 37 def1        -1.45e-01 0.1736 Inf  -0.837  0.6630
##  8 castlemart - 38 def1        -2.36e-01 0.1641 Inf  -1.438  0.3974
##  8 castlemart - 39 def1        -2.85e-01 0.1851 Inf  -1.542  0.3603
##  8 castlemart - 41 def1        -2.88e-01 0.1692 Inf  -1.705  0.3002
##  8 castlemart - 42 def1        -4.02e-01 0.1659 Inf  -2.425  0.1132
##  8 castlemart - 43 def1        -1.71e-01 0.1705 Inf  -1.002  0.5866
##  8 castlemart - 44 def1        -6.86e-01 0.1729 Inf  -3.971  0.0041
##  8 castlemart - 45 def1        -3.55e-01 0.1697 Inf  -2.093  0.1795
##  8 castlemart - 46 def1        -4.92e-01 0.1690 Inf  -2.910  0.0459
##  8 castlemart - 47 def1        -1.27e-02 0.1685 Inf  -0.076  0.9763
##  8 castlemart - 48 def1        -7.30e-01 0.1639 Inf  -4.458  0.0011
##  8 castlemart - 49 def1        -4.30e-01 0.1700 Inf  -2.527  0.0952
##  8 castlemart - 50 def1        -3.04e-01 0.1705 Inf  -1.781  0.2725
##  8 castlemart - 51 def1        -6.57e-01 0.1726 Inf  -3.805  0.0062
##  8 castlemart - 52 def1        -5.04e-01 0.1719 Inf  -2.931  0.0445
##  8 castlemart - 53 def1        -3.55e-01 0.1699 Inf  -2.086  0.1814
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##  8 castlemart - 54 def1        -4.78e-01 0.1659 Inf  -2.882  0.0490
##  8 castlemart - 55 def1        -3.46e-01 0.1642 Inf  -2.106  0.1762
##  8 castlemart - 56 def1        -4.01e-01 0.1713 Inf  -2.338  0.1278
##  8 castlemart - 57 def1        -4.71e-01 0.1707 Inf  -2.758  0.0622
##  8 castlemart - 58 def1        -5.27e-01 0.1697 Inf  -3.104  0.0318
##  8 castlemart - 59 def1        -1.77e-01 0.1757 Inf  -1.006  0.5850
##  8 castlemart - 60 def1        -2.83e-01 0.1691 Inf  -1.672  0.3121
##  8 castlemart - 61 def1        -5.46e-01 0.1687 Inf  -3.239  0.0248
##  9 castlemart - 10 castlemart   1.85e-01 0.1691 Inf   1.092  0.5457
##  9 castlemart - 11 castlemart   4.36e-02 0.1657 Inf   0.263  0.9083
##  9 castlemart - 12 castlemart   1.26e-01 0.1624 Inf   0.776  0.6900
##  9 castlemart - 13 castlemart   2.07e-01 0.1624 Inf   1.273  0.4707
##  9 castlemart - 14 castlemart  -1.42e-01 0.1654 Inf  -0.856  0.6560
##  9 castlemart - 15 castlemart   2.97e-01 0.1636 Inf   1.818  0.2599
##  9 castlemart - 16 castlemart   3.41e-01 0.1611 Inf   2.119  0.1725
##  9 castlemart - 17 castlemart   2.44e-01 0.1662 Inf   1.469  0.3878
##  9 castlemart - 18 castlemart   2.67e-01 0.1701 Inf   1.572  0.3504
##  9 castlemart - 19 castlemart   8.39e-01 0.1837 Inf   4.569  0.0009
##  9 castlemart - 20 castlemart   3.20e-01 0.1692 Inf   1.891  0.2366
##  9 castlemart - 22 castlemart   9.63e-02 0.1647 Inf   0.585  0.7742
##  9 castlemart - 23 castlemart   5.41e-01 0.1797 Inf   3.009  0.0378
##  9 castlemart - 24 castlemart   1.81e-01 0.1679 Inf   1.076  0.5522
##  9 castlemart - 25 castlemart   2.80e-01 0.1690 Inf   1.655  0.3188
##  9 castlemart - 26 castlemart   1.76e-01 0.1699 Inf   1.037  0.5706
##  9 castlemart - 27 castlemart   6.24e-02 0.1703 Inf   0.367  0.8698
##  9 castlemart - 28 castlemart   1.65e-01 0.1691 Inf   0.978  0.5974
##  9 castlemart - 29 castlemart   3.60e-01 0.1664 Inf   2.164  0.1607
##  9 castlemart - 30 castlemart   3.34e-01 0.1654 Inf   2.017  0.2009
##  9 castlemart - 31 castlemart  -2.28e-03 0.1590 Inf  -0.014  0.9952
##  9 castlemart - 32 castlemart   5.84e-01 0.1699 Inf   3.438  0.0151
##  9 castlemart - 33 castlemart   5.02e-01 0.1638 Inf   3.067  0.0338
##  9 castlemart - 34 castlemart   2.75e-02 0.1614 Inf   0.170  0.9430
##  9 castlemart - 35 castlemart   2.76e-01 0.1702 Inf   1.620  0.3308
##  9 castlemart - 36 castlemart   1.94e-02 0.1667 Inf   0.116  0.9621
##  9 castlemart - 37 castlemart   4.00e-01 0.1739 Inf   2.299  0.1300
##  9 castlemart - 38 castlemart   3.09e-01 0.1666 Inf   1.856  0.2462
##  9 castlemart - 39 castlemart   2.60e-01 0.1828 Inf   1.420  0.4058
##  9 castlemart - 41 castlemart   2.57e-01 0.1656 Inf   1.549  0.3582
##  9 castlemart - 42 castlemart   1.43e-01 0.1651 Inf   0.865  0.6523
##  9 castlemart - 43 castlemart   3.74e-01 0.1672 Inf   2.238  0.1434
##  9 castlemart - 44 castlemart  -1.41e-01 0.1695 Inf  -0.834  0.6646
##  9 castlemart - 45 castlemart   1.90e-01 0.1626 Inf   1.168  0.5153
##  9 castlemart - 46 castlemart   5.34e-02 0.1662 Inf   0.321  0.8852
##  9 castlemart - 47 castlemart   5.32e-01 0.1638 Inf   3.249  0.0243
##  9 castlemart - 48 castlemart  -1.85e-01 0.1651 Inf  -1.122  0.5347
##  9 castlemart - 49 castlemart   1.15e-01 0.1660 Inf   0.695  0.7253
##  9 castlemart - 50 castlemart   2.41e-01 0.1673 Inf   1.443  0.3962
##  9 castlemart - 51 castlemart  -1.12e-01 0.1686 Inf  -0.662  0.7410
##  9 castlemart - 52 castlemart   4.12e-02 0.1651 Inf   0.250  0.9131
##  9 castlemart - 53 castlemart   1.91e-01 0.1638 Inf   1.163  0.5168
##  9 castlemart - 54 castlemart   6.67e-02 0.1601 Inf   0.417  0.8487
##  9 castlemart - 55 castlemart   1.99e-01 0.1627 Inf   1.224  0.4901
##  9 castlemart - 56 castlemart   1.44e-01 0.1700 Inf   0.850  0.6576
##  9 castlemart - 57 castlemart   7.44e-02 0.1640 Inf   0.453  0.8311
##  9 castlemart - 58 castlemart   1.82e-02 0.1633 Inf   0.112  0.9631
##  9 castlemart - 59 castlemart   3.68e-01 0.1689 Inf   2.181  0.1569
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##  9 castlemart - 60 castlemart   2.62e-01 0.1636 Inf   1.603  0.3368
##  9 castlemart - 61 castlemart  -1.19e-03 0.1642 Inf  -0.007  0.9969
##  9 castlemart - 1 def1          4.18e-01 0.1638 Inf   2.553  0.0905
##  9 castlemart - 2 def1          1.76e-01 0.1651 Inf   1.068  0.5566
##  9 castlemart - 3 def1          1.56e-01 0.1662 Inf   0.936  0.6201
##  9 castlemart - 4 def1          3.61e-02 0.1687 Inf   0.214  0.9286
##  9 castlemart - 5 def1         -5.94e-02 0.1681 Inf  -0.353  0.8750
##  9 castlemart - 6 def1          1.12e-01 0.1664 Inf   0.675  0.7353
##  9 castlemart - 7 def1          1.05e-01 0.1696 Inf   0.618  0.7619
##  9 castlemart - 8 def1          4.11e-01 0.1706 Inf   2.411  0.1161
##  9 castlemart - 9 def1         -6.69e-02 0.0289 Inf  -2.318  0.1278
##  9 castlemart - 10 def1         1.18e-01 0.1711 Inf   0.688  0.7287
##  9 castlemart - 11 def1        -2.33e-02 0.1675 Inf  -0.139  0.9554
##  9 castlemart - 12 def1         5.91e-02 0.1653 Inf   0.357  0.8736
##  9 castlemart - 13 def1         1.40e-01 0.1647 Inf   0.849  0.6578
##  9 castlemart - 14 def1        -2.08e-01 0.1678 Inf  -1.243  0.4832
##  9 castlemart - 15 def1         2.31e-01 0.1660 Inf   1.388  0.4195
##  9 castlemart - 16 def1         2.74e-01 0.1636 Inf   1.677  0.3111
##  9 castlemart - 17 def1         1.77e-01 0.1683 Inf   1.053  0.5629
##  9 castlemart - 18 def1         2.00e-01 0.1720 Inf   1.165  0.5165
##  9 castlemart - 19 def1         7.72e-01 0.1858 Inf   4.157  0.0024
##  9 castlemart - 20 def1         2.53e-01 0.1719 Inf   1.472  0.3861
##  9 castlemart - 22 def1         2.94e-02 0.1671 Inf   0.176  0.9405
##  9 castlemart - 23 def1         4.74e-01 0.1824 Inf   2.599  0.0836
##  9 castlemart - 24 def1         1.14e-01 0.1701 Inf   0.669  0.7380
##  9 castlemart - 25 def1         2.13e-01 0.1714 Inf   1.241  0.4832
##  9 castlemart - 26 def1         1.09e-01 0.1721 Inf   0.635  0.7540
##  9 castlemart - 27 def1        -4.45e-03 0.1725 Inf  -0.026  0.9905
##  9 castlemart - 28 def1         9.85e-02 0.1715 Inf   0.574  0.7813
##  9 castlemart - 29 def1         2.93e-01 0.1684 Inf   1.741  0.2874
##  9 castlemart - 30 def1         2.67e-01 0.1676 Inf   1.591  0.3413
##  9 castlemart - 31 def1        -6.92e-02 0.1614 Inf  -0.428  0.8436
##  9 castlemart - 32 def1         5.17e-01 0.1722 Inf   3.003  0.0382
##  9 castlemart - 33 def1         4.36e-01 0.1659 Inf   2.625  0.0799
##  9 castlemart - 34 def1        -3.94e-02 0.1636 Inf  -0.241  0.9165
##  9 castlemart - 35 def1         2.09e-01 0.1724 Inf   1.212  0.4950
##  9 castlemart - 36 def1        -4.75e-02 0.1691 Inf  -0.281  0.9011
##  9 castlemart - 37 def1         3.33e-01 0.1759 Inf   1.893  0.2363
##  9 castlemart - 38 def1         2.42e-01 0.1683 Inf   1.440  0.3967
##  9 castlemart - 39 def1         1.93e-01 0.1847 Inf   1.044  0.5669
##  9 castlemart - 41 def1         1.90e-01 0.1677 Inf   1.131  0.5320
##  9 castlemart - 42 def1         7.60e-02 0.1677 Inf   0.453  0.8311
##  9 castlemart - 43 def1         3.07e-01 0.1693 Inf   1.815  0.2607
##  9 castlemart - 44 def1        -2.08e-01 0.1716 Inf  -1.214  0.4944
##  9 castlemart - 45 def1         1.23e-01 0.1645 Inf   0.748  0.7023
##  9 castlemart - 46 def1        -1.35e-02 0.1689 Inf  -0.080  0.9747
##  9 castlemart - 47 def1         4.65e-01 0.1659 Inf   2.806  0.0571
##  9 castlemart - 48 def1        -2.52e-01 0.1672 Inf  -1.508  0.3722
##  9 castlemart - 49 def1         4.85e-02 0.1683 Inf   0.288  0.8984
##  9 castlemart - 50 def1         1.74e-01 0.1691 Inf   1.031  0.5734
##  9 castlemart - 51 def1        -1.78e-01 0.1704 Inf  -1.047  0.5649
##  9 castlemart - 52 def1        -2.57e-02 0.1673 Inf  -0.153  0.9512
##  9 castlemart - 53 def1         1.24e-01 0.1662 Inf   0.744  0.7042
##  9 castlemart - 54 def1        -1.56e-04 0.1625 Inf  -0.001  0.9995
##  9 castlemart - 55 def1         1.32e-01 0.1650 Inf   0.802  0.6782
##  9 castlemart - 56 def1         7.76e-02 0.1722 Inf   0.451  0.8314
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##  9 castlemart - 57 def1         7.47e-03 0.1662 Inf   0.045  0.9832
##  9 castlemart - 58 def1        -4.87e-02 0.1655 Inf  -0.294  0.8963
##  9 castlemart - 59 def1         3.01e-01 0.1709 Inf   1.764  0.2780
##  9 castlemart - 60 def1         1.95e-01 0.1656 Inf   1.180  0.5098
##  9 castlemart - 61 def1        -6.81e-02 0.1663 Inf  -0.409  0.8504
##  10 castlemart - 11 castlemart -1.41e-01 0.1732 Inf  -0.815  0.6730
##  10 castlemart - 12 castlemart -5.87e-02 0.1690 Inf  -0.347  0.8764
##  10 castlemart - 13 castlemart  2.21e-02 0.1724 Inf   0.128  0.9585
##  10 castlemart - 14 castlemart -3.26e-01 0.1721 Inf  -1.896  0.2350
##  10 castlemart - 15 castlemart  1.13e-01 0.1663 Inf   0.678  0.7333
##  10 castlemart - 16 castlemart  1.57e-01 0.1676 Inf   0.935  0.6201
##  10 castlemart - 17 castlemart  5.95e-02 0.1700 Inf   0.350  0.8755
##  10 castlemart - 18 castlemart  8.26e-02 0.1764 Inf   0.468  0.8276
##  10 castlemart - 19 castlemart  6.55e-01 0.1939 Inf   3.376  0.0176
##  10 castlemart - 20 castlemart  1.35e-01 0.1754 Inf   0.771  0.6918
##  10 castlemart - 22 castlemart -8.84e-02 0.1700 Inf  -0.520  0.8066
##  10 castlemart - 23 castlemart  3.56e-01 0.1833 Inf   1.942  0.2232
##  10 castlemart - 24 castlemart -3.99e-03 0.1741 Inf  -0.023  0.9919
##  10 castlemart - 25 castlemart  9.50e-02 0.1770 Inf   0.537  0.7996
##  10 castlemart - 26 castlemart -8.48e-03 0.1758 Inf  -0.048  0.9821
##  10 castlemart - 27 castlemart -1.22e-01 0.1764 Inf  -0.693  0.7263
##  10 castlemart - 28 castlemart -1.93e-02 0.1731 Inf  -0.112  0.9631
##  10 castlemart - 29 castlemart  1.75e-01 0.1720 Inf   1.020  0.5769
##  10 castlemart - 30 castlemart  1.49e-01 0.1746 Inf   0.853  0.6569
##  10 castlemart - 31 castlemart -1.87e-01 0.1657 Inf  -1.128  0.5326
##  10 castlemart - 32 castlemart  3.99e-01 0.1767 Inf   2.260  0.1392
##  10 castlemart - 33 castlemart  3.18e-01 0.1687 Inf   1.884  0.2381
##  10 castlemart - 34 castlemart -1.57e-01 0.1663 Inf  -0.945  0.6162
##  10 castlemart - 35 castlemart  9.11e-02 0.1768 Inf   0.516  0.8066
##  10 castlemart - 36 castlemart -1.65e-01 0.1739 Inf  -0.951  0.6131
##  10 castlemart - 37 castlemart  2.15e-01 0.1798 Inf   1.196  0.5021
##  10 castlemart - 38 castlemart  1.24e-01 0.1732 Inf   0.719  0.7166
##  10 castlemart - 39 castlemart  7.50e-02 0.1886 Inf   0.398  0.8541
##  10 castlemart - 41 castlemart  7.19e-02 0.1727 Inf   0.416  0.8487
##  10 castlemart - 42 castlemart -4.18e-02 0.1737 Inf  -0.241  0.9165
##  10 castlemart - 43 castlemart  1.89e-01 0.1733 Inf   1.093  0.5452
##  10 castlemart - 44 castlemart -3.26e-01 0.1756 Inf  -1.857  0.2462
##  10 castlemart - 45 castlemart  5.21e-03 0.1700 Inf   0.031  0.9895
##  10 castlemart - 46 castlemart -1.31e-01 0.1734 Inf  -0.757  0.6995
##  10 castlemart - 47 castlemart  3.48e-01 0.1699 Inf   2.046  0.1931
##  10 castlemart - 48 castlemart -3.70e-01 0.1700 Inf  -2.176  0.1583
##  10 castlemart - 49 castlemart -6.93e-02 0.1720 Inf  -0.403  0.8524
##  10 castlemart - 50 castlemart  5.66e-02 0.1734 Inf   0.327  0.8829
##  10 castlemart - 51 castlemart -2.96e-01 0.1765 Inf  -1.679  0.3100
##  10 castlemart - 52 castlemart -1.43e-01 0.1659 Inf  -0.865  0.6523
##  10 castlemart - 53 castlemart  5.84e-03 0.1678 Inf   0.035  0.9871
##  10 castlemart - 54 castlemart -1.18e-01 0.1699 Inf  -0.694  0.7256
##  10 castlemart - 55 castlemart  1.45e-02 0.1679 Inf   0.086  0.9740
##  10 castlemart - 56 castlemart -4.02e-02 0.1789 Inf  -0.225  0.9252
##  10 castlemart - 57 castlemart -1.10e-01 0.1696 Inf  -0.651  0.7458
##  10 castlemart - 58 castlemart -1.66e-01 0.1682 Inf  -0.990  0.5930
##  10 castlemart - 59 castlemart  1.84e-01 0.1723 Inf   1.066  0.5566
##  10 castlemart - 60 castlemart  7.76e-02 0.1720 Inf   0.451  0.8311
##  10 castlemart - 61 castlemart -1.86e-01 0.1713 Inf  -1.085  0.5485
##  10 castlemart - 1 def1         2.34e-01 0.1717 Inf   1.361  0.4323
##  10 castlemart - 2 def1        -8.40e-03 0.1717 Inf  -0.049  0.9821
```

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##  10 castlemart - 3 def1       -2.91e-02 0.1749 Inf  -0.167  0.9448
##  10 castlemart - 4 def1       -1.49e-01 0.1758 Inf  -0.845  0.6596
##  10 castlemart - 5 def1       -2.44e-01 0.1749 Inf  -1.396  0.4159
##  10 castlemart - 6 def1       -7.24e-02 0.1703 Inf  -0.425  0.8457
##  10 castlemart - 7 def1       -7.99e-02 0.1765 Inf  -0.453  0.8311
##  10 castlemart - 8 def1        2.27e-01 0.1783 Inf   1.271  0.4719
##  10 castlemart - 9 def1       -2.52e-01 0.1721 Inf  -1.462  0.3911
##  10 castlemart - 10 def1      -6.69e-02 0.0289 Inf  -2.318  0.1278
##  10 castlemart - 11 def1      -2.08e-01 0.1755 Inf  -1.185  0.5081
##  10 castlemart - 12 def1      -1.26e-01 0.1723 Inf  -0.729  0.7113
##  10 castlemart - 13 def1      -4.48e-02 0.1750 Inf  -0.256  0.9110
##  10 castlemart - 14 def1      -3.93e-01 0.1749 Inf  -2.248  0.1414
##  10 castlemart - 15 def1       4.58e-02 0.1693 Inf   0.271  0.9056
##  10 castlemart - 16 def1       8.97e-02 0.1706 Inf   0.526  0.8037
##  10 castlemart - 17 def1      -7.43e-03 0.1727 Inf  -0.043  0.9839
##  10 castlemart - 18 def1       1.57e-02 0.1788 Inf   0.088  0.9738
##  10 castlemart - 19 def1       5.88e-01 0.1964 Inf   2.993  0.0389
##  10 castlemart - 20 def1       6.84e-02 0.1785 Inf   0.383  0.8615
##  10 castlemart - 22 def1      -1.55e-01 0.1729 Inf  -0.898  0.6345
##  10 castlemart - 23 def1       2.89e-01 0.1864 Inf   1.552  0.3574
##  10 castlemart - 24 def1      -7.09e-02 0.1768 Inf  -0.401  0.8533
##  10 castlemart - 25 def1       2.81e-02 0.1798 Inf   0.156  0.9500
##  10 castlemart - 26 def1      -7.54e-02 0.1784 Inf  -0.422  0.8468
##  10 castlemart - 27 def1      -1.89e-01 0.1790 Inf  -1.056  0.5605
##  10 castlemart - 28 def1      -8.62e-02 0.1759 Inf  -0.490  0.8207
##  10 castlemart - 29 def1       1.09e-01 0.1744 Inf   0.623  0.7605
##  10 castlemart - 30 def1       8.21e-02 0.1772 Inf   0.463  0.8288
##  10 castlemart - 31 def1      -2.54e-01 0.1686 Inf  -1.506  0.3729
##  10 castlemart - 32 def1       3.32e-01 0.1794 Inf   1.853  0.2473
##  10 castlemart - 33 def1       2.51e-01 0.1713 Inf   1.465  0.3902
##  10 castlemart - 34 def1      -2.24e-01 0.1690 Inf  -1.326  0.4465
##  10 castlemart - 35 def1       2.43e-02 0.1793 Inf   0.135  0.9561
##  10 castlemart - 36 def1      -2.32e-01 0.1767 Inf  -1.314  0.4515
##  10 castlemart - 37 def1       1.48e-01 0.1822 Inf   0.813  0.6737
##  10 castlemart - 38 def1       5.76e-02 0.1753 Inf   0.328  0.8829
##  10 castlemart - 39 def1       8.12e-03 0.1909 Inf   0.043  0.9842
##  10 castlemart - 41 def1       4.99e-03 0.1752 Inf   0.028  0.9900
##  10 castlemart - 42 def1      -1.09e-01 0.1766 Inf  -0.616  0.7631
##  10 castlemart - 43 def1       1.23e-01 0.1759 Inf   0.697  0.7243
##  10 castlemart - 44 def1      -3.93e-01 0.1781 Inf  -2.207  0.1516
##  10 castlemart - 45 def1      -6.17e-02 0.1724 Inf  -0.358  0.8736
##  10 castlemart - 46 def1      -1.98e-01 0.1766 Inf  -1.122  0.5347
##  10 castlemart - 47 def1       2.81e-01 0.1724 Inf   1.628  0.3286
##  10 castlemart - 48 def1      -4.37e-01 0.1726 Inf  -2.531  0.0946
##  10 castlemart - 49 def1      -1.36e-01 0.1747 Inf  -0.779  0.6885
##  10 castlemart - 50 def1      -1.02e-02 0.1757 Inf  -0.058  0.9801
##  10 castlemart - 51 def1      -3.63e-01 0.1787 Inf  -2.032  0.1959
##  10 castlemart - 52 def1      -2.10e-01 0.1686 Inf  -1.248  0.4817
##  10 castlemart - 53 def1      -6.10e-02 0.1707 Inf  -0.358  0.8736
##  10 castlemart - 54 def1      -1.85e-01 0.1727 Inf  -1.070  0.5562
##  10 castlemart - 55 def1      -5.24e-02 0.1706 Inf  -0.307  0.8903
##  10 castlemart - 56 def1      -1.07e-01 0.1815 Inf  -0.590  0.7727
##  10 castlemart - 57 def1      -1.77e-01 0.1722 Inf  -1.029  0.5738
##  10 castlemart - 58 def1      -2.33e-01 0.1709 Inf  -1.365  0.4301
##  10 castlemart - 59 def1       1.17e-01 0.1749 Inf   0.668  0.7387
##  10 castlemart - 60 def1       1.07e-02 0.1744 Inf   0.062  0.9797
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##  10 castlemart - 61 def1       -2.53e-01 0.1739 Inf  -1.454  0.3928
##  11 castlemart - 12 castlemart  8.24e-02 0.1591 Inf   0.518  0.8066
##  11 castlemart - 13 castlemart  1.63e-01 0.1612 Inf   1.012  0.5801
##  11 castlemart - 14 castlemart -1.85e-01 0.1640 Inf  -1.129  0.5326
##  11 castlemart - 15 castlemart  2.54e-01 0.1625 Inf   1.562  0.3537
##  11 castlemart - 16 castlemart  2.98e-01 0.1581 Inf   1.883  0.2381
##  11 castlemart - 17 castlemart  2.01e-01 0.1638 Inf   1.224  0.4901
##  11 castlemart - 18 castlemart  2.24e-01 0.1655 Inf   1.352  0.4361
##  11 castlemart - 19 castlemart  7.96e-01 0.1840 Inf   4.325  0.0015
##  11 castlemart - 20 castlemart  2.76e-01 0.1672 Inf   1.653  0.3192
##  11 castlemart - 22 castlemart  5.27e-02 0.1615 Inf   0.327  0.8829
##  11 castlemart - 23 castlemart  4.97e-01 0.1768 Inf   2.813  0.0561
##  11 castlemart - 24 castlemart  1.37e-01 0.1652 Inf   0.830  0.6658
##  11 castlemart - 25 castlemart  2.36e-01 0.1629 Inf   1.449  0.3929
##  11 castlemart - 26 castlemart  1.33e-01 0.1660 Inf   0.799  0.6804
##  11 castlemart - 27 castlemart  1.89e-02 0.1677 Inf   0.113  0.9631
##  11 castlemart - 28 castlemart  1.22e-01 0.1650 Inf   0.738  0.7067
##  11 castlemart - 29 castlemart  3.17e-01 0.1646 Inf   1.924  0.2276
##  11 castlemart - 30 castlemart  2.90e-01 0.1633 Inf   1.777  0.2737
##  11 castlemart - 31 castlemart -4.58e-02 0.1575 Inf  -0.291  0.8976
##  11 castlemart - 32 castlemart  5.40e-01 0.1649 Inf   3.277  0.0225
##  11 castlemart - 33 castlemart  4.59e-01 0.1623 Inf   2.827  0.0551
##  11 castlemart - 34 castlemart -1.61e-02 0.1594 Inf  -0.101  0.9669
##  11 castlemart - 35 castlemart  2.32e-01 0.1642 Inf   1.414  0.4080
##  11 castlemart - 36 castlemart -2.42e-02 0.1614 Inf  -0.150  0.9523
##  11 castlemart - 37 castlemart  3.56e-01 0.1697 Inf   2.099  0.1787
##  11 castlemart - 38 castlemart  2.66e-01 0.1636 Inf   1.623  0.3305
##  11 castlemart - 39 castlemart  2.16e-01 0.1803 Inf   1.199  0.5015
##  11 castlemart - 41 castlemart  2.13e-01 0.1615 Inf   1.319  0.4498
##  11 castlemart - 42 castlemart  9.93e-02 0.1590 Inf   0.625  0.7598
##  11 castlemart - 43 castlemart  3.31e-01 0.1649 Inf   2.005  0.2035
##  11 castlemart - 44 castlemart -1.85e-01 0.1672 Inf  -1.106  0.5409
##  11 castlemart - 45 castlemart  1.46e-01 0.1639 Inf   0.893  0.6371
##  11 castlemart - 46 castlemart  9.83e-03 0.1611 Inf   0.061  0.9797
##  11 castlemart - 47 castlemart  4.89e-01 0.1636 Inf   2.988  0.0393
##  11 castlemart - 48 castlemart -2.29e-01 0.1636 Inf  -1.399  0.4147
##  11 castlemart - 49 castlemart  7.18e-02 0.1638 Inf   0.438  0.8379
##  11 castlemart - 50 castlemart  1.98e-01 0.1630 Inf   1.213  0.4944
##  11 castlemart - 51 castlemart -1.55e-01 0.1670 Inf  -0.929  0.6209
##  11 castlemart - 52 castlemart -2.33e-03 0.1647 Inf  -0.014  0.9952
##  11 castlemart - 53 castlemart  1.47e-01 0.1637 Inf   0.898  0.6345
##  11 castlemart - 54 castlemart  2.32e-02 0.1589 Inf   0.146  0.9534
##  11 castlemart - 55 castlemart  1.56e-01 0.1587 Inf   0.980  0.5973
##  11 castlemart - 56 castlemart  1.01e-01 0.1657 Inf   0.609  0.7658
##  11 castlemart - 57 castlemart  3.08e-02 0.1646 Inf   0.187  0.9369
##  11 castlemart - 58 castlemart -2.53e-02 0.1631 Inf  -0.155  0.9504
##  11 castlemart - 59 castlemart  3.25e-01 0.1701 Inf   1.910  0.2309
##  11 castlemart - 60 castlemart  2.19e-01 0.1623 Inf   1.347  0.4377
##  11 castlemart - 61 castlemart -4.47e-02 0.1599 Inf  -0.280  0.9020
##  11 castlemart - 1 def1         3.75e-01 0.1608 Inf   2.331  0.1278
##  11 castlemart - 2 def1         1.33e-01 0.1633 Inf   0.813  0.6737
##  11 castlemart - 3 def1         1.12e-01 0.1642 Inf   0.682  0.7319
##  11 castlemart - 4 def1        -7.46e-03 0.1672 Inf  -0.045  0.9832
##  11 castlemart - 5 def1        -1.03e-01 0.1661 Inf  -0.620  0.7615
##  11 castlemart - 6 def1         6.87e-02 0.1658 Inf   0.414  0.8495
##  11 castlemart - 7 def1         6.12e-02 0.1668 Inf   0.367  0.8698
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##  11 castlemart - 8 def1         3.68e-01 0.1626 Inf   2.261  0.1392
##  11 castlemart - 9 def1        -1.10e-01 0.1688 Inf  -0.654  0.7441
##  11 castlemart - 10 def1        7.42e-02 0.1757 Inf   0.422  0.8468
##  11 castlemart - 11 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  11 castlemart - 12 def1        1.55e-02 0.1627 Inf   0.095  0.9698
##  11 castlemart - 13 def1        9.63e-02 0.1642 Inf   0.587  0.7736
##  11 castlemart - 14 def1       -2.52e-01 0.1670 Inf  -1.509  0.3719
##  11 castlemart - 15 def1        1.87e-01 0.1656 Inf   1.129  0.5326
##  11 castlemart - 16 def1        2.31e-01 0.1614 Inf   1.430  0.3995
##  11 castlemart - 17 def1        1.34e-01 0.1667 Inf   0.802  0.6782
##  11 castlemart - 18 def1        1.57e-01 0.1681 Inf   0.933  0.6201
##  11 castlemart - 19 def1        7.29e-01 0.1867 Inf   3.905  0.0050
##  11 castlemart - 20 def1        2.10e-01 0.1705 Inf   1.228  0.4886
##  11 castlemart - 22 def1       -1.41e-02 0.1646 Inf  -0.086  0.9741
##  11 castlemart - 23 def1        4.30e-01 0.1800 Inf   2.390  0.1194
##  11 castlemart - 24 def1        7.02e-02 0.1681 Inf   0.418  0.8486
##  11 castlemart - 25 def1        1.69e-01 0.1660 Inf   1.019  0.5777
##  11 castlemart - 26 def1        6.57e-02 0.1689 Inf   0.389  0.8586
##  11 castlemart - 27 def1       -4.80e-02 0.1705 Inf  -0.282  0.9011
##  11 castlemart - 28 def1        5.49e-02 0.1681 Inf   0.327  0.8829
##  11 castlemart - 29 def1        2.50e-01 0.1672 Inf   1.493  0.3783
##  11 castlemart - 30 def1        2.23e-01 0.1661 Inf   1.343  0.4397
##  11 castlemart - 31 def1       -1.13e-01 0.1606 Inf  -0.702  0.7218
##  11 castlemart - 32 def1        4.74e-01 0.1679 Inf   2.820  0.0557
##  11 castlemart - 33 def1        3.92e-01 0.1651 Inf   2.375  0.1219
##  11 castlemart - 34 def1       -8.30e-02 0.1622 Inf  -0.511  0.8076
##  11 castlemart - 35 def1        1.65e-01 0.1670 Inf   0.990  0.5930
##  11 castlemart - 36 def1       -9.11e-02 0.1645 Inf  -0.554  0.7901
##  11 castlemart - 37 def1        2.89e-01 0.1724 Inf   1.678  0.3103
##  11 castlemart - 38 def1        1.99e-01 0.1660 Inf   1.197  0.5021
##  11 castlemart - 39 def1        1.49e-01 0.1828 Inf   0.816  0.6730
##  11 castlemart - 41 def1        1.46e-01 0.1643 Inf   0.889  0.6394
##  11 castlemart - 42 def1        3.24e-02 0.1623 Inf   0.200  0.9322
##  11 castlemart - 43 def1        2.64e-01 0.1677 Inf   1.573  0.3499
##  11 castlemart - 44 def1       -2.52e-01 0.1699 Inf  -1.482  0.3813
##  11 castlemart - 45 def1        7.94e-02 0.1665 Inf   0.477  0.8243
##  11 castlemart - 46 def1       -5.71e-02 0.1646 Inf  -0.347  0.8768
##  11 castlemart - 47 def1        4.22e-01 0.1663 Inf   2.537  0.0933
##  11 castlemart - 48 def1       -2.96e-01 0.1664 Inf  -1.778  0.2736
##  11 castlemart - 49 def1        4.91e-03 0.1668 Inf   0.029  0.9896
##  11 castlemart - 50 def1        1.31e-01 0.1655 Inf   0.791  0.6836
##  11 castlemart - 51 def1       -2.22e-01 0.1694 Inf  -1.311  0.4524
##  11 castlemart - 52 def1       -6.92e-02 0.1675 Inf  -0.413  0.8495
##  11 castlemart - 53 def1        8.01e-02 0.1668 Inf   0.480  0.8236
##  11 castlemart - 54 def1       -4.37e-02 0.1620 Inf  -0.270  0.9057
##  11 castlemart - 55 def1        8.87e-02 0.1617 Inf   0.549  0.7927
##  11 castlemart - 56 def1        3.40e-02 0.1685 Inf   0.202  0.9314
##  11 castlemart - 57 def1       -3.61e-02 0.1674 Inf  -0.216  0.9278
##  11 castlemart - 58 def1       -9.22e-02 0.1659 Inf  -0.556  0.7899
##  11 castlemart - 59 def1        2.58e-01 0.1727 Inf   1.493  0.3783
##  11 castlemart - 60 def1        1.52e-01 0.1649 Inf   0.921  0.6241
##  11 castlemart - 61 def1       -1.12e-01 0.1627 Inf  -0.686  0.7298
##  12 castlemart - 13 castlemart  8.08e-02 0.1610 Inf   0.502  0.8131
##  12 castlemart - 14 castlemart -2.68e-01 0.1560 Inf  -1.715  0.2964
##  12 castlemart - 15 castlemart  1.71e-01 0.1618 Inf   1.060  0.5591
##  12 castlemart - 16 castlemart  2.15e-01 0.1555 Inf   1.385  0.4216
```

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##  12 castlemart - 17 castlemart  1.18e-01 0.1568 Inf   0.753  0.7001
##  12 castlemart - 18 castlemart  1.41e-01 0.1651 Inf   0.856  0.6560
##  12 castlemart - 19 castlemart  7.13e-01 0.1833 Inf   3.892  0.0050
##  12 castlemart - 20 castlemart  1.94e-01 0.1616 Inf   1.200  0.5012
##  12 castlemart - 22 castlemart -2.97e-02 0.1606 Inf  -0.185  0.9373
##  12 castlemart - 23 castlemart  4.15e-01 0.1758 Inf   2.360  0.1248
##  12 castlemart - 24 castlemart  5.47e-02 0.1650 Inf   0.332  0.8816
##  12 castlemart - 25 castlemart  1.54e-01 0.1649 Inf   0.932  0.6201
##  12 castlemart - 26 castlemart  5.02e-02 0.1617 Inf   0.311  0.8898
##  12 castlemart - 27 castlemart -6.35e-02 0.1630 Inf  -0.390  0.8585
##  12 castlemart - 28 castlemart  3.94e-02 0.1629 Inf   0.242  0.9159
##  12 castlemart - 29 castlemart  2.34e-01 0.1598 Inf   1.465  0.3900
##  12 castlemart - 30 castlemart  2.08e-01 0.1628 Inf   1.276  0.4697
##  12 castlemart - 31 castlemart -1.28e-01 0.1528 Inf  -0.839  0.6618
##  12 castlemart - 32 castlemart  4.58e-01 0.1625 Inf   2.819  0.0557
##  12 castlemart - 33 castlemart  3.76e-01 0.1591 Inf   2.367  0.1237
##  12 castlemart - 34 castlemart -9.85e-02 0.1583 Inf  -0.622  0.7605
##  12 castlemart - 35 castlemart  1.50e-01 0.1616 Inf   0.927  0.6215
##  12 castlemart - 36 castlemart -1.07e-01 0.1593 Inf  -0.669  0.7377
##  12 castlemart - 37 castlemart  2.74e-01 0.1688 Inf   1.622  0.3307
##  12 castlemart - 38 castlemart  1.83e-01 0.1617 Inf   1.133  0.5317
##  12 castlemart - 39 castlemart  1.34e-01 0.1770 Inf   0.755  0.6995
##  12 castlemart - 41 castlemart  1.31e-01 0.1550 Inf   0.842  0.6612
##  12 castlemart - 42 castlemart  1.69e-02 0.1599 Inf   0.106  0.9649
##  12 castlemart - 43 castlemart  2.48e-01 0.1610 Inf   1.541  0.3604
##  12 castlemart - 44 castlemart -2.67e-01 0.1611 Inf  -1.659  0.3177
##  12 castlemart - 45 castlemart  6.39e-02 0.1592 Inf   0.401  0.8531
##  12 castlemart - 46 castlemart -7.26e-02 0.1605 Inf  -0.452  0.8311
##  12 castlemart - 47 castlemart  4.06e-01 0.1571 Inf   2.586  0.0856
##  12 castlemart - 48 castlemart -3.11e-01 0.1607 Inf  -1.937  0.2245
##  12 castlemart - 49 castlemart -1.06e-02 0.1570 Inf  -0.068  0.9784
##  12 castlemart - 50 castlemart  1.15e-01 0.1605 Inf   0.719  0.7166
##  12 castlemart - 51 castlemart -2.38e-01 0.1624 Inf  -1.462  0.3910
##  12 castlemart - 52 castlemart -8.47e-02 0.1627 Inf  -0.521  0.8066
##  12 castlemart - 53 castlemart  6.45e-02 0.1598 Inf   0.404  0.8524
##  12 castlemart - 54 castlemart -5.92e-02 0.1548 Inf  -0.383  0.8615
##  12 castlemart - 55 castlemart  7.32e-02 0.1566 Inf   0.467  0.8276
##  12 castlemart - 56 castlemart  1.85e-02 0.1672 Inf   0.111  0.9633
##  12 castlemart - 57 castlemart -5.16e-02 0.1596 Inf  -0.323  0.8848
##  12 castlemart - 58 castlemart -1.08e-01 0.1614 Inf  -0.668  0.7387
##  12 castlemart - 59 castlemart  2.42e-01 0.1672 Inf   1.450  0.3929
##  12 castlemart - 60 castlemart  1.36e-01 0.1609 Inf   0.847  0.6582
##  12 castlemart - 61 castlemart -1.27e-01 0.1614 Inf  -0.788  0.6847
##  12 castlemart - 1 def1         2.92e-01 0.1578 Inf   1.853  0.2473
##  12 castlemart - 2 def1         5.03e-02 0.1590 Inf   0.316  0.8870
##  12 castlemart - 3 def1         2.96e-02 0.1621 Inf   0.182  0.9378
##  12 castlemart - 4 def1        -8.99e-02 0.1622 Inf  -0.554  0.7901
##  12 castlemart - 5 def1        -1.85e-01 0.1627 Inf  -1.139  0.5297
##  12 castlemart - 6 def1        -1.37e-02 0.1625 Inf  -0.085  0.9741
##  12 castlemart - 7 def1        -2.12e-02 0.1619 Inf  -0.131  0.9576
##  12 castlemart - 8 def1         2.85e-01 0.1648 Inf   1.731  0.2908
##  12 castlemart - 9 def1        -1.93e-01 0.1646 Inf  -1.171  0.5136
##  12 castlemart - 10 def1       -8.19e-03 0.1706 Inf  -0.048  0.9821
##  12 castlemart - 11 def1       -1.49e-01 0.1607 Inf  -0.929  0.6209
##  12 castlemart - 12 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  12 castlemart - 13 def1        1.39e-02 0.1630 Inf   0.085  0.9741
```

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##  12 castlemart - 14 def1       -3.34e-01 0.1582 Inf  -2.114  0.1741
##  12 castlemart - 15 def1        1.05e-01 0.1639 Inf   0.638  0.7532
##  12 castlemart - 16 def1        1.48e-01 0.1579 Inf   0.940  0.6183
##  12 castlemart - 17 def1        5.13e-02 0.1588 Inf   0.323  0.8848
##  12 castlemart - 18 def1        7.44e-02 0.1668 Inf   0.446  0.8341
##  12 castlemart - 19 def1        6.47e-01 0.1851 Inf   3.492  0.0137
##  12 castlemart - 20 def1        1.27e-01 0.1642 Inf   0.774  0.6908
##  12 castlemart - 22 def1       -9.66e-02 0.1628 Inf  -0.593  0.7716
##  12 castlemart - 23 def1        3.48e-01 0.1782 Inf   1.952  0.2200
##  12 castlemart - 24 def1       -1.22e-02 0.1670 Inf  -0.073  0.9766
##  12 castlemart - 25 def1        8.68e-02 0.1671 Inf   0.519  0.8066
##  12 castlemart - 26 def1       -1.67e-02 0.1636 Inf  -0.102  0.9666
##  12 castlemart - 27 def1       -1.30e-01 0.1650 Inf  -0.791  0.6836
##  12 castlemart - 28 def1       -2.75e-02 0.1650 Inf  -0.167  0.9448
##  12 castlemart - 29 def1        1.67e-01 0.1616 Inf   1.035  0.5718
##  12 castlemart - 30 def1        1.41e-01 0.1647 Inf   0.855  0.6560
##  12 castlemart - 31 def1       -1.95e-01 0.1549 Inf  -1.259  0.4771
##  12 castlemart - 32 def1        3.91e-01 0.1645 Inf   2.377  0.1218
##  12 castlemart - 33 def1        3.10e-01 0.1609 Inf   1.924  0.2276
##  12 castlemart - 34 def1       -1.65e-01 0.1602 Inf  -1.032  0.5729
##  12 castlemart - 35 def1        8.30e-02 0.1635 Inf   0.507  0.8097
##  12 castlemart - 36 def1       -1.73e-01 0.1614 Inf  -1.075  0.5533
##  12 castlemart - 37 def1        2.07e-01 0.1706 Inf   1.213  0.4947
##  12 castlemart - 38 def1        1.16e-01 0.1632 Inf   0.713  0.7193
##  12 castlemart - 39 def1        6.68e-02 0.1787 Inf   0.374  0.8656
##  12 castlemart - 41 def1        6.37e-02 0.1569 Inf   0.406  0.8520
##  12 castlemart - 42 def1       -5.00e-02 0.1622 Inf  -0.308  0.8898
##  12 castlemart - 43 def1        1.81e-01 0.1629 Inf   1.113  0.5386
##  12 castlemart - 44 def1       -3.34e-01 0.1629 Inf  -2.051  0.1917
##  12 castlemart - 45 def1       -2.98e-03 0.1609 Inf  -0.019  0.9939
##  12 castlemart - 46 def1       -1.39e-01 0.1630 Inf  -0.855  0.6560
##  12 castlemart - 47 def1        3.39e-01 0.1589 Inf   2.136  0.1676
##  12 castlemart - 48 def1       -3.78e-01 0.1625 Inf  -2.327  0.1278
##  12 castlemart - 49 def1       -7.75e-02 0.1592 Inf  -0.487  0.8226
##  12 castlemart - 50 def1        4.85e-02 0.1621 Inf   0.299  0.8947
##  12 castlemart - 51 def1       -3.04e-01 0.1640 Inf  -1.857  0.2462
##  12 castlemart - 52 def1       -1.52e-01 0.1646 Inf  -0.921  0.6241
##  12 castlemart - 53 def1       -2.34e-03 0.1619 Inf  -0.014  0.9952
##  12 castlemart - 54 def1       -1.26e-01 0.1569 Inf  -0.804  0.6778
##  12 castlemart - 55 def1        6.29e-03 0.1586 Inf   0.040  0.9856
##  12 castlemart - 56 def1       -4.84e-02 0.1692 Inf  -0.286  0.8984
##  12 castlemart - 57 def1       -1.18e-01 0.1615 Inf  -0.734  0.7083
##  12 castlemart - 58 def1       -1.75e-01 0.1634 Inf  -1.069  0.5566
##  12 castlemart - 59 def1        1.75e-01 0.1689 Inf   1.039  0.5698
##  12 castlemart - 60 def1        6.94e-02 0.1626 Inf   0.427  0.8443
##  12 castlemart - 61 def1       -1.94e-01 0.1632 Inf  -1.189  0.5058
##  13 castlemart - 14 castlemart -3.48e-01 0.1622 Inf  -2.147  0.1645
##  13 castlemart - 15 castlemart  9.07e-02 0.1623 Inf   0.558  0.7891
##  13 castlemart - 16 castlemart  1.35e-01 0.1573 Inf   0.855  0.6560
##  13 castlemart - 17 castlemart  3.74e-02 0.1632 Inf   0.229  0.9232
##  13 castlemart - 18 castlemart  6.05e-02 0.1667 Inf   0.363  0.8707
##  13 castlemart - 19 castlemart  6.33e-01 0.1806 Inf   3.503  0.0135
##  13 castlemart - 20 castlemart  1.13e-01 0.1666 Inf   0.680  0.7326
##  13 castlemart - 22 castlemart -1.10e-01 0.1612 Inf  -0.685  0.7300
##  13 castlemart - 23 castlemart  3.34e-01 0.1761 Inf   1.897  0.2350
##  13 castlemart - 24 castlemart -2.61e-02 0.1644 Inf  -0.158  0.9491
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##  13 castlemart - 25 castlemart  7.29e-02 0.1638 Inf   0.445  0.8348
##  13 castlemart - 26 castlemart -3.06e-02 0.1662 Inf  -0.184  0.9373
##  13 castlemart - 27 castlemart -1.44e-01 0.1651 Inf  -0.874  0.6481
##  13 castlemart - 28 castlemart -4.14e-02 0.1652 Inf  -0.250  0.9131
##  13 castlemart - 29 castlemart  1.53e-01 0.1641 Inf   0.935  0.6201
##  13 castlemart - 30 castlemart  1.27e-01 0.1615 Inf   0.786  0.6856
##  13 castlemart - 31 castlemart -2.09e-01 0.1574 Inf  -1.328  0.4459
##  13 castlemart - 32 castlemart  3.77e-01 0.1641 Inf   2.299  0.1300
##  13 castlemart - 33 castlemart  2.96e-01 0.1620 Inf   1.826  0.2579
##  13 castlemart - 34 castlemart -1.79e-01 0.1574 Inf  -1.139  0.5297
##  13 castlemart - 35 castlemart  6.91e-02 0.1678 Inf   0.412  0.8497
##  13 castlemart - 36 castlemart -1.87e-01 0.1619 Inf  -1.157  0.5199
##  13 castlemart - 37 castlemart  1.93e-01 0.1687 Inf   1.144  0.5272
##  13 castlemart - 38 castlemart  1.02e-01 0.1594 Inf   0.642  0.7504
##  13 castlemart - 39 castlemart  5.29e-02 0.1759 Inf   0.301  0.8941
##  13 castlemart - 41 castlemart  4.98e-02 0.1615 Inf   0.308  0.8898
##  13 castlemart - 42 castlemart -6.39e-02 0.1583 Inf  -0.404  0.8524
##  13 castlemart - 43 castlemart  1.67e-01 0.1626 Inf   1.030  0.5736
##  13 castlemart - 44 castlemart -3.48e-01 0.1666 Inf  -2.090  0.1803
##  13 castlemart - 45 castlemart -1.69e-02 0.1617 Inf  -0.104  0.9654
##  13 castlemart - 46 castlemart -1.53e-01 0.1660 Inf  -0.924  0.6229
##  13 castlemart - 47 castlemart  3.26e-01 0.1630 Inf   1.997  0.2061
##  13 castlemart - 48 castlemart -3.92e-01 0.1632 Inf  -2.402  0.1178
##  13 castlemart - 49 castlemart -9.14e-02 0.1630 Inf  -0.561  0.7880
##  13 castlemart - 50 castlemart  3.46e-02 0.1626 Inf   0.213  0.9288
##  13 castlemart - 51 castlemart -3.18e-01 0.1655 Inf  -1.923  0.2276
##  13 castlemart - 52 castlemart -1.66e-01 0.1635 Inf  -1.012  0.5801
##  13 castlemart - 53 castlemart -1.62e-02 0.1597 Inf  -0.102  0.9666
##  13 castlemart - 54 castlemart -1.40e-01 0.1558 Inf  -0.898  0.6345
##  13 castlemart - 55 castlemart -7.60e-03 0.1586 Inf  -0.048  0.9821
##  13 castlemart - 56 castlemart -6.22e-02 0.1654 Inf  -0.376  0.8648
##  13 castlemart - 57 castlemart -1.32e-01 0.1637 Inf  -0.809  0.6755
##  13 castlemart - 58 castlemart -1.89e-01 0.1605 Inf  -1.175  0.5122
##  13 castlemart - 59 castlemart  1.62e-01 0.1692 Inf   0.955  0.6106
##  13 castlemart - 60 castlemart  5.56e-02 0.1572 Inf   0.353  0.8750
##  13 castlemart - 61 castlemart -2.08e-01 0.1622 Inf  -1.282  0.4667
##  13 castlemart - 1 def1         2.12e-01 0.1621 Inf   1.306  0.4554
##  13 castlemart - 2 def1        -3.05e-02 0.1621 Inf  -0.188  0.9369
##  13 castlemart - 3 def1        -5.12e-02 0.1621 Inf  -0.316  0.8871
##  13 castlemart - 4 def1        -1.71e-01 0.1652 Inf  -1.033  0.5729
##  13 castlemart - 5 def1        -2.66e-01 0.1627 Inf  -1.636  0.3257
##  13 castlemart - 6 def1        -9.45e-02 0.1644 Inf  -0.575  0.7810
##  13 castlemart - 7 def1        -1.02e-01 0.1655 Inf  -0.616  0.7626
##  13 castlemart - 8 def1         2.05e-01 0.1678 Inf   1.219  0.4928
##  13 castlemart - 9 def1        -2.74e-01 0.1652 Inf  -1.656  0.3185
##  13 castlemart - 10 def1       -8.90e-02 0.1745 Inf  -0.510  0.8086
##  13 castlemart - 11 def1       -2.30e-01 0.1634 Inf  -1.408  0.4104
##  13 castlemart - 12 def1       -1.48e-01 0.1642 Inf  -0.899  0.6345
##  13 castlemart - 13 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  13 castlemart - 14 def1       -4.15e-01 0.1649 Inf  -2.518  0.0969
##  13 castlemart - 15 def1        2.38e-02 0.1651 Inf   0.144  0.9536
##  13 castlemart - 16 def1        6.76e-02 0.1602 Inf   0.422  0.8468
##  13 castlemart - 17 def1       -2.95e-02 0.1657 Inf  -0.178  0.9392
##  13 castlemart - 18 def1       -6.34e-03 0.1689 Inf  -0.038  0.9868
##  13 castlemart - 19 def1        5.66e-01 0.1830 Inf   3.092  0.0321
##  13 castlemart - 20 def1        4.63e-02 0.1696 Inf   0.273  0.9051
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##  13 castlemart - 22 def1       -1.77e-01 0.1640 Inf  -1.081  0.5495
##  13 castlemart - 23 def1        2.67e-01 0.1791 Inf   1.492  0.3785
##  13 castlemart - 24 def1       -9.30e-02 0.1670 Inf  -0.557  0.7897
##  13 castlemart - 25 def1        6.01e-03 0.1666 Inf   0.036  0.9871
##  13 castlemart - 26 def1       -9.74e-02 0.1686 Inf  -0.578  0.7790
##  13 castlemart - 27 def1       -2.11e-01 0.1676 Inf  -1.260  0.4768
##  13 castlemart - 28 def1       -1.08e-01 0.1679 Inf  -0.645  0.7490
##  13 castlemart - 29 def1        8.65e-02 0.1664 Inf   0.520  0.8066
##  13 castlemart - 30 def1        6.00e-02 0.1640 Inf   0.366  0.8698
##  13 castlemart - 31 def1       -2.76e-01 0.1601 Inf  -1.723  0.2927
##  13 castlemart - 32 def1        3.10e-01 0.1668 Inf   1.861  0.2451
##  13 castlemart - 33 def1        2.29e-01 0.1644 Inf   1.392  0.4181
##  13 castlemart - 34 def1       -2.46e-01 0.1599 Inf  -1.540  0.3611
##  13 castlemart - 35 def1        2.18e-03 0.1702 Inf   0.013  0.9956
##  13 castlemart - 36 def1       -2.54e-01 0.1646 Inf  -1.545  0.3596
##  13 castlemart - 37 def1        1.26e-01 0.1710 Inf   0.738  0.7068
##  13 castlemart - 38 def1        3.55e-02 0.1615 Inf   0.220  0.9267
##  13 castlemart - 39 def1       -1.40e-02 0.1781 Inf  -0.078  0.9751
##  13 castlemart - 41 def1       -1.71e-02 0.1639 Inf  -0.104  0.9654
##  13 castlemart - 42 def1       -1.31e-01 0.1612 Inf  -0.811  0.6746
##  13 castlemart - 43 def1        1.01e-01 0.1651 Inf   0.609  0.7659
##  13 castlemart - 44 def1       -4.15e-01 0.1689 Inf  -2.457  0.1072
##  13 castlemart - 45 def1       -8.38e-02 0.1639 Inf  -0.511  0.8076
##  13 castlemart - 46 def1       -2.20e-01 0.1691 Inf  -1.303  0.4568
##  13 castlemart - 47 def1        2.59e-01 0.1654 Inf   1.564  0.3537
##  13 castlemart - 48 def1       -4.59e-01 0.1656 Inf  -2.771  0.0611
##  13 castlemart - 49 def1       -1.58e-01 0.1656 Inf  -0.956  0.6105
##  13 castlemart - 50 def1       -3.23e-02 0.1648 Inf  -0.196  0.9333
##  13 castlemart - 51 def1       -3.85e-01 0.1676 Inf  -2.298  0.1300
##  13 castlemart - 52 def1       -2.32e-01 0.1660 Inf  -1.400  0.4143
##  13 castlemart - 53 def1       -8.31e-02 0.1625 Inf  -0.512  0.8076
##  13 castlemart - 54 def1       -2.07e-01 0.1586 Inf  -1.304  0.4559
##  13 castlemart - 55 def1       -7.45e-02 0.1612 Inf  -0.462  0.8291
##  13 castlemart - 56 def1       -1.29e-01 0.1680 Inf  -0.769  0.6937
##  13 castlemart - 57 def1       -1.99e-01 0.1662 Inf  -1.199  0.5015
##  13 castlemart - 58 def1       -2.55e-01 0.1630 Inf  -1.567  0.3525
##  13 castlemart - 59 def1        9.47e-02 0.1715 Inf   0.552  0.7908
##  13 castlemart - 60 def1       -1.13e-02 0.1595 Inf  -0.071  0.9766
##  13 castlemart - 61 def1       -2.75e-01 0.1647 Inf  -1.669  0.3134
##  14 castlemart - 15 castlemart  4.39e-01 0.1628 Inf   2.696  0.0684
##  14 castlemart - 16 castlemart  4.83e-01 0.1569 Inf   3.078  0.0332
##  14 castlemart - 17 castlemart  3.86e-01 0.1581 Inf   2.440  0.1105
##  14 castlemart - 18 castlemart  4.09e-01 0.1636 Inf   2.500  0.0995
##  14 castlemart - 19 castlemart  9.81e-01 0.1851 Inf   5.298  0.0001
##  14 castlemart - 20 castlemart  4.62e-01 0.1633 Inf   2.827  0.0551
##  14 castlemart - 22 castlemart  2.38e-01 0.1627 Inf   1.462  0.3910
##  14 castlemart - 23 castlemart  6.82e-01 0.1778 Inf   3.838  0.0057
##  14 castlemart - 24 castlemart  3.22e-01 0.1670 Inf   1.930  0.2261
##  14 castlemart - 25 castlemart  4.21e-01 0.1673 Inf   2.518  0.0969
##  14 castlemart - 26 castlemart  3.18e-01 0.1642 Inf   1.935  0.2246
##  14 castlemart - 27 castlemart  2.04e-01 0.1637 Inf   1.246  0.4821
##  14 castlemart - 28 castlemart  3.07e-01 0.1641 Inf   1.871  0.2423
##  14 castlemart - 29 castlemart  5.02e-01 0.1638 Inf   3.063  0.0340
##  14 castlemart - 30 castlemart  4.75e-01 0.1642 Inf   2.893  0.0475
##  14 castlemart - 31 castlemart  1.39e-01 0.1550 Inf   0.899  0.6345
##  14 castlemart - 32 castlemart  7.26e-01 0.1655 Inf   4.383  0.0013
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##  14 castlemart - 33 castlemart  6.44e-01 0.1617 Inf   3.982  0.0040
##  14 castlemart - 34 castlemart  1.69e-01 0.1613 Inf   1.048  0.5647
##  14 castlemart - 35 castlemart  4.17e-01 0.1678 Inf   2.487  0.1015
##  14 castlemart - 36 castlemart  1.61e-01 0.1639 Inf   0.982  0.5971
##  14 castlemart - 37 castlemart  5.41e-01 0.1699 Inf   3.187  0.0272
##  14 castlemart - 38 castlemart  4.51e-01 0.1636 Inf   2.755  0.0625
##  14 castlemart - 39 castlemart  4.01e-01 0.1771 Inf   2.266  0.1376
##  14 castlemart - 41 castlemart  3.98e-01 0.1586 Inf   2.510  0.0979
##  14 castlemart - 42 castlemart  2.84e-01 0.1641 Inf   1.733  0.2907
##  14 castlemart - 43 castlemart  5.16e-01 0.1604 Inf   3.216  0.0260
##  14 castlemart - 44 castlemart  2.49e-04 0.1630 Inf   0.002  0.9994
##  14 castlemart - 45 castlemart  3.31e-01 0.1625 Inf   2.040  0.1939
##  14 castlemart - 46 castlemart  1.95e-01 0.1650 Inf   1.182  0.5091
##  14 castlemart - 47 castlemart  6.74e-01 0.1582 Inf   4.259  0.0018
##  14 castlemart - 48 castlemart -4.38e-02 0.1617 Inf  -0.271  0.9056
##  14 castlemart - 49 castlemart  2.57e-01 0.1596 Inf   1.610  0.3347
##  14 castlemart - 50 castlemart  3.83e-01 0.1640 Inf   2.334  0.1278
##  14 castlemart - 51 castlemart  3.00e-02 0.1662 Inf   0.181  0.9384
##  14 castlemart - 52 castlemart  1.83e-01 0.1622 Inf   1.127  0.5328
##  14 castlemart - 53 castlemart  3.32e-01 0.1604 Inf   2.070  0.1860
##  14 castlemart - 54 castlemart  2.08e-01 0.1582 Inf   1.317  0.4501
##  14 castlemart - 55 castlemart  3.41e-01 0.1590 Inf   2.143  0.1655
##  14 castlemart - 56 castlemart  2.86e-01 0.1696 Inf   1.686  0.3068
##  14 castlemart - 57 castlemart  2.16e-01 0.1622 Inf   1.332  0.4450
##  14 castlemart - 58 castlemart  1.60e-01 0.1604 Inf   0.996  0.5899
##  14 castlemart - 59 castlemart  5.10e-01 0.1667 Inf   3.059  0.0340
##  14 castlemart - 60 castlemart  4.04e-01 0.1617 Inf   2.498  0.0998
##  14 castlemart - 61 castlemart  1.40e-01 0.1626 Inf   0.864  0.6529
##  14 castlemart - 1 def1         5.60e-01 0.1586 Inf   3.531  0.0129
##  14 castlemart - 2 def1         3.18e-01 0.1597 Inf   1.991  0.2082
##  14 castlemart - 3 def1         2.97e-01 0.1648 Inf   1.802  0.2649
##  14 castlemart - 4 def1         1.78e-01 0.1666 Inf   1.067  0.5566
##  14 castlemart - 5 def1         8.22e-02 0.1636 Inf   0.502  0.8130
##  14 castlemart - 6 def1         2.54e-01 0.1619 Inf   1.568  0.3518
##  14 castlemart - 7 def1         2.46e-01 0.1663 Inf   1.481  0.3815
##  14 castlemart - 8 def1         5.53e-01 0.1686 Inf   3.279  0.0225
##  14 castlemart - 9 def1         7.47e-02 0.1680 Inf   0.445  0.8349
##  14 castlemart - 10 def1        2.59e-01 0.1741 Inf   1.490  0.3788
##  14 castlemart - 11 def1        1.18e-01 0.1660 Inf   0.712  0.7193
##  14 castlemart - 12 def1        2.01e-01 0.1591 Inf   1.261  0.4767
##  14 castlemart - 13 def1        2.81e-01 0.1646 Inf   1.710  0.2981
##  14 castlemart - 14 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  14 castlemart - 15 def1        3.72e-01 0.1654 Inf   2.250  0.1412
##  14 castlemart - 16 def1        4.16e-01 0.1597 Inf   2.605  0.0826
##  14 castlemart - 17 def1        3.19e-01 0.1604 Inf   1.987  0.2093
##  14 castlemart - 18 def1        3.42e-01 0.1657 Inf   2.064  0.1878
##  14 castlemart - 19 def1        9.14e-01 0.1873 Inf   4.879  0.0005
##  14 castlemart - 20 def1        3.95e-01 0.1662 Inf   2.374  0.1219
##  14 castlemart - 22 def1        1.71e-01 0.1653 Inf   1.035  0.5722
##  14 castlemart - 23 def1        6.16e-01 0.1806 Inf   3.408  0.0161
##  14 castlemart - 24 def1        2.55e-01 0.1694 Inf   1.508  0.3722
##  14 castlemart - 25 def1        3.54e-01 0.1698 Inf   2.087  0.1814
##  14 castlemart - 26 def1        2.51e-01 0.1666 Inf   1.506  0.3728
##  14 castlemart - 27 def1        1.37e-01 0.1660 Inf   0.826  0.6680
##  14 castlemart - 28 def1        2.40e-01 0.1666 Inf   1.441  0.3964
##  14 castlemart - 29 def1        4.35e-01 0.1659 Inf   2.620  0.0806
```

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##  14 castlemart - 30 def1        4.08e-01 0.1666 Inf   2.451  0.1084
##  14 castlemart - 31 def1        7.24e-02 0.1576 Inf   0.460  0.8291
##  14 castlemart - 32 def1        6.59e-01 0.1680 Inf   3.921  0.0048
##  14 castlemart - 33 def1        5.77e-01 0.1640 Inf   3.519  0.0130
##  14 castlemart - 34 def1        1.02e-01 0.1636 Inf   0.625  0.7598
##  14 castlemart - 35 def1        3.51e-01 0.1701 Inf   2.061  0.1892
##  14 castlemart - 36 def1        9.41e-02 0.1665 Inf   0.565  0.7861
##  14 castlemart - 37 def1        4.74e-01 0.1721 Inf   2.757  0.0622
##  14 castlemart - 38 def1        3.84e-01 0.1655 Inf   2.320  0.1278
##  14 castlemart - 39 def1        3.34e-01 0.1791 Inf   1.867  0.2435
##  14 castlemart - 41 def1        3.31e-01 0.1609 Inf   2.059  0.1894
##  14 castlemart - 42 def1        2.18e-01 0.1668 Inf   1.304  0.4559
##  14 castlemart - 43 def1        4.49e-01 0.1627 Inf   2.758  0.0622
##  14 castlemart - 44 def1       -6.66e-02 0.1652 Inf  -0.403  0.8524
##  14 castlemart - 45 def1        2.65e-01 0.1645 Inf   1.608  0.3351
##  14 castlemart - 46 def1        1.28e-01 0.1679 Inf   0.763  0.6973
##  14 castlemart - 47 def1        6.07e-01 0.1604 Inf   3.783  0.0065
##  14 castlemart - 48 def1       -1.11e-01 0.1640 Inf  -0.675  0.7353
##  14 castlemart - 49 def1        1.90e-01 0.1621 Inf   1.173  0.5131
##  14 castlemart - 50 def1        3.16e-01 0.1660 Inf   1.904  0.2328
##  14 castlemart - 51 def1       -3.69e-02 0.1682 Inf  -0.219  0.9267
##  14 castlemart - 52 def1        1.16e-01 0.1645 Inf   0.705  0.7215
##  14 castlemart - 53 def1        2.65e-01 0.1630 Inf   1.627  0.3291
##  14 castlemart - 54 def1        1.41e-01 0.1607 Inf   0.880  0.6454
##  14 castlemart - 55 def1        2.74e-01 0.1614 Inf   1.697  0.3032
##  14 castlemart - 56 def1        2.19e-01 0.1719 Inf   1.275  0.4697
##  14 castlemart - 57 def1        1.49e-01 0.1645 Inf   0.906  0.6322
##  14 castlemart - 58 def1        9.29e-02 0.1628 Inf   0.571  0.7829
##  14 castlemart - 59 def1        4.43e-01 0.1689 Inf   2.624  0.0802
##  14 castlemart - 60 def1        3.37e-01 0.1638 Inf   2.058  0.1896
##  14 castlemart - 61 def1        7.35e-02 0.1648 Inf   0.446  0.8341
##  15 castlemart - 16 castlemart  4.39e-02 0.1585 Inf   0.277  0.9035
##  15 castlemart - 17 castlemart -5.33e-02 0.1604 Inf  -0.332  0.8816
##  15 castlemart - 18 castlemart -3.01e-02 0.1678 Inf  -0.180  0.9384
##  15 castlemart - 19 castlemart  5.42e-01 0.1859 Inf   2.916  0.0455
##  15 castlemart - 20 castlemart  2.26e-02 0.1662 Inf   0.136  0.9561
##  15 castlemart - 22 castlemart -2.01e-01 0.1626 Inf  -1.237  0.4845
##  15 castlemart - 23 castlemart  2.43e-01 0.1761 Inf   1.382  0.4226
##  15 castlemart - 24 castlemart -1.17e-01 0.1673 Inf  -0.698  0.7239
##  15 castlemart - 25 castlemart -1.78e-02 0.1674 Inf  -0.106  0.9649
##  15 castlemart - 26 castlemart -1.21e-01 0.1672 Inf  -0.725  0.7138
##  15 castlemart - 27 castlemart -2.35e-01 0.1676 Inf  -1.402  0.4130
##  15 castlemart - 28 castlemart -1.32e-01 0.1620 Inf  -0.815  0.6730
##  15 castlemart - 29 castlemart  6.27e-02 0.1634 Inf   0.384  0.8615
##  15 castlemart - 30 castlemart  3.62e-02 0.1633 Inf   0.222  0.9261
##  15 castlemart - 31 castlemart -3.00e-01 0.1576 Inf  -1.902  0.2332
##  15 castlemart - 32 castlemart  2.87e-01 0.1677 Inf   1.709  0.2982
##  15 castlemart - 33 castlemart  2.05e-01 0.1627 Inf   1.260  0.4768
##  15 castlemart - 34 castlemart -2.70e-01 0.1607 Inf  -1.679  0.3099
##  15 castlemart - 35 castlemart -2.16e-02 0.1680 Inf  -0.129  0.9585
##  15 castlemart - 36 castlemart -2.78e-01 0.1646 Inf  -1.689  0.3059
##  15 castlemart - 37 castlemart  1.02e-01 0.1686 Inf   0.607  0.7661
##  15 castlemart - 38 castlemart  1.17e-02 0.1644 Inf   0.071  0.9766
##  15 castlemart - 39 castlemart -3.77e-02 0.1793 Inf  -0.210  0.9297
##  15 castlemart - 41 castlemart -4.09e-02 0.1637 Inf  -0.250  0.9131
##  15 castlemart - 42 castlemart -1.55e-01 0.1648 Inf  -0.938  0.6194
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##  15 castlemart - 43 castlemart  7.68e-02 0.1647 Inf   0.466  0.8277
##  15 castlemart - 44 castlemart -4.39e-01 0.1665 Inf  -2.635  0.0781
##  15 castlemart - 45 castlemart -1.08e-01 0.1631 Inf  -0.659  0.7417
##  15 castlemart - 46 castlemart -2.44e-01 0.1635 Inf  -1.492  0.3785
##  15 castlemart - 47 castlemart  2.35e-01 0.1630 Inf   1.441  0.3964
##  15 castlemart - 48 castlemart -4.83e-01 0.1630 Inf  -2.962  0.0415
##  15 castlemart - 49 castlemart -1.82e-01 0.1620 Inf  -1.123  0.5343
##  15 castlemart - 50 castlemart -5.61e-02 0.1651 Inf  -0.340  0.8796
##  15 castlemart - 51 castlemart -4.09e-01 0.1676 Inf  -2.440  0.1105
##  15 castlemart - 52 castlemart -2.56e-01 0.1584 Inf  -1.617  0.3314
##  15 castlemart - 53 castlemart -1.07e-01 0.1582 Inf  -0.676  0.7348
##  15 castlemart - 54 castlemart -2.31e-01 0.1603 Inf  -1.439  0.3967
##  15 castlemart - 55 castlemart -9.83e-02 0.1604 Inf  -0.612  0.7640
##  15 castlemart - 56 castlemart -1.53e-01 0.1701 Inf  -0.899  0.6345
##  15 castlemart - 57 castlemart -2.23e-01 0.1621 Inf  -1.376  0.4252
##  15 castlemart - 58 castlemart -2.79e-01 0.1572 Inf  -1.776  0.2737
##  15 castlemart - 59 castlemart  7.09e-02 0.1681 Inf   0.422  0.8468
##  15 castlemart - 60 castlemart -3.51e-02 0.1606 Inf  -0.219  0.9267
##  15 castlemart - 61 castlemart -2.99e-01 0.1600 Inf  -1.866  0.2438
##  15 castlemart - 1 def1         1.21e-01 0.1600 Inf   0.756  0.6995
##  15 castlemart - 2 def1        -1.21e-01 0.1595 Inf  -0.760  0.6995
##  15 castlemart - 3 def1        -1.42e-01 0.1657 Inf  -0.856  0.6560
##  15 castlemart - 4 def1        -2.61e-01 0.1688 Inf  -1.548  0.3583
##  15 castlemart - 5 def1        -3.57e-01 0.1636 Inf  -2.180  0.1570
##  15 castlemart - 6 def1        -1.85e-01 0.1634 Inf  -1.133  0.5314
##  15 castlemart - 7 def1        -1.93e-01 0.1664 Inf  -1.158  0.5199
##  15 castlemart - 8 def1         1.14e-01 0.1679 Inf   0.678  0.7333
##  15 castlemart - 9 def1        -3.64e-01 0.1662 Inf  -2.192  0.1550
##  15 castlemart - 10 def1       -1.80e-01 0.1683 Inf  -1.067  0.5566
##  15 castlemart - 11 def1       -3.21e-01 0.1645 Inf  -1.950  0.2209
##  15 castlemart - 12 def1       -2.38e-01 0.1647 Inf  -1.447  0.3937
##  15 castlemart - 13 def1       -1.58e-01 0.1647 Inf  -0.957  0.6102
##  15 castlemart - 14 def1       -5.06e-01 0.1653 Inf  -3.060  0.0340
##  15 castlemart - 15 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  15 castlemart - 16 def1       -2.30e-02 0.1612 Inf  -0.143  0.9536
##  15 castlemart - 17 def1       -1.20e-01 0.1627 Inf  -0.739  0.7067
##  15 castlemart - 18 def1       -9.70e-02 0.1698 Inf  -0.571  0.7828
##  15 castlemart - 19 def1        4.75e-01 0.1880 Inf   2.527  0.0952
##  15 castlemart - 20 def1       -4.43e-02 0.1690 Inf  -0.262  0.9085
##  15 castlemart - 22 def1       -2.68e-01 0.1651 Inf  -1.623  0.3305
##  15 castlemart - 23 def1        1.77e-01 0.1789 Inf   0.987  0.5946
##  15 castlemart - 24 def1       -1.84e-01 0.1697 Inf  -1.082  0.5495
##  15 castlemart - 25 def1       -8.46e-02 0.1698 Inf  -0.498  0.8155
##  15 castlemart - 26 def1       -1.88e-01 0.1694 Inf  -1.110  0.5391
##  15 castlemart - 27 def1       -3.02e-01 0.1698 Inf  -1.777  0.2737
##  15 castlemart - 28 def1       -1.99e-01 0.1646 Inf  -1.209  0.4976
##  15 castlemart - 29 def1       -4.18e-03 0.1655 Inf  -0.025  0.9908
##  15 castlemart - 30 def1       -3.07e-02 0.1656 Inf  -0.185  0.9373
##  15 castlemart - 31 def1       -3.67e-01 0.1601 Inf  -2.290  0.1318
##  15 castlemart - 32 def1        2.20e-01 0.1701 Inf   1.292  0.4622
##  15 castlemart - 33 def1        1.38e-01 0.1649 Inf   0.838  0.6628
##  15 castlemart - 34 def1       -3.37e-01 0.1630 Inf  -2.067  0.1871
##  15 castlemart - 35 def1       -8.85e-02 0.1702 Inf  -0.520  0.8066
##  15 castlemart - 36 def1       -3.45e-01 0.1671 Inf  -2.065  0.1878
##  15 castlemart - 37 def1        3.55e-02 0.1707 Inf   0.208  0.9301
##  15 castlemart - 38 def1       -5.52e-02 0.1662 Inf  -0.332  0.8816
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##  15 castlemart - 39 def1       -1.05e-01 0.1813 Inf  -0.577  0.7795
##  15 castlemart - 41 def1       -1.08e-01 0.1659 Inf  -0.650  0.7458
##  15 castlemart - 42 def1       -2.21e-01 0.1674 Inf  -1.323  0.4479
##  15 castlemart - 43 def1        9.87e-03 0.1669 Inf   0.059  0.9801
##  15 castlemart - 44 def1       -5.06e-01 0.1686 Inf  -2.999  0.0384
##  15 castlemart - 45 def1       -1.74e-01 0.1651 Inf  -1.056  0.5605
##  15 castlemart - 46 def1       -3.11e-01 0.1664 Inf  -1.868  0.2430
##  15 castlemart - 47 def1        1.68e-01 0.1651 Inf   1.017  0.5785
##  15 castlemart - 48 def1       -5.50e-01 0.1651 Inf  -3.328  0.0198
##  15 castlemart - 49 def1       -2.49e-01 0.1645 Inf  -1.513  0.3704
##  15 castlemart - 50 def1       -1.23e-01 0.1670 Inf  -0.736  0.7072
##  15 castlemart - 51 def1       -4.76e-01 0.1695 Inf  -2.807  0.0569
##  15 castlemart - 52 def1       -3.23e-01 0.1607 Inf  -2.010  0.2022
##  15 castlemart - 53 def1       -1.74e-01 0.1608 Inf  -1.081  0.5495
##  15 castlemart - 54 def1       -2.98e-01 0.1628 Inf  -1.828  0.2571
##  15 castlemart - 55 def1       -1.65e-01 0.1628 Inf  -1.015  0.5796
##  15 castlemart - 56 def1       -2.20e-01 0.1723 Inf  -1.275  0.4697
##  15 castlemart - 57 def1       -2.90e-01 0.1644 Inf  -1.764  0.2780
##  15 castlemart - 58 def1       -3.46e-01 0.1596 Inf  -2.168  0.1605
##  15 castlemart - 59 def1        4.03e-03 0.1702 Inf   0.024  0.9919
##  15 castlemart - 60 def1       -1.02e-01 0.1626 Inf  -0.627  0.7586
##  15 castlemart - 61 def1       -3.65e-01 0.1623 Inf  -2.252  0.1408
##  16 castlemart - 17 castlemart -9.72e-02 0.1581 Inf  -0.615  0.7635
##  16 castlemart - 18 castlemart -7.40e-02 0.1607 Inf  -0.461  0.8291
##  16 castlemart - 19 castlemart  4.98e-01 0.1802 Inf   2.764  0.0622
##  16 castlemart - 20 castlemart -2.13e-02 0.1565 Inf  -0.136  0.9561
##  16 castlemart - 22 castlemart -2.45e-01 0.1522 Inf  -1.610  0.3347
##  16 castlemart - 23 castlemart  2.00e-01 0.1674 Inf   1.192  0.5039
##  16 castlemart - 24 castlemart -1.61e-01 0.1571 Inf  -1.022  0.5757
##  16 castlemart - 25 castlemart -6.16e-02 0.1604 Inf  -0.384  0.8615
##  16 castlemart - 26 castlemart -1.65e-01 0.1575 Inf  -1.048  0.5647
##  16 castlemart - 27 castlemart -2.79e-01 0.1594 Inf  -1.749  0.2843
##  16 castlemart - 28 castlemart -1.76e-01 0.1584 Inf  -1.110  0.5391
##  16 castlemart - 29 castlemart  1.88e-02 0.1583 Inf   0.119  0.9609
##  16 castlemart - 30 castlemart -7.66e-03 0.1597 Inf  -0.048  0.9821
##  16 castlemart - 31 castlemart -3.44e-01 0.1491 Inf  -2.305  0.1289
##  16 castlemart - 32 castlemart  2.43e-01 0.1591 Inf   1.525  0.3659
##  16 castlemart - 33 castlemart  1.61e-01 0.1576 Inf   1.022  0.5757
##  16 castlemart - 34 castlemart -3.14e-01 0.1546 Inf  -2.030  0.1968
##  16 castlemart - 35 castlemart -6.55e-02 0.1608 Inf  -0.407  0.8514
##  16 castlemart - 36 castlemart -3.22e-01 0.1583 Inf  -2.033  0.1956
##  16 castlemart - 37 castlemart  5.85e-02 0.1650 Inf   0.355  0.8750
##  16 castlemart - 38 castlemart -3.22e-02 0.1583 Inf  -0.203  0.9312
##  16 castlemart - 39 castlemart -8.16e-02 0.1747 Inf  -0.467  0.8276
##  16 castlemart - 41 castlemart -8.47e-02 0.1585 Inf  -0.535  0.8004
##  16 castlemart - 42 castlemart -1.98e-01 0.1586 Inf  -1.251  0.4802
##  16 castlemart - 43 castlemart  3.29e-02 0.1552 Inf   0.212  0.9288
##  16 castlemart - 44 castlemart -4.83e-01 0.1574 Inf  -3.066  0.0338
##  16 castlemart - 45 castlemart -1.51e-01 0.1540 Inf  -0.983  0.5964
##  16 castlemart - 46 castlemart -2.88e-01 0.1588 Inf  -1.813  0.2608
##  16 castlemart - 47 castlemart  1.91e-01 0.1552 Inf   1.231  0.4877
##  16 castlemart - 48 castlemart -5.27e-01 0.1583 Inf  -3.327  0.0198
##  16 castlemart - 49 castlemart -2.26e-01 0.1553 Inf  -1.455  0.3928
##  16 castlemart - 50 castlemart -1.00e-01 0.1572 Inf  -0.636  0.7540
##  16 castlemart - 51 castlemart -4.53e-01 0.1587 Inf  -2.853  0.0522
##  16 castlemart - 52 castlemart -3.00e-01 0.1590 Inf  -1.887  0.2374
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##  16 castlemart - 53 castlemart -1.51e-01 0.1563 Inf  -0.964  0.6047
##  16 castlemart - 54 castlemart -2.75e-01 0.1537 Inf  -1.786  0.2712
##  16 castlemart - 55 castlemart -1.42e-01 0.1546 Inf  -0.919  0.6242
##  16 castlemart - 56 castlemart -1.97e-01 0.1615 Inf  -1.218  0.4928
##  16 castlemart - 57 castlemart -2.67e-01 0.1587 Inf  -1.681  0.3096
##  16 castlemart - 58 castlemart -3.23e-01 0.1569 Inf  -2.060  0.1892
##  16 castlemart - 59 castlemart  2.70e-02 0.1617 Inf   0.167  0.9448
##  16 castlemart - 60 castlemart -7.90e-02 0.1541 Inf  -0.512  0.8076
##  16 castlemart - 61 castlemart -3.42e-01 0.1562 Inf  -2.192  0.1550
##  16 castlemart - 1 def1         7.71e-02 0.1553 Inf   0.496  0.8168
##  16 castlemart - 2 def1        -1.65e-01 0.1529 Inf  -1.079  0.5502
##  16 castlemart - 3 def1        -1.86e-01 0.1566 Inf  -1.186  0.5074
##  16 castlemart - 4 def1        -3.05e-01 0.1614 Inf  -1.891  0.2366
##  16 castlemart - 5 def1        -4.01e-01 0.1576 Inf  -2.542  0.0923
##  16 castlemart - 6 def1        -2.29e-01 0.1598 Inf  -1.433  0.3990
##  16 castlemart - 7 def1        -2.37e-01 0.1591 Inf  -1.487  0.3795
##  16 castlemart - 8 def1         7.00e-02 0.1633 Inf   0.428  0.8436
##  16 castlemart - 9 def1        -4.08e-01 0.1636 Inf  -2.495  0.1005
##  16 castlemart - 10 def1       -2.24e-01 0.1695 Inf  -1.319  0.4498
##  16 castlemart - 11 def1       -3.65e-01 0.1600 Inf  -2.278  0.1344
##  16 castlemart - 12 def1       -2.82e-01 0.1585 Inf  -1.781  0.2727
##  16 castlemart - 13 def1       -2.01e-01 0.1596 Inf  -1.262  0.4760
##  16 castlemart - 14 def1       -5.50e-01 0.1594 Inf  -3.449  0.0149
##  16 castlemart - 15 def1       -1.11e-01 0.1610 Inf  -0.688  0.7287
##  16 castlemart - 16 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  16 castlemart - 17 def1       -1.64e-01 0.1603 Inf  -1.023  0.5757
##  16 castlemart - 18 def1       -1.41e-01 0.1627 Inf  -0.866  0.6523
##  16 castlemart - 19 def1        4.31e-01 0.1824 Inf   2.365  0.1243
##  16 castlemart - 20 def1       -8.82e-02 0.1594 Inf  -0.553  0.7901
##  16 castlemart - 22 def1       -3.12e-01 0.1548 Inf  -2.014  0.2015
##  16 castlemart - 23 def1        1.33e-01 0.1702 Inf   0.779  0.6885
##  16 castlemart - 24 def1       -2.27e-01 0.1595 Inf  -1.426  0.4021
##  16 castlemart - 25 def1       -1.29e-01 0.1629 Inf  -0.789  0.6843
##  16 castlemart - 26 def1       -2.32e-01 0.1598 Inf  -1.452  0.3928
##  16 castlemart - 27 def1       -3.46e-01 0.1617 Inf  -2.138  0.1674
##  16 castlemart - 28 def1       -2.43e-01 0.1610 Inf  -1.508  0.3722
##  16 castlemart - 29 def1       -4.81e-02 0.1603 Inf  -0.300  0.8942
##  16 castlemart - 30 def1       -7.46e-02 0.1620 Inf  -0.460  0.8291
##  16 castlemart - 31 def1       -4.10e-01 0.1516 Inf  -2.707  0.0673
##  16 castlemart - 32 def1        1.76e-01 0.1616 Inf   1.088  0.5467
##  16 castlemart - 33 def1        9.43e-02 0.1598 Inf   0.590  0.7727
##  16 castlemart - 34 def1       -3.81e-01 0.1568 Inf  -2.428  0.1126
##  16 castlemart - 35 def1       -1.32e-01 0.1630 Inf  -0.812  0.6742
##  16 castlemart - 36 def1       -3.89e-01 0.1608 Inf  -2.418  0.1142
##  16 castlemart - 37 def1       -8.39e-03 0.1671 Inf  -0.050  0.9821
##  16 castlemart - 38 def1       -9.90e-02 0.1601 Inf  -0.619  0.7615
##  16 castlemart - 39 def1       -1.48e-01 0.1766 Inf  -0.841  0.6614
##  16 castlemart - 41 def1       -1.52e-01 0.1607 Inf  -0.944  0.6169
##  16 castlemart - 42 def1       -2.65e-01 0.1611 Inf  -1.646  0.3222
##  16 castlemart - 43 def1       -3.40e-02 0.1575 Inf  -0.216  0.9278
##  16 castlemart - 44 def1       -5.50e-01 0.1595 Inf  -3.444  0.0151
##  16 castlemart - 45 def1       -2.18e-01 0.1561 Inf  -1.399  0.4147
##  16 castlemart - 46 def1       -3.55e-01 0.1616 Inf  -2.195  0.1542
##  16 castlemart - 47 def1        1.24e-01 0.1573 Inf   0.789  0.6843
##  16 castlemart - 48 def1       -5.94e-01 0.1604 Inf  -3.699  0.0082
##  16 castlemart - 49 def1       -2.93e-01 0.1578 Inf  -1.856  0.2462
```

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##  16 castlemart - 50 def1       -1.67e-01 0.1592 Inf  -1.048  0.5647
##  16 castlemart - 51 def1       -5.20e-01 0.1606 Inf  -3.237  0.0249
##  16 castlemart - 52 def1       -3.67e-01 0.1613 Inf  -2.276  0.1353
##  16 castlemart - 53 def1       -2.18e-01 0.1588 Inf  -1.370  0.4278
##  16 castlemart - 54 def1       -3.41e-01 0.1562 Inf  -2.186  0.1559
##  16 castlemart - 55 def1       -2.09e-01 0.1569 Inf  -1.332  0.4450
##  16 castlemart - 56 def1       -2.64e-01 0.1638 Inf  -1.610  0.3347
##  16 castlemart - 57 def1       -3.34e-01 0.1610 Inf  -2.073  0.1854
##  16 castlemart - 58 def1       -3.90e-01 0.1592 Inf  -2.450  0.1088
##  16 castlemart - 59 def1       -3.98e-02 0.1638 Inf  -0.243  0.9153
##  16 castlemart - 60 def1       -1.46e-01 0.1561 Inf  -0.934  0.6201
##  16 castlemart - 61 def1       -4.09e-01 0.1584 Inf  -2.584  0.0856
##  17 castlemart - 18 castlemart  2.32e-02 0.1672 Inf   0.139  0.9556
##  17 castlemart - 19 castlemart  5.95e-01 0.1853 Inf   3.212  0.0260
##  17 castlemart - 20 castlemart  7.58e-02 0.1631 Inf   0.465  0.8279
##  17 castlemart - 22 castlemart -1.48e-01 0.1629 Inf  -0.908  0.6319
##  17 castlemart - 23 castlemart  2.97e-01 0.1771 Inf   1.675  0.3115
##  17 castlemart - 24 castlemart -6.34e-02 0.1671 Inf  -0.380  0.8628
##  17 castlemart - 25 castlemart  3.55e-02 0.1676 Inf   0.212  0.9288
##  17 castlemart - 26 castlemart -6.79e-02 0.1643 Inf  -0.414  0.8495
##  17 castlemart - 27 castlemart -1.82e-01 0.1669 Inf  -1.089  0.5465
##  17 castlemart - 28 castlemart -7.88e-02 0.1638 Inf  -0.481  0.8236
##  17 castlemart - 29 castlemart  1.16e-01 0.1632 Inf   0.711  0.7201
##  17 castlemart - 30 castlemart  8.95e-02 0.1653 Inf   0.541  0.7970
##  17 castlemart - 31 castlemart -2.46e-01 0.1579 Inf  -1.561  0.3537
##  17 castlemart - 32 castlemart  3.40e-01 0.1657 Inf   2.052  0.1917
##  17 castlemart - 33 castlemart  2.58e-01 0.1615 Inf   1.599  0.3384
##  17 castlemart - 34 castlemart -2.17e-01 0.1613 Inf  -1.343  0.4397
##  17 castlemart - 35 castlemart  3.17e-02 0.1681 Inf   0.188  0.9369
##  17 castlemart - 36 castlemart -2.25e-01 0.1647 Inf  -1.365  0.4301
##  17 castlemart - 37 castlemart  1.56e-01 0.1683 Inf   0.925  0.6229
##  17 castlemart - 38 castlemart  6.50e-02 0.1628 Inf   0.399  0.8538
##  17 castlemart - 39 castlemart  1.55e-02 0.1771 Inf   0.088  0.9738
##  17 castlemart - 41 castlemart  1.24e-02 0.1590 Inf   0.078  0.9751
##  17 castlemart - 42 castlemart -1.01e-01 0.1636 Inf  -0.619  0.7615
##  17 castlemart - 43 castlemart  1.30e-01 0.1639 Inf   0.793  0.6822
##  17 castlemart - 44 castlemart -3.85e-01 0.1664 Inf  -2.317  0.1278
##  17 castlemart - 45 castlemart -5.42e-02 0.1634 Inf  -0.332  0.8816
##  17 castlemart - 46 castlemart -1.91e-01 0.1649 Inf  -1.157  0.5200
##  17 castlemart - 47 castlemart  2.88e-01 0.1615 Inf   1.784  0.2715
##  17 castlemart - 48 castlemart -4.29e-01 0.1582 Inf  -2.715  0.0666
##  17 castlemart - 49 castlemart -1.29e-01 0.1605 Inf  -0.802  0.6782
##  17 castlemart - 50 castlemart -2.81e-03 0.1623 Inf  -0.017  0.9939
##  17 castlemart - 51 castlemart -3.56e-01 0.1665 Inf  -2.137  0.1675
##  17 castlemart - 52 castlemart -2.03e-01 0.1615 Inf  -1.257  0.4781
##  17 castlemart - 53 castlemart -5.36e-02 0.1612 Inf  -0.333  0.8816
##  17 castlemart - 54 castlemart -1.77e-01 0.1585 Inf  -1.119  0.5355
##  17 castlemart - 55 castlemart -4.50e-02 0.1576 Inf  -0.285  0.8984
##  17 castlemart - 56 castlemart -9.96e-02 0.1699 Inf  -0.586  0.7736
##  17 castlemart - 57 castlemart -1.70e-01 0.1600 Inf  -1.061  0.5591
##  17 castlemart - 58 castlemart -2.26e-01 0.1616 Inf  -1.398  0.4149
##  17 castlemart - 59 castlemart  1.24e-01 0.1685 Inf   0.737  0.7068
##  17 castlemart - 60 castlemart  1.82e-02 0.1624 Inf   0.112  0.9631
##  17 castlemart - 61 castlemart -2.45e-01 0.1616 Inf  -1.518  0.3687
##  17 castlemart - 1 def1         1.74e-01 0.1578 Inf   1.104  0.5413
##  17 castlemart - 2 def1        -6.79e-02 0.1584 Inf  -0.428  0.8436
```

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##  17 castlemart - 3 def1       -8.86e-02 0.1630 Inf  -0.543  0.7959
##  17 castlemart - 4 def1       -2.08e-01 0.1675 Inf  -1.242  0.4832
##  17 castlemart - 5 def1       -3.04e-01 0.1646 Inf  -1.844  0.2511
##  17 castlemart - 6 def1       -1.32e-01 0.1616 Inf  -0.816  0.6730
##  17 castlemart - 7 def1       -1.39e-01 0.1671 Inf  -0.834  0.6645
##  17 castlemart - 8 def1        1.67e-01 0.1673 Inf   0.999  0.5884
##  17 castlemart - 9 def1       -3.11e-01 0.1690 Inf  -1.840  0.2525
##  17 castlemart - 10 def1      -1.26e-01 0.1723 Inf  -0.733  0.7083
##  17 castlemart - 11 def1      -2.67e-01 0.1661 Inf  -1.610  0.3347
##  17 castlemart - 12 def1      -1.85e-01 0.1601 Inf  -1.155  0.5208
##  17 castlemart - 13 def1      -1.04e-01 0.1658 Inf  -0.629  0.7580
##  17 castlemart - 14 def1      -4.53e-01 0.1609 Inf  -2.813  0.0561
##  17 castlemart - 15 def1      -1.36e-02 0.1633 Inf  -0.083  0.9741
##  17 castlemart - 16 def1       3.03e-02 0.1611 Inf   0.188  0.9369
##  17 castlemart - 17 def1      -6.69e-02 0.0289 Inf  -2.318  0.1278
##  17 castlemart - 18 def1      -4.37e-02 0.1695 Inf  -0.258  0.9100
##  17 castlemart - 19 def1       5.28e-01 0.1877 Inf   2.814  0.0561
##  17 castlemart - 20 def1       8.94e-03 0.1662 Inf   0.054  0.9814
##  17 castlemart - 22 def1      -2.15e-01 0.1657 Inf  -1.296  0.4605
##  17 castlemart - 23 def1       2.30e-01 0.1801 Inf   1.276  0.4697
##  17 castlemart - 24 def1      -1.30e-01 0.1697 Inf  -0.768  0.6941
##  17 castlemart - 25 def1      -3.14e-02 0.1704 Inf  -0.184  0.9373
##  17 castlemart - 26 def1      -1.35e-01 0.1668 Inf  -0.808  0.6757
##  17 castlemart - 27 def1      -2.49e-01 0.1694 Inf  -1.467  0.3887
##  17 castlemart - 28 def1      -1.46e-01 0.1666 Inf  -0.874  0.6480
##  17 castlemart - 29 def1       4.91e-02 0.1655 Inf   0.297  0.8955
##  17 castlemart - 30 def1       2.26e-02 0.1678 Inf   0.135  0.9561
##  17 castlemart - 31 def1      -3.13e-01 0.1607 Inf  -1.950  0.2209
##  17 castlemart - 32 def1       2.73e-01 0.1683 Inf   1.622  0.3307
##  17 castlemart - 33 def1       1.91e-01 0.1640 Inf   1.167  0.5158
##  17 castlemart - 34 def1      -2.84e-01 0.1638 Inf  -1.731  0.2908
##  17 castlemart - 35 def1      -3.52e-02 0.1706 Inf  -0.206  0.9308
##  17 castlemart - 36 def1      -2.92e-01 0.1674 Inf  -1.742  0.2867
##  17 castlemart - 37 def1       8.88e-02 0.1707 Inf   0.520  0.8066
##  17 castlemart - 38 def1      -1.89e-03 0.1649 Inf  -0.011  0.9958
##  17 castlemart - 39 def1      -5.13e-02 0.1793 Inf  -0.286  0.8984
##  17 castlemart - 41 def1      -5.45e-02 0.1615 Inf  -0.337  0.8802
##  17 castlemart - 42 def1      -1.68e-01 0.1665 Inf  -1.010  0.5814
##  17 castlemart - 43 def1       6.32e-02 0.1664 Inf   0.379  0.8628
##  17 castlemart - 44 def1      -4.52e-01 0.1688 Inf  -2.680  0.0710
##  17 castlemart - 45 def1      -1.21e-01 0.1657 Inf  -0.731  0.7098
##  17 castlemart - 46 def1      -2.58e-01 0.1680 Inf  -1.534  0.3638
##  17 castlemart - 47 def1       2.21e-01 0.1639 Inf   1.350  0.4366
##  17 castlemart - 48 def1      -4.96e-01 0.1608 Inf  -3.088  0.0325
##  17 castlemart - 49 def1      -1.96e-01 0.1633 Inf  -1.198  0.5015
##  17 castlemart - 50 def1      -6.97e-02 0.1645 Inf  -0.424  0.8463
##  17 castlemart - 51 def1      -4.23e-01 0.1686 Inf  -2.506  0.0983
##  17 castlemart - 52 def1      -2.70e-01 0.1640 Inf  -1.645  0.3226
##  17 castlemart - 53 def1      -1.21e-01 0.1640 Inf  -0.735  0.7081
##  17 castlemart - 54 def1      -2.44e-01 0.1613 Inf  -1.515  0.3698
##  17 castlemart - 55 def1      -1.12e-01 0.1602 Inf  -0.698  0.7237
##  17 castlemart - 56 def1      -1.67e-01 0.1724 Inf  -0.966  0.6041
##  17 castlemart - 57 def1      -2.37e-01 0.1626 Inf  -1.455  0.3928
##  17 castlemart - 58 def1      -2.93e-01 0.1642 Inf  -1.783  0.2720
##  17 castlemart - 59 def1       5.73e-02 0.1709 Inf   0.335  0.8813
##  17 castlemart - 60 def1      -4.87e-02 0.1647 Inf  -0.296  0.8960
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##  17 castlemart - 61 def1       -3.12e-01 0.1641 Inf  -1.903  0.2329
##  18 castlemart - 19 castlemart  5.72e-01 0.1826 Inf   3.132  0.0300
##  18 castlemart - 20 castlemart  5.27e-02 0.1704 Inf   0.309  0.8898
##  18 castlemart - 22 castlemart -1.71e-01 0.1660 Inf  -1.030  0.5736
##  18 castlemart - 23 castlemart  2.74e-01 0.1817 Inf   1.505  0.3732
##  18 castlemart - 24 castlemart -8.66e-02 0.1692 Inf  -0.512  0.8076
##  18 castlemart - 25 castlemart  1.24e-02 0.1671 Inf   0.074  0.9766
##  18 castlemart - 26 castlemart -9.11e-02 0.1707 Inf  -0.534  0.8009
##  18 castlemart - 27 castlemart -2.05e-01 0.1681 Inf  -1.219  0.4928
##  18 castlemart - 28 castlemart -1.02e-01 0.1699 Inf  -0.600  0.7691
##  18 castlemart - 29 castlemart  9.28e-02 0.1683 Inf   0.552  0.7908
##  18 castlemart - 30 castlemart  6.63e-02 0.1667 Inf   0.398  0.8541
##  18 castlemart - 31 castlemart -2.70e-01 0.1591 Inf  -1.694  0.3042
##  18 castlemart - 32 castlemart  3.17e-01 0.1683 Inf   1.882  0.2384
##  18 castlemart - 33 castlemart  2.35e-01 0.1671 Inf   1.407  0.4105
##  18 castlemart - 34 castlemart -2.40e-01 0.1655 Inf  -1.449  0.3929
##  18 castlemart - 35 castlemart  8.52e-03 0.1720 Inf   0.050  0.9821
##  18 castlemart - 36 castlemart -2.48e-01 0.1664 Inf  -1.490  0.3788
##  18 castlemart - 37 castlemart  1.32e-01 0.1717 Inf   0.771  0.6918
##  18 castlemart - 38 castlemart  4.18e-02 0.1649 Inf   0.254  0.9117
##  18 castlemart - 39 castlemart -7.62e-03 0.1829 Inf  -0.042  0.9846
##  18 castlemart - 41 castlemart -1.07e-02 0.1660 Inf  -0.065  0.9784
##  18 castlemart - 42 castlemart -1.24e-01 0.1656 Inf  -0.751  0.7006
##  18 castlemart - 43 castlemart  1.07e-01 0.1615 Inf   0.662  0.7410
##  18 castlemart - 44 castlemart -4.09e-01 0.1681 Inf  -2.431  0.1120
##  18 castlemart - 45 castlemart -7.74e-02 0.1651 Inf  -0.469  0.8276
##  18 castlemart - 46 castlemart -2.14e-01 0.1689 Inf  -1.266  0.4740
##  18 castlemart - 47 castlemart  2.65e-01 0.1651 Inf   1.605  0.3363
##  18 castlemart - 48 castlemart -4.53e-01 0.1654 Inf  -2.736  0.0646
##  18 castlemart - 49 castlemart -1.52e-01 0.1669 Inf  -0.910  0.6306
##  18 castlemart - 50 castlemart -2.60e-02 0.1685 Inf  -0.154  0.9509
##  18 castlemart - 51 castlemart -3.79e-01 0.1707 Inf  -2.219  0.1483
##  18 castlemart - 52 castlemart -2.26e-01 0.1669 Inf  -1.355  0.4351
##  18 castlemart - 53 castlemart -7.68e-02 0.1629 Inf  -0.471  0.8276
##  18 castlemart - 54 castlemart -2.01e-01 0.1636 Inf  -1.226  0.4897
##  18 castlemart - 55 castlemart -6.81e-02 0.1648 Inf  -0.413  0.8495
##  18 castlemart - 56 castlemart -1.23e-01 0.1703 Inf  -0.721  0.7157
##  18 castlemart - 57 castlemart -1.93e-01 0.1656 Inf  -1.165  0.5165
##  18 castlemart - 58 castlemart -2.49e-01 0.1657 Inf  -1.503  0.3740
##  18 castlemart - 59 castlemart  1.01e-01 0.1689 Inf   0.598  0.7691
##  18 castlemart - 60 castlemart -4.98e-03 0.1667 Inf  -0.030  0.9895
##  18 castlemart - 61 castlemart -2.68e-01 0.1678 Inf  -1.600  0.3384
##  18 castlemart - 1 def1         1.51e-01 0.1641 Inf   0.920  0.6241
##  18 castlemart - 2 def1        -9.10e-02 0.1635 Inf  -0.557  0.7897
##  18 castlemart - 3 def1        -1.12e-01 0.1692 Inf  -0.660  0.7410
##  18 castlemart - 4 def1        -2.31e-01 0.1701 Inf  -1.359  0.4331
##  18 castlemart - 5 def1        -3.27e-01 0.1679 Inf  -1.946  0.2222
##  18 castlemart - 6 def1        -1.55e-01 0.1687 Inf  -0.919  0.6242
##  18 castlemart - 7 def1        -1.63e-01 0.1708 Inf  -0.951  0.6131
##  18 castlemart - 8 def1         1.44e-01 0.1694 Inf   0.850  0.6576
##  18 castlemart - 9 def1        -3.34e-01 0.1730 Inf  -1.932  0.2256
##  18 castlemart - 10 def1       -1.50e-01 0.1787 Inf  -0.837  0.6630
##  18 castlemart - 11 def1       -2.91e-01 0.1679 Inf  -1.731  0.2908
##  18 castlemart - 12 def1       -2.08e-01 0.1685 Inf  -1.236  0.4850
##  18 castlemart - 13 def1       -1.27e-01 0.1694 Inf  -0.752  0.7005
##  18 castlemart - 14 def1       -4.76e-01 0.1665 Inf  -2.858  0.0516
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##  18 castlemart - 15 def1       -3.68e-02 0.1707 Inf  -0.215  0.9278
##  18 castlemart - 16 def1        7.10e-03 0.1638 Inf   0.043  0.9838
##  18 castlemart - 17 def1       -9.01e-02 0.1699 Inf  -0.530  0.8013
##  18 castlemart - 18 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  18 castlemart - 19 def1        5.05e-01 0.1852 Inf   2.728  0.0651
##  18 castlemart - 20 def1       -1.42e-02 0.1736 Inf  -0.082  0.9744
##  18 castlemart - 22 def1       -2.38e-01 0.1690 Inf  -1.408  0.4104
##  18 castlemart - 23 def1        2.07e-01 0.1848 Inf   1.118  0.5359
##  18 castlemart - 24 def1       -1.53e-01 0.1720 Inf  -0.893  0.6371
##  18 castlemart - 25 def1       -5.45e-02 0.1700 Inf  -0.321  0.8852
##  18 castlemart - 26 def1       -1.58e-01 0.1733 Inf  -0.911  0.6300
##  18 castlemart - 27 def1       -2.72e-01 0.1707 Inf  -1.592  0.3413
##  18 castlemart - 28 def1       -1.69e-01 0.1728 Inf  -0.977  0.5978
##  18 castlemart - 29 def1        2.59e-02 0.1707 Inf   0.152  0.9517
##  18 castlemart - 30 def1       -5.61e-04 0.1694 Inf  -0.003  0.9982
##  18 castlemart - 31 def1       -3.36e-01 0.1621 Inf  -2.076  0.1847
##  18 castlemart - 32 def1        2.50e-01 0.1711 Inf   1.460  0.3916
##  18 castlemart - 33 def1        1.68e-01 0.1697 Inf   0.991  0.5924
##  18 castlemart - 34 def1       -3.07e-01 0.1681 Inf  -1.825  0.2584
##  18 castlemart - 35 def1       -5.84e-02 0.1746 Inf  -0.334  0.8816
##  18 castlemart - 36 def1       -3.15e-01 0.1693 Inf  -1.860  0.2455
##  18 castlemart - 37 def1        6.56e-02 0.1743 Inf   0.376  0.8648
##  18 castlemart - 38 def1       -2.51e-02 0.1671 Inf  -0.150  0.9523
##  18 castlemart - 39 def1       -7.45e-02 0.1852 Inf  -0.402  0.8528
##  18 castlemart - 41 def1       -7.76e-02 0.1686 Inf  -0.460  0.8291
##  18 castlemart - 42 def1       -1.91e-01 0.1686 Inf  -1.134  0.5314
##  18 castlemart - 43 def1        4.00e-02 0.1642 Inf   0.243  0.9153
##  18 castlemart - 44 def1       -4.76e-01 0.1706 Inf  -2.787  0.0594
##  18 castlemart - 45 def1       -1.44e-01 0.1675 Inf  -0.861  0.6530
##  18 castlemart - 46 def1       -2.81e-01 0.1721 Inf  -1.632  0.3274
##  18 castlemart - 47 def1        1.98e-01 0.1676 Inf   1.182  0.5091
##  18 castlemart - 48 def1       -5.20e-01 0.1680 Inf  -3.092  0.0321
##  18 castlemart - 49 def1       -2.19e-01 0.1697 Inf  -1.289  0.4636
##  18 castlemart - 50 def1       -9.29e-02 0.1708 Inf  -0.544  0.7959
##  18 castlemart - 51 def1       -4.46e-01 0.1729 Inf  -2.577  0.0865
##  18 castlemart - 52 def1       -2.93e-01 0.1695 Inf  -1.728  0.2913
##  18 castlemart - 53 def1       -1.44e-01 0.1659 Inf  -0.866  0.6523
##  18 castlemart - 54 def1       -2.67e-01 0.1664 Inf  -1.607  0.3353
##  18 castlemart - 55 def1       -1.35e-01 0.1675 Inf  -0.806  0.6769
##  18 castlemart - 56 def1       -1.90e-01 0.1730 Inf  -1.097  0.5447
##  18 castlemart - 57 def1       -2.60e-01 0.1683 Inf  -1.544  0.3596
##  18 castlemart - 58 def1       -3.16e-01 0.1684 Inf  -1.876  0.2405
##  18 castlemart - 59 def1        3.41e-02 0.1715 Inf   0.199  0.9322
##  18 castlemart - 60 def1       -7.19e-02 0.1691 Inf  -0.425  0.8457
##  18 castlemart - 61 def1       -3.35e-01 0.1704 Inf  -1.968  0.2147
##  19 castlemart - 20 castlemart -5.19e-01 0.1880 Inf  -2.763  0.0622
##  19 castlemart - 22 castlemart -7.43e-01 0.1839 Inf  -4.040  0.0034
##  19 castlemart - 23 castlemart -2.99e-01 0.1981 Inf  -1.507  0.3725
##  19 castlemart - 24 castlemart -6.59e-01 0.1877 Inf  -3.509  0.0134
##  19 castlemart - 25 castlemart -5.60e-01 0.1832 Inf  -3.055  0.0342
##  19 castlemart - 26 castlemart -6.63e-01 0.1883 Inf  -3.521  0.0130
##  19 castlemart - 27 castlemart -7.77e-01 0.1884 Inf  -4.124  0.0026
##  19 castlemart - 28 castlemart -6.74e-01 0.1879 Inf  -3.587  0.0114
##  19 castlemart - 29 castlemart -4.79e-01 0.1858 Inf  -2.580  0.0864
##  19 castlemart - 30 castlemart -5.06e-01 0.1824 Inf  -2.773  0.0608
##  19 castlemart - 31 castlemart -8.42e-01 0.1793 Inf  -4.695  0.0007
```

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##  19 castlemart - 32 castlemart -2.55e-01 0.1860 Inf  -1.373  0.4263
##  19 castlemart - 33 castlemart -3.37e-01 0.1851 Inf  -1.820  0.2598
##  19 castlemart - 34 castlemart -8.12e-01 0.1834 Inf  -4.428  0.0011
##  19 castlemart - 35 castlemart -5.64e-01 0.1890 Inf  -2.981  0.0396
##  19 castlemart - 36 castlemart -8.20e-01 0.1840 Inf  -4.457  0.0011
##  19 castlemart - 37 castlemart -4.40e-01 0.1899 Inf  -2.314  0.1279
##  19 castlemart - 38 castlemart -5.30e-01 0.1823 Inf  -2.909  0.0459
##  19 castlemart - 39 castlemart -5.80e-01 0.1996 Inf  -2.904  0.0462
##  19 castlemart - 41 castlemart -5.83e-01 0.1852 Inf  -3.146  0.0293
##  19 castlemart - 42 castlemart -6.97e-01 0.1801 Inf  -3.868  0.0052
##  19 castlemart - 43 castlemart -4.65e-01 0.1826 Inf  -2.548  0.0915
##  19 castlemart - 44 castlemart -9.81e-01 0.1879 Inf  -5.218  0.0001
##  19 castlemart - 45 castlemart -6.49e-01 0.1827 Inf  -3.554  0.0123
##  19 castlemart - 46 castlemart -7.86e-01 0.1875 Inf  -4.192  0.0022
##  19 castlemart - 47 castlemart -3.07e-01 0.1851 Inf  -1.659  0.3177
##  19 castlemart - 48 castlemart -1.02e+00 0.1832 Inf  -5.594  <.0001
##  19 castlemart - 49 castlemart -7.24e-01 0.1852 Inf  -3.910  0.0050
##  19 castlemart - 50 castlemart -5.98e-01 0.1860 Inf  -3.216  0.0260
##  19 castlemart - 51 castlemart -9.51e-01 0.1844 Inf  -5.157  0.0001
##  19 castlemart - 52 castlemart -7.98e-01 0.1870 Inf  -4.268  0.0018
##  19 castlemart - 53 castlemart -6.49e-01 0.1829 Inf  -3.549  0.0123
##  19 castlemart - 54 castlemart -7.73e-01 0.1771 Inf  -4.362  0.0014
##  19 castlemart - 55 castlemart -6.40e-01 0.1830 Inf  -3.498  0.0136
##  19 castlemart - 56 castlemart -6.95e-01 0.1838 Inf  -3.781  0.0065
##  19 castlemart - 57 castlemart -7.65e-01 0.1835 Inf  -4.168  0.0023
##  19 castlemart - 58 castlemart -8.21e-01 0.1852 Inf  -4.433  0.0011
##  19 castlemart - 59 castlemart -4.71e-01 0.1904 Inf  -2.474  0.1041
##  19 castlemart - 60 castlemart -5.77e-01 0.1844 Inf  -3.130  0.0300
##  19 castlemart - 61 castlemart -8.41e-01 0.1855 Inf  -4.531  0.0010
##  19 castlemart - 1 def1        -4.21e-01 0.1818 Inf  -2.316  0.1278
##  19 castlemart - 2 def1        -6.63e-01 0.1812 Inf  -3.659  0.0092
##  19 castlemart - 3 def1        -6.84e-01 0.1817 Inf  -3.764  0.0068
##  19 castlemart - 4 def1        -8.03e-01 0.1874 Inf  -4.288  0.0017
##  19 castlemart - 5 def1        -8.99e-01 0.1865 Inf  -4.819  0.0005
##  19 castlemart - 6 def1        -7.27e-01 0.1878 Inf  -3.873  0.0052
##  19 castlemart - 7 def1        -7.35e-01 0.1880 Inf  -3.907  0.0050
##  19 castlemart - 8 def1        -4.28e-01 0.1873 Inf  -2.286  0.1327
##  19 castlemart - 9 def1        -9.06e-01 0.1861 Inf  -4.869  0.0005
##  19 castlemart - 10 def1       -7.22e-01 0.1957 Inf  -3.687  0.0086
##  19 castlemart - 11 def1       -8.63e-01 0.1858 Inf  -4.643  0.0007
##  19 castlemart - 12 def1       -7.80e-01 0.1860 Inf  -4.195  0.0022
##  19 castlemart - 13 def1       -7.00e-01 0.1828 Inf  -3.828  0.0058
##  19 castlemart - 14 def1       -1.05e+00 0.1874 Inf  -5.591  <.0001
##  19 castlemart - 15 def1       -6.09e-01 0.1882 Inf  -3.235  0.0250
##  19 castlemart - 16 def1       -5.65e-01 0.1827 Inf  -3.093  0.0321
##  19 castlemart - 17 def1       -6.62e-01 0.1874 Inf  -3.533  0.0128
##  19 castlemart - 18 def1       -6.39e-01 0.1846 Inf  -3.462  0.0146
##  19 castlemart - 19 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  19 castlemart - 20 def1       -5.86e-01 0.1906 Inf  -3.076  0.0333
##  19 castlemart - 22 def1       -8.10e-01 0.1863 Inf  -4.348  0.0015
##  19 castlemart - 23 def1       -3.65e-01 0.2007 Inf  -1.821  0.2595
##  19 castlemart - 24 def1       -7.26e-01 0.1899 Inf  -3.821  0.0059
##  19 castlemart - 25 def1       -6.27e-01 0.1856 Inf  -3.377  0.0176
##  19 castlemart - 26 def1       -7.30e-01 0.1904 Inf  -3.834  0.0057
##  19 castlemart - 27 def1       -8.44e-01 0.1905 Inf  -4.430  0.0011
##  19 castlemart - 28 def1       -7.41e-01 0.1902 Inf  -3.896  0.0050
```

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##  19 castlemart - 29 def1       -5.46e-01 0.1877 Inf  -2.910  0.0459
##  19 castlemart - 30 def1       -5.73e-01 0.1845 Inf  -3.103  0.0318
##  19 castlemart - 31 def1       -9.09e-01 0.1816 Inf  -5.004  0.0003
##  19 castlemart - 32 def1       -3.22e-01 0.1882 Inf  -1.712  0.2976
##  19 castlemart - 33 def1       -4.04e-01 0.1871 Inf  -2.158  0.1617
##  19 castlemart - 34 def1       -8.79e-01 0.1854 Inf  -4.740  0.0006
##  19 castlemart - 35 def1       -6.30e-01 0.1911 Inf  -3.299  0.0214
##  19 castlemart - 36 def1       -8.87e-01 0.1863 Inf  -4.761  0.0006
##  19 castlemart - 37 def1       -5.06e-01 0.1919 Inf  -2.639  0.0775
##  19 castlemart - 38 def1       -5.97e-01 0.1840 Inf  -3.245  0.0243
##  19 castlemart - 39 def1       -6.47e-01 0.2014 Inf  -3.210  0.0260
##  19 castlemart - 41 def1       -6.50e-01 0.1873 Inf  -3.469  0.0144
##  19 castlemart - 42 def1       -7.63e-01 0.1825 Inf  -4.183  0.0023
##  19 castlemart - 43 def1       -5.32e-01 0.1847 Inf  -2.881  0.0491
##  19 castlemart - 44 def1       -1.05e+00 0.1899 Inf  -5.516  <.0001
##  19 castlemart - 45 def1       -7.16e-01 0.1846 Inf  -3.881  0.0051
##  19 castlemart - 46 def1       -8.53e-01 0.1901 Inf  -4.487  0.0011
##  19 castlemart - 47 def1       -3.74e-01 0.1870 Inf  -1.999  0.2056
##  19 castlemart - 48 def1       -1.09e+00 0.1852 Inf  -5.894  <.0001
##  19 castlemart - 49 def1       -7.91e-01 0.1874 Inf  -4.220  0.0020
##  19 castlemart - 50 def1       -6.65e-01 0.1878 Inf  -3.541  0.0126
##  19 castlemart - 51 def1       -1.02e+00 0.1862 Inf  -5.467  0.0001
##  19 castlemart - 52 def1       -8.65e-01 0.1890 Inf  -4.576  0.0009
##  19 castlemart - 53 def1       -7.16e-01 0.1852 Inf  -3.865  0.0052
##  19 castlemart - 54 def1       -8.40e-01 0.1794 Inf  -4.679  0.0007
##  19 castlemart - 55 def1       -7.07e-01 0.1852 Inf  -3.818  0.0059
##  19 castlemart - 56 def1       -7.62e-01 0.1860 Inf  -4.096  0.0027
##  19 castlemart - 57 def1       -8.32e-01 0.1856 Inf  -4.481  0.0011
##  19 castlemart - 58 def1       -8.88e-01 0.1874 Inf  -4.740  0.0006
##  19 castlemart - 59 def1       -5.38e-01 0.1924 Inf  -2.796  0.0580
##  19 castlemart - 60 def1       -6.44e-01 0.1862 Inf  -3.458  0.0146
##  19 castlemart - 61 def1       -9.07e-01 0.1875 Inf  -4.840  0.0005
##  20 castlemart - 22 castlemart -2.24e-01 0.1620 Inf  -1.381  0.4230
##  20 castlemart - 23 castlemart  2.21e-01 0.1805 Inf   1.224  0.4901
##  20 castlemart - 24 castlemart -1.39e-01 0.1690 Inf  -0.824  0.6685
##  20 castlemart - 25 castlemart -4.03e-02 0.1690 Inf  -0.239  0.9170
##  20 castlemart - 26 castlemart -1.44e-01 0.1666 Inf  -0.863  0.6530
##  20 castlemart - 27 castlemart -2.58e-01 0.1699 Inf  -1.516  0.3696
##  20 castlemart - 28 castlemart -1.55e-01 0.1663 Inf  -0.930  0.6209
##  20 castlemart - 29 castlemart  4.02e-02 0.1647 Inf   0.244  0.9151
##  20 castlemart - 30 castlemart  1.37e-02 0.1654 Inf   0.083  0.9741
##  20 castlemart - 31 castlemart -3.22e-01 0.1577 Inf  -2.043  0.1933
##  20 castlemart - 32 castlemart  2.64e-01 0.1692 Inf   1.561  0.3537
##  20 castlemart - 33 castlemart  1.82e-01 0.1661 Inf   1.098  0.5440
##  20 castlemart - 34 castlemart -2.92e-01 0.1647 Inf  -1.776  0.2737
##  20 castlemart - 35 castlemart -4.41e-02 0.1663 Inf  -0.265  0.9072
##  20 castlemart - 36 castlemart -3.01e-01 0.1675 Inf  -1.795  0.2680
##  20 castlemart - 37 castlemart  7.98e-02 0.1736 Inf   0.460  0.8291
##  20 castlemart - 38 castlemart -1.08e-02 0.1671 Inf  -0.065  0.9784
##  20 castlemart - 39 castlemart -6.03e-02 0.1784 Inf  -0.338  0.8797
##  20 castlemart - 41 castlemart -6.34e-02 0.1653 Inf  -0.384  0.8615
##  20 castlemart - 42 castlemart -1.77e-01 0.1674 Inf  -1.058  0.5601
##  20 castlemart - 43 castlemart  5.42e-02 0.1650 Inf   0.328  0.8829
##  20 castlemart - 44 castlemart -4.61e-01 0.1659 Inf  -2.780  0.0599
##  20 castlemart - 45 castlemart -1.30e-01 0.1634 Inf  -0.796  0.6812
##  20 castlemart - 46 castlemart -2.67e-01 0.1673 Inf  -1.593  0.3403
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##  20 castlemart - 47 castlemart  2.12e-01 0.1633 Inf   1.300  0.4577
##  20 castlemart - 48 castlemart -5.05e-01 0.1656 Inf  -3.051  0.0344
##  20 castlemart - 49 castlemart -2.05e-01 0.1645 Inf  -1.244  0.4832
##  20 castlemart - 50 castlemart -7.86e-02 0.1664 Inf  -0.473  0.8276
##  20 castlemart - 51 castlemart -4.32e-01 0.1674 Inf  -2.578  0.0865
##  20 castlemart - 52 castlemart -2.79e-01 0.1676 Inf  -1.663  0.3158
##  20 castlemart - 53 castlemart -1.29e-01 0.1662 Inf  -0.779  0.6885
##  20 castlemart - 54 castlemart -2.53e-01 0.1620 Inf  -1.563  0.3537
##  20 castlemart - 55 castlemart -1.21e-01 0.1638 Inf  -0.738  0.7068
##  20 castlemart - 56 castlemart -1.75e-01 0.1726 Inf  -1.017  0.5789
##  20 castlemart - 57 castlemart -2.46e-01 0.1657 Inf  -1.482  0.3813
##  20 castlemart - 58 castlemart -3.02e-01 0.1670 Inf  -1.807  0.2630
##  20 castlemart - 59 castlemart  4.84e-02 0.1720 Inf   0.281  0.9011
##  20 castlemart - 60 castlemart -5.77e-02 0.1655 Inf  -0.348  0.8760
##  20 castlemart - 61 castlemart -3.21e-01 0.1660 Inf  -1.935  0.2246
##  20 castlemart - 1 def1         9.84e-02 0.1629 Inf   0.604  0.7676
##  20 castlemart - 2 def1        -1.44e-01 0.1608 Inf  -0.893  0.6371
##  20 castlemart - 3 def1        -1.64e-01 0.1654 Inf  -0.994  0.5908
##  20 castlemart - 4 def1        -2.84e-01 0.1705 Inf  -1.665  0.3154
##  20 castlemart - 5 def1        -3.79e-01 0.1681 Inf  -2.257  0.1397
##  20 castlemart - 6 def1        -2.08e-01 0.1667 Inf  -1.247  0.4821
##  20 castlemart - 7 def1        -2.15e-01 0.1671 Inf  -1.288  0.4641
##  20 castlemart - 8 def1         9.13e-02 0.1713 Inf   0.533  0.8013
##  20 castlemart - 9 def1        -3.87e-01 0.1714 Inf  -2.258  0.1396
##  20 castlemart - 10 def1       -2.02e-01 0.1770 Inf  -1.142  0.5283
##  20 castlemart - 11 def1       -3.43e-01 0.1688 Inf  -2.034  0.1955
##  20 castlemart - 12 def1       -2.61e-01 0.1642 Inf  -1.589  0.3426
##  20 castlemart - 13 def1       -1.80e-01 0.1685 Inf  -1.069  0.5566
##  20 castlemart - 14 def1       -5.28e-01 0.1654 Inf  -3.194  0.0271
##  20 castlemart - 15 def1       -8.94e-02 0.1683 Inf  -0.531  0.8013
##  20 castlemart - 16 def1       -4.56e-02 0.1589 Inf  -0.287  0.8984
##  20 castlemart - 17 def1       -1.43e-01 0.1650 Inf  -0.865  0.6523
##  20 castlemart - 18 def1       -1.20e-01 0.1721 Inf  -0.695  0.7255
##  20 castlemart - 19 def1        4.53e-01 0.1898 Inf   2.384  0.1205
##  20 castlemart - 20 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  20 castlemart - 22 def1       -2.91e-01 0.1642 Inf  -1.770  0.2759
##  20 castlemart - 23 def1        1.54e-01 0.1828 Inf   0.842  0.6612
##  20 castlemart - 24 def1       -2.06e-01 0.1709 Inf  -1.206  0.4983
##  20 castlemart - 25 def1       -1.07e-01 0.1711 Inf  -0.627  0.7586
##  20 castlemart - 26 def1       -2.11e-01 0.1685 Inf  -1.250  0.4810
##  20 castlemart - 27 def1       -3.24e-01 0.1717 Inf  -1.889  0.2368
##  20 castlemart - 28 def1       -2.21e-01 0.1684 Inf  -1.315  0.4513
##  20 castlemart - 29 def1       -2.67e-02 0.1664 Inf  -0.161  0.9482
##  20 castlemart - 30 def1       -5.32e-02 0.1673 Inf  -0.318  0.8861
##  20 castlemart - 31 def1       -3.89e-01 0.1598 Inf  -2.435  0.1111
##  20 castlemart - 32 def1        1.97e-01 0.1712 Inf   1.151  0.5228
##  20 castlemart - 33 def1        1.16e-01 0.1679 Inf   0.688  0.7287
##  20 castlemart - 34 def1       -3.59e-01 0.1665 Inf  -2.158  0.1617
##  20 castlemart - 35 def1       -1.11e-01 0.1682 Inf  -0.660  0.7410
##  20 castlemart - 36 def1       -3.67e-01 0.1696 Inf  -2.167  0.1606
##  20 castlemart - 37 def1        1.29e-02 0.1754 Inf   0.074  0.9766
##  20 castlemart - 38 def1       -7.77e-02 0.1686 Inf  -0.461  0.8291
##  20 castlemart - 39 def1       -1.27e-01 0.1800 Inf  -0.706  0.7211
##  20 castlemart - 41 def1       -1.30e-01 0.1671 Inf  -0.780  0.6885
##  20 castlemart - 42 def1       -2.44e-01 0.1696 Inf  -1.438  0.3970
##  20 castlemart - 43 def1       -1.27e-02 0.1669 Inf  -0.076  0.9763
```

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##  20 castlemart - 44 def1       -5.28e-01 0.1677 Inf  -3.150  0.0293
##  20 castlemart - 45 def1       -1.97e-01 0.1651 Inf  -1.193  0.5036
##  20 castlemart - 46 def1       -3.33e-01 0.1698 Inf  -1.964  0.2157
##  20 castlemart - 47 def1        1.45e-01 0.1650 Inf   0.881  0.6447
##  20 castlemart - 48 def1       -5.72e-01 0.1674 Inf  -3.418  0.0160
##  20 castlemart - 49 def1       -2.71e-01 0.1666 Inf  -1.630  0.3283
##  20 castlemart - 50 def1       -1.46e-01 0.1680 Inf  -0.866  0.6523
##  20 castlemart - 51 def1       -4.98e-01 0.1689 Inf  -2.951  0.0427
##  20 castlemart - 52 def1       -3.46e-01 0.1694 Inf  -2.040  0.1939
##  20 castlemart - 53 def1       -1.96e-01 0.1683 Inf  -1.166  0.5160
##  20 castlemart - 54 def1       -3.20e-01 0.1641 Inf  -1.950  0.2208
##  20 castlemart - 55 def1       -1.88e-01 0.1658 Inf  -1.132  0.5317
##  20 castlemart - 56 def1       -2.42e-01 0.1745 Inf  -1.389  0.4193
##  20 castlemart - 57 def1       -3.12e-01 0.1676 Inf  -1.864  0.2443
##  20 castlemart - 58 def1       -3.69e-01 0.1689 Inf  -2.183  0.1569
##  20 castlemart - 59 def1       -1.85e-02 0.1738 Inf  -0.107  0.9649
##  20 castlemart - 60 def1       -1.25e-01 0.1671 Inf  -0.745  0.7034
##  20 castlemart - 61 def1       -3.88e-01 0.1677 Inf  -2.313  0.1279
##  22 castlemart - 23 castlemart  4.44e-01 0.1738 Inf   2.557  0.0901
##  22 castlemart - 24 castlemart  8.44e-02 0.1649 Inf   0.512  0.8076
##  22 castlemart - 25 castlemart  1.83e-01 0.1653 Inf   1.109  0.5391
##  22 castlemart - 26 castlemart  7.99e-02 0.1642 Inf   0.486  0.8226
##  22 castlemart - 27 castlemart -3.39e-02 0.1666 Inf  -0.203  0.9312
##  22 castlemart - 28 castlemart  6.91e-02 0.1640 Inf   0.421  0.8468
##  22 castlemart - 29 castlemart  2.64e-01 0.1623 Inf   1.625  0.3296
##  22 castlemart - 30 castlemart  2.37e-01 0.1632 Inf   1.454  0.3928
##  22 castlemart - 31 castlemart -9.86e-02 0.1546 Inf  -0.638  0.7532
##  22 castlemart - 32 castlemart  4.88e-01 0.1655 Inf   2.947  0.0428
##  22 castlemart - 33 castlemart  4.06e-01 0.1614 Inf   2.516  0.0971
##  22 castlemart - 34 castlemart -6.88e-02 0.1590 Inf  -0.433  0.8423
##  22 castlemart - 35 castlemart  1.80e-01 0.1660 Inf   1.082  0.5495
##  22 castlemart - 36 castlemart -7.69e-02 0.1613 Inf  -0.477  0.8243
##  22 castlemart - 37 castlemart  3.03e-01 0.1693 Inf   1.792  0.2686
##  22 castlemart - 38 castlemart  2.13e-01 0.1622 Inf   1.312  0.4523
##  22 castlemart - 39 castlemart  1.63e-01 0.1793 Inf   0.911  0.6301
##  22 castlemart - 41 castlemart  1.60e-01 0.1633 Inf   0.981  0.5973
##  22 castlemart - 42 castlemart  4.66e-02 0.1628 Inf   0.286  0.8984
##  22 castlemart - 43 castlemart  2.78e-01 0.1623 Inf   1.712  0.2976
##  22 castlemart - 44 castlemart -2.38e-01 0.1636 Inf  -1.452  0.3928
##  22 castlemart - 45 castlemart  9.36e-02 0.1579 Inf   0.592  0.7716
##  22 castlemart - 46 castlemart -4.29e-02 0.1644 Inf  -0.261  0.9085
##  22 castlemart - 47 castlemart  4.36e-01 0.1602 Inf   2.722  0.0658
##  22 castlemart - 48 castlemart -2.82e-01 0.1614 Inf  -1.745  0.2857
##  22 castlemart - 49 castlemart  1.91e-02 0.1624 Inf   0.117  0.9618
##  22 castlemart - 50 castlemart  1.45e-01 0.1614 Inf   0.899  0.6345
##  22 castlemart - 51 castlemart -2.08e-01 0.1654 Inf  -1.257  0.4781
##  22 castlemart - 52 castlemart -5.51e-02 0.1625 Inf  -0.339  0.8797
##  22 castlemart - 53 castlemart  9.42e-02 0.1622 Inf   0.581  0.7769
##  22 castlemart - 54 castlemart -2.96e-02 0.1575 Inf  -0.188  0.9369
##  22 castlemart - 55 castlemart  1.03e-01 0.1564 Inf   0.657  0.7422
##  22 castlemart - 56 castlemart  4.82e-02 0.1686 Inf   0.286  0.8984
##  22 castlemart - 57 castlemart -2.19e-02 0.1635 Inf  -0.134  0.9561
##  22 castlemart - 58 castlemart -7.81e-02 0.1623 Inf  -0.481  0.8236
##  22 castlemart - 59 castlemart  2.72e-01 0.1663 Inf   1.636  0.3257
##  22 castlemart - 60 castlemart  1.66e-01 0.1593 Inf   1.042  0.5678
##  22 castlemart - 61 castlemart -9.75e-02 0.1634 Inf  -0.597  0.7693
```

```
##  22 castlemart - 1 def1         3.22e-01 0.1613 Inf   1.996  0.2061
##  22 castlemart - 2 def1         8.00e-02 0.1593 Inf   0.502  0.8131
##  22 castlemart - 3 def1         5.92e-02 0.1629 Inf   0.364  0.8707
##  22 castlemart - 4 def1        -6.02e-02 0.1667 Inf  -0.361  0.8721
##  22 castlemart - 5 def1        -1.56e-01 0.1636 Inf  -0.952  0.6128
##  22 castlemart - 6 def1         1.59e-02 0.1628 Inf   0.098  0.9684
##  22 castlemart - 7 def1         8.46e-03 0.1634 Inf   0.052  0.9821
##  22 castlemart - 8 def1         3.15e-01 0.1670 Inf   1.886  0.2378
##  22 castlemart - 9 def1        -1.63e-01 0.1672 Inf  -0.976  0.5986
##  22 castlemart - 10 def1        2.15e-02 0.1720 Inf   0.125  0.9596
##  22 castlemart - 11 def1       -1.20e-01 0.1634 Inf  -0.732  0.7092
##  22 castlemart - 12 def1       -3.72e-02 0.1635 Inf  -0.228  0.9234
##  22 castlemart - 13 def1        4.36e-02 0.1635 Inf   0.266  0.9070
##  22 castlemart - 14 def1       -3.05e-01 0.1652 Inf  -1.845  0.2507
##  22 castlemart - 15 def1        1.34e-01 0.1651 Inf   0.813  0.6737
##  22 castlemart - 16 def1        1.78e-01 0.1550 Inf   1.149  0.5243
##  22 castlemart - 17 def1        8.09e-02 0.1651 Inf   0.490  0.8207
##  22 castlemart - 18 def1        1.04e-01 0.1681 Inf   0.619  0.7615
##  22 castlemart - 19 def1        6.76e-01 0.1861 Inf   3.634  0.0099
##  22 castlemart - 20 def1        1.57e-01 0.1649 Inf   0.951  0.6131
##  22 castlemart - 22 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  22 castlemart - 23 def1        3.78e-01 0.1766 Inf   2.138  0.1674
##  22 castlemart - 24 def1        1.75e-02 0.1673 Inf   0.105  0.9654
##  22 castlemart - 25 def1        1.16e-01 0.1678 Inf   0.694  0.7256
##  22 castlemart - 26 def1        1.30e-02 0.1665 Inf   0.078  0.9751
##  22 castlemart - 27 def1       -1.01e-01 0.1689 Inf  -0.597  0.7693
##  22 castlemart - 28 def1        2.18e-03 0.1665 Inf   0.013  0.9955
##  22 castlemart - 29 def1        1.97e-01 0.1644 Inf   1.198  0.5015
##  22 castlemart - 30 def1        1.70e-01 0.1655 Inf   1.030  0.5736
##  22 castlemart - 31 def1       -1.65e-01 0.1571 Inf  -1.053  0.5626
##  22 castlemart - 32 def1        4.21e-01 0.1679 Inf   2.506  0.0983
##  22 castlemart - 33 def1        3.39e-01 0.1636 Inf   2.073  0.1854
##  22 castlemart - 34 def1       -1.36e-01 0.1612 Inf  -0.842  0.6612
##  22 castlemart - 35 def1        1.13e-01 0.1682 Inf   0.670  0.7376
##  22 castlemart - 36 def1       -1.44e-01 0.1638 Inf  -0.878  0.6463
##  22 castlemart - 37 def1        2.37e-01 0.1714 Inf   1.380  0.4234
##  22 castlemart - 38 def1        1.46e-01 0.1640 Inf   0.890  0.6392
##  22 castlemart - 39 def1        9.65e-02 0.1813 Inf   0.532  0.8013
##  22 castlemart - 41 def1        9.34e-02 0.1655 Inf   0.564  0.7862
##  22 castlemart - 42 def1       -2.03e-02 0.1654 Inf  -0.123  0.9601
##  22 castlemart - 43 def1        2.11e-01 0.1646 Inf   1.282  0.4667
##  22 castlemart - 44 def1       -3.05e-01 0.1658 Inf  -1.837  0.2536
##  22 castlemart - 45 def1        2.67e-02 0.1600 Inf   0.167  0.9448
##  22 castlemart - 46 def1       -1.10e-01 0.1673 Inf  -0.657  0.7428
##  22 castlemart - 47 def1        3.69e-01 0.1623 Inf   2.274  0.1356
##  22 castlemart - 48 def1       -3.49e-01 0.1636 Inf  -2.131  0.1694
##  22 castlemart - 49 def1       -4.78e-02 0.1648 Inf  -0.290  0.8982
##  22 castlemart - 50 def1        7.81e-02 0.1633 Inf   0.478  0.8242
##  22 castlemart - 51 def1       -2.75e-01 0.1673 Inf  -1.642  0.3233
##  22 castlemart - 52 def1       -1.22e-01 0.1647 Inf  -0.740  0.7063
##  22 castlemart - 53 def1        2.73e-02 0.1647 Inf   0.166  0.9451
##  22 castlemart - 54 def1       -9.65e-02 0.1600 Inf  -0.603  0.7681
##  22 castlemart - 55 def1        3.60e-02 0.1588 Inf   0.226  0.9241
##  22 castlemart - 56 def1       -1.87e-02 0.1709 Inf  -0.109  0.9638
##  22 castlemart - 57 def1       -8.88e-02 0.1658 Inf  -0.536  0.8000
##  22 castlemart - 58 def1       -1.45e-01 0.1646 Inf  -0.881  0.6450
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##  22 castlemart - 59 def1        2.05e-01 0.1684 Inf   1.218  0.4928
##  22 castlemart - 60 def1        9.91e-02 0.1614 Inf   0.614  0.7635
##  22 castlemart - 61 def1       -1.64e-01 0.1655 Inf  -0.993  0.5913
##  23 castlemart - 24 castlemart -3.60e-01 0.1763 Inf  -2.043  0.1933
##  23 castlemart - 25 castlemart -2.61e-01 0.1813 Inf  -1.440  0.3964
##  23 castlemart - 26 castlemart -3.65e-01 0.1756 Inf  -2.076  0.1847
##  23 castlemart - 27 castlemart -4.78e-01 0.1811 Inf  -2.642  0.0771
##  23 castlemart - 28 castlemart -3.75e-01 0.1780 Inf  -2.110  0.1751
##  23 castlemart - 29 castlemart -1.81e-01 0.1783 Inf  -1.013  0.5801
##  23 castlemart - 30 castlemart -2.07e-01 0.1796 Inf  -1.153  0.5219
##  23 castlemart - 31 castlemart -5.43e-01 0.1726 Inf  -3.147  0.0293
##  23 castlemart - 32 castlemart  4.32e-02 0.1811 Inf   0.238  0.9170
##  23 castlemart - 33 castlemart -3.84e-02 0.1765 Inf  -0.217  0.9275
##  23 castlemart - 34 castlemart -5.13e-01 0.1725 Inf  -2.976  0.0400
##  23 castlemart - 35 castlemart -2.65e-01 0.1825 Inf  -1.452  0.3928
##  23 castlemart - 36 castlemart -5.21e-01 0.1789 Inf  -2.915  0.0455
##  23 castlemart - 37 castlemart -1.41e-01 0.1850 Inf  -0.762  0.6973
##  23 castlemart - 38 castlemart -2.32e-01 0.1749 Inf  -1.325  0.4469
##  23 castlemart - 39 castlemart -2.81e-01 0.1934 Inf  -1.453  0.3928
##  23 castlemart - 41 castlemart -2.84e-01 0.1768 Inf  -1.608  0.3351
##  23 castlemart - 42 castlemart -3.98e-01 0.1782 Inf  -2.233  0.1446
##  23 castlemart - 43 castlemart -1.67e-01 0.1786 Inf  -0.933  0.6201
##  23 castlemart - 44 castlemart -6.82e-01 0.1806 Inf  -3.777  0.0066
##  23 castlemart - 45 castlemart -3.51e-01 0.1734 Inf  -2.024  0.1990
##  23 castlemart - 46 castlemart -4.87e-01 0.1799 Inf  -2.709  0.0670
##  23 castlemart - 47 castlemart -8.51e-03 0.1773 Inf  -0.048  0.9821
##  23 castlemart - 48 castlemart -7.26e-01 0.1771 Inf  -4.099  0.0027
##  23 castlemart - 49 castlemart -4.25e-01 0.1774 Inf  -2.399  0.1184
##  23 castlemart - 50 castlemart -2.99e-01 0.1736 Inf  -1.725  0.2919
##  23 castlemart - 51 castlemart -6.52e-01 0.1811 Inf  -3.602  0.0110
##  23 castlemart - 52 castlemart -5.00e-01 0.1772 Inf  -2.819  0.0557
##  23 castlemart - 53 castlemart -3.50e-01 0.1760 Inf  -1.991  0.2082
##  23 castlemart - 54 castlemart -4.74e-01 0.1693 Inf  -2.800  0.0577
##  23 castlemart - 55 castlemart -3.42e-01 0.1749 Inf  -1.954  0.2199
##  23 castlemart - 56 castlemart -3.96e-01 0.1830 Inf  -2.165  0.1607
##  23 castlemart - 57 castlemart -4.66e-01 0.1782 Inf  -2.618  0.0810
##  23 castlemart - 58 castlemart -5.23e-01 0.1740 Inf  -3.004  0.0382
##  23 castlemart - 59 castlemart -1.72e-01 0.1821 Inf  -0.947  0.6158
##  23 castlemart - 60 castlemart -2.78e-01 0.1769 Inf  -1.574  0.3493
##  23 castlemart - 61 castlemart -5.42e-01 0.1763 Inf  -3.073  0.0333
##  23 castlemart - 1 def1        -1.22e-01 0.1763 Inf  -0.695  0.7255
##  23 castlemart - 2 def1        -3.65e-01 0.1761 Inf  -2.070  0.1860
##  23 castlemart - 3 def1        -3.85e-01 0.1770 Inf  -2.176  0.1583
##  23 castlemart - 4 def1        -5.05e-01 0.1819 Inf  -2.775  0.0607
##  23 castlemart - 5 def1        -6.00e-01 0.1758 Inf  -3.414  0.0161
##  23 castlemart - 6 def1        -4.29e-01 0.1787 Inf  -2.398  0.1185
##  23 castlemart - 7 def1        -4.36e-01 0.1779 Inf  -2.451  0.1084
##  23 castlemart - 8 def1        -1.30e-01 0.1823 Inf  -0.711  0.7201
##  23 castlemart - 9 def1        -6.08e-01 0.1817 Inf  -3.345  0.0188
##  23 castlemart - 10 def1       -4.23e-01 0.1848 Inf  -2.290  0.1318
##  23 castlemart - 11 def1       -5.64e-01 0.1781 Inf  -3.167  0.0282
##  23 castlemart - 12 def1       -4.82e-01 0.1781 Inf  -2.705  0.0674
##  23 castlemart - 13 def1       -4.01e-01 0.1778 Inf  -2.254  0.1403
##  23 castlemart - 14 def1       -7.49e-01 0.1797 Inf  -4.170  0.0023
##  23 castlemart - 15 def1       -3.10e-01 0.1780 Inf  -1.743  0.2865
##  23 castlemart - 16 def1       -2.66e-01 0.1695 Inf  -1.572  0.3504
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##  23 castlemart - 17 def1       -3.64e-01 0.1788 Inf  -2.033  0.1956
##  23 castlemart - 18 def1       -3.40e-01 0.1832 Inf  -1.858  0.2459
##  23 castlemart - 19 def1        2.32e-01 0.1997 Inf   1.160  0.5188
##  23 castlemart - 20 def1       -2.88e-01 0.1827 Inf  -1.575  0.3489
##  23 castlemart - 22 def1       -5.11e-01 0.1758 Inf  -2.909  0.0459
##  23 castlemart - 23 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  23 castlemart - 24 def1       -4.27e-01 0.1781 Inf  -2.398  0.1185
##  23 castlemart - 25 def1       -3.28e-01 0.1832 Inf  -1.791  0.2694
##  23 castlemart - 26 def1       -4.32e-01 0.1774 Inf  -2.433  0.1115
##  23 castlemart - 27 def1       -5.45e-01 0.1827 Inf  -2.984  0.0396
##  23 castlemart - 28 def1       -4.42e-01 0.1799 Inf  -2.459  0.1070
##  23 castlemart - 29 def1       -2.48e-01 0.1798 Inf  -1.377  0.4251
##  23 castlemart - 30 def1       -2.74e-01 0.1813 Inf  -1.512  0.3711
##  23 castlemart - 31 def1       -6.10e-01 0.1745 Inf  -3.496  0.0136
##  23 castlemart - 32 def1       -2.37e-02 0.1829 Inf  -0.130  0.9583
##  23 castlemart - 33 def1       -1.05e-01 0.1781 Inf  -0.591  0.7727
##  23 castlemart - 34 def1       -5.80e-01 0.1741 Inf  -3.333  0.0196
##  23 castlemart - 35 def1       -3.32e-01 0.1841 Inf  -1.803  0.2647
##  23 castlemart - 36 def1       -5.88e-01 0.1808 Inf  -3.255  0.0240
##  23 castlemart - 37 def1       -2.08e-01 0.1865 Inf  -1.115  0.5376
##  23 castlemart - 38 def1       -2.99e-01 0.1761 Inf  -1.695  0.3039
##  23 castlemart - 39 def1       -3.48e-01 0.1949 Inf  -1.786  0.2712
##  23 castlemart - 41 def1       -3.51e-01 0.1784 Inf  -1.968  0.2147
##  23 castlemart - 42 def1       -4.65e-01 0.1802 Inf  -2.580  0.0864
##  23 castlemart - 43 def1       -2.34e-01 0.1803 Inf  -1.295  0.4605
##  23 castlemart - 44 def1       -7.49e-01 0.1822 Inf  -4.112  0.0026
##  23 castlemart - 45 def1       -4.18e-01 0.1748 Inf  -2.390  0.1194
##  23 castlemart - 46 def1       -5.54e-01 0.1821 Inf  -3.044  0.0349
##  23 castlemart - 47 def1       -7.54e-02 0.1788 Inf  -0.422  0.8468
##  23 castlemart - 48 def1       -7.93e-01 0.1787 Inf  -4.437  0.0011
##  23 castlemart - 49 def1       -4.92e-01 0.1792 Inf  -2.748  0.0632
##  23 castlemart - 50 def1       -3.66e-01 0.1750 Inf  -2.093  0.1795
##  23 castlemart - 51 def1       -7.19e-01 0.1824 Inf  -3.942  0.0045
##  23 castlemart - 52 def1       -5.66e-01 0.1789 Inf  -3.167  0.0282
##  23 castlemart - 53 def1       -4.17e-01 0.1778 Inf  -2.346  0.1278
##  23 castlemart - 54 def1       -5.41e-01 0.1712 Inf  -3.160  0.0287
##  23 castlemart - 55 def1       -4.09e-01 0.1766 Inf  -2.313  0.1279
##  23 castlemart - 56 def1       -4.63e-01 0.1847 Inf  -2.508  0.0982
##  23 castlemart - 57 def1       -5.33e-01 0.1799 Inf  -2.965  0.0414
##  23 castlemart - 58 def1       -5.89e-01 0.1757 Inf  -3.355  0.0185
##  23 castlemart - 59 def1       -2.39e-01 0.1836 Inf  -1.303  0.4564
##  23 castlemart - 60 def1       -3.45e-01 0.1783 Inf  -1.937  0.2245
##  23 castlemart - 61 def1       -6.09e-01 0.1779 Inf  -3.422  0.0159
##  24 castlemart - 25 castlemart  9.90e-02 0.1652 Inf   0.599  0.7691
##  24 castlemart - 26 castlemart -4.50e-03 0.1691 Inf  -0.027  0.9904
##  24 castlemart - 27 castlemart -1.18e-01 0.1687 Inf  -0.701  0.7224
##  24 castlemart - 28 castlemart -1.53e-02 0.1692 Inf  -0.091  0.9728
##  24 castlemart - 29 castlemart  1.79e-01 0.1681 Inf   1.068  0.5566
##  24 castlemart - 30 castlemart  1.53e-01 0.1684 Inf   0.908  0.6317
##  24 castlemart - 31 castlemart -1.83e-01 0.1607 Inf  -1.138  0.5297
##  24 castlemart - 32 castlemart  4.03e-01 0.1685 Inf   2.394  0.1188
##  24 castlemart - 33 castlemart  3.22e-01 0.1645 Inf   1.956  0.2194
##  24 castlemart - 34 castlemart -1.53e-01 0.1651 Inf  -0.928  0.6210
##  24 castlemart - 35 castlemart  9.51e-02 0.1719 Inf   0.554  0.7901
##  24 castlemart - 36 castlemart -1.61e-01 0.1679 Inf  -0.961  0.6069
##  24 castlemart - 37 castlemart  2.19e-01 0.1742 Inf   1.258  0.4775
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##  24 castlemart - 38 castlemart  1.28e-01 0.1654 Inf   0.777  0.6894
##  24 castlemart - 39 castlemart  7.90e-02 0.1834 Inf   0.431  0.8431
##  24 castlemart - 41 castlemart  7.59e-02 0.1672 Inf   0.454  0.8311
##  24 castlemart - 42 castlemart -3.78e-02 0.1630 Inf  -0.232  0.9210
##  24 castlemart - 43 castlemart  1.93e-01 0.1679 Inf   1.152  0.5222
##  24 castlemart - 44 castlemart -3.22e-01 0.1694 Inf  -1.901  0.2332
##  24 castlemart - 45 castlemart  9.19e-03 0.1656 Inf   0.056  0.9814
##  24 castlemart - 46 castlemart -1.27e-01 0.1695 Inf  -0.751  0.7006
##  24 castlemart - 47 castlemart  3.52e-01 0.1659 Inf   2.119  0.1725
##  24 castlemart - 48 castlemart -3.66e-01 0.1672 Inf  -2.189  0.1553
##  24 castlemart - 49 castlemart -6.53e-02 0.1640 Inf  -0.398  0.8541
##  24 castlemart - 50 castlemart  6.06e-02 0.1670 Inf   0.363  0.8707
##  24 castlemart - 51 castlemart -2.92e-01 0.1704 Inf  -1.715  0.2964
##  24 castlemart - 52 castlemart -1.39e-01 0.1655 Inf  -0.843  0.6612
##  24 castlemart - 53 castlemart  9.83e-03 0.1658 Inf   0.059  0.9801
##  24 castlemart - 54 castlemart -1.14e-01 0.1623 Inf  -0.702  0.7218
##  24 castlemart - 55 castlemart  1.85e-02 0.1639 Inf   0.113  0.9631
##  24 castlemart - 56 castlemart -3.62e-02 0.1681 Inf  -0.215  0.9278
##  24 castlemart - 57 castlemart -1.06e-01 0.1640 Inf  -0.648  0.7465
##  24 castlemart - 58 castlemart -1.62e-01 0.1668 Inf  -0.974  0.5999
##  24 castlemart - 59 castlemart  1.88e-01 0.1715 Inf   1.094  0.5452
##  24 castlemart - 60 castlemart  8.16e-02 0.1625 Inf   0.502  0.8130
##  24 castlemart - 61 castlemart -1.82e-01 0.1658 Inf  -1.097  0.5446
##  24 castlemart - 1 def1         2.38e-01 0.1650 Inf   1.441  0.3964
##  24 castlemart - 2 def1        -4.41e-03 0.1652 Inf  -0.027  0.9904
##  24 castlemart - 3 def1        -2.52e-02 0.1670 Inf  -0.151  0.9523
##  24 castlemart - 4 def1        -1.45e-01 0.1696 Inf  -0.853  0.6569
##  24 castlemart - 5 def1        -2.40e-01 0.1648 Inf  -1.457  0.3927
##  24 castlemart - 6 def1        -6.85e-02 0.1668 Inf  -0.410  0.8501
##  24 castlemart - 7 def1        -7.59e-02 0.1686 Inf  -0.450  0.8316
##  24 castlemart - 8 def1         2.31e-01 0.1698 Inf   1.358  0.4340
##  24 castlemart - 9 def1        -2.48e-01 0.1705 Inf  -1.452  0.3928
##  24 castlemart - 10 def1       -6.29e-02 0.1762 Inf  -0.357  0.8737
##  24 castlemart - 11 def1       -2.04e-01 0.1673 Inf  -1.220  0.4928
##  24 castlemart - 12 def1       -1.22e-01 0.1681 Inf  -0.724  0.7148
##  24 castlemart - 13 def1       -4.08e-02 0.1669 Inf  -0.245  0.9149
##  24 castlemart - 14 def1       -3.89e-01 0.1695 Inf  -2.295  0.1306
##  24 castlemart - 15 def1        4.98e-02 0.1699 Inf   0.293  0.8967
##  24 castlemart - 16 def1        9.37e-02 0.1600 Inf   0.586  0.7739
##  24 castlemart - 17 def1       -3.45e-03 0.1695 Inf  -0.020  0.9933
##  24 castlemart - 18 def1        1.97e-02 0.1714 Inf   0.115  0.9625
##  24 castlemart - 19 def1        5.92e-01 0.1900 Inf   3.115  0.0310
##  24 castlemart - 20 def1        7.24e-02 0.1719 Inf   0.421  0.8468
##  24 castlemart - 22 def1       -1.51e-01 0.1676 Inf  -0.903  0.6332
##  24 castlemart - 23 def1        2.93e-01 0.1792 Inf   1.636  0.3257
##  24 castlemart - 24 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  24 castlemart - 25 def1        3.21e-02 0.1678 Inf   0.191  0.9356
##  24 castlemart - 26 def1       -7.14e-02 0.1714 Inf  -0.416  0.8487
##  24 castlemart - 27 def1       -1.85e-01 0.1711 Inf  -1.082  0.5495
##  24 castlemart - 28 def1       -8.22e-02 0.1718 Inf  -0.478  0.8242
##  24 castlemart - 29 def1        1.13e-01 0.1702 Inf   0.661  0.7410
##  24 castlemart - 30 def1        8.60e-02 0.1707 Inf   0.504  0.8122
##  24 castlemart - 31 def1       -2.50e-01 0.1633 Inf  -1.530  0.3649
##  24 castlemart - 32 def1        3.36e-01 0.1710 Inf   1.968  0.2149
##  24 castlemart - 33 def1        2.55e-01 0.1668 Inf   1.528  0.3658
##  24 castlemart - 34 def1       -2.20e-01 0.1674 Inf  -1.315  0.4513
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##  24 castlemart - 35 def1        2.82e-02 0.1742 Inf   0.162  0.9470
##  24 castlemart - 36 def1       -2.28e-01 0.1705 Inf  -1.339  0.4421
##  24 castlemart - 37 def1        1.52e-01 0.1764 Inf   0.863  0.6530
##  24 castlemart - 38 def1        6.16e-02 0.1673 Inf   0.368  0.8693
##  24 castlemart - 39 def1        1.21e-02 0.1855 Inf   0.065  0.9784
##  24 castlemart - 41 def1        8.98e-03 0.1695 Inf   0.053  0.9814
##  24 castlemart - 42 def1       -1.05e-01 0.1657 Inf  -0.632  0.7559
##  24 castlemart - 43 def1        1.27e-01 0.1702 Inf   0.744  0.7042
##  24 castlemart - 44 def1       -3.89e-01 0.1716 Inf  -2.266  0.1376
##  24 castlemart - 45 def1       -5.77e-02 0.1677 Inf  -0.344  0.8775
##  24 castlemart - 46 def1       -1.94e-01 0.1724 Inf  -1.126  0.5333
##  24 castlemart - 47 def1        2.85e-01 0.1681 Inf   1.694  0.3042
##  24 castlemart - 48 def1       -4.33e-01 0.1695 Inf  -2.555  0.0905
##  24 castlemart - 49 def1       -1.32e-01 0.1665 Inf  -0.794  0.6822
##  24 castlemart - 50 def1       -6.26e-03 0.1690 Inf  -0.037  0.9870
##  24 castlemart - 51 def1       -3.59e-01 0.1724 Inf  -2.083  0.1823
##  24 castlemart - 52 def1       -2.06e-01 0.1679 Inf  -1.229  0.4881
##  24 castlemart - 53 def1       -5.71e-02 0.1684 Inf  -0.339  0.8797
##  24 castlemart - 54 def1       -1.81e-01 0.1649 Inf  -1.097  0.5447
##  24 castlemart - 55 def1       -4.84e-02 0.1663 Inf  -0.291  0.8976
##  24 castlemart - 56 def1       -1.03e-01 0.1705 Inf  -0.604  0.7674
##  24 castlemart - 57 def1       -1.73e-01 0.1664 Inf  -1.041  0.5682
##  24 castlemart - 58 def1       -2.29e-01 0.1692 Inf  -1.355  0.4351
##  24 castlemart - 59 def1        1.21e-01 0.1737 Inf   0.695  0.7253
##  24 castlemart - 60 def1        1.47e-02 0.1646 Inf   0.089  0.9732
##  24 castlemart - 61 def1       -2.49e-01 0.1681 Inf  -1.480  0.3821
##  25 castlemart - 26 castlemart -1.03e-01 0.1706 Inf  -0.606  0.7661
##  25 castlemart - 27 castlemart -2.17e-01 0.1691 Inf  -1.284  0.4660
##  25 castlemart - 28 castlemart -1.14e-01 0.1698 Inf  -0.673  0.7360
##  25 castlemart - 29 castlemart  8.05e-02 0.1662 Inf   0.484  0.8236
##  25 castlemart - 30 castlemart  5.40e-02 0.1623 Inf   0.333  0.8816
##  25 castlemart - 31 castlemart -2.82e-01 0.1589 Inf  -1.775  0.2739
##  25 castlemart - 32 castlemart  3.04e-01 0.1655 Inf   1.839  0.2525
##  25 castlemart - 33 castlemart  2.23e-01 0.1666 Inf   1.337  0.4428
##  25 castlemart - 34 castlemart -2.52e-01 0.1652 Inf  -1.527  0.3659
##  25 castlemart - 35 castlemart -3.83e-03 0.1699 Inf  -0.023  0.9919
##  25 castlemart - 36 castlemart -2.60e-01 0.1676 Inf  -1.553  0.3572
##  25 castlemart - 37 castlemart  1.20e-01 0.1715 Inf   0.701  0.7224
##  25 castlemart - 38 castlemart  2.95e-02 0.1655 Inf   0.178  0.9392
##  25 castlemart - 39 castlemart -2.00e-02 0.1811 Inf  -0.110  0.9633
##  25 castlemart - 41 castlemart -2.31e-02 0.1675 Inf  -0.138  0.9558
##  25 castlemart - 42 castlemart -1.37e-01 0.1607 Inf  -0.851  0.6575
##  25 castlemart - 43 castlemart  9.45e-02 0.1678 Inf   0.563  0.7865
##  25 castlemart - 44 castlemart -4.21e-01 0.1691 Inf  -2.490  0.1010
##  25 castlemart - 45 castlemart -8.98e-02 0.1671 Inf  -0.537  0.7995
##  25 castlemart - 46 castlemart -2.26e-01 0.1696 Inf  -1.334  0.4441
##  25 castlemart - 47 castlemart  2.53e-01 0.1663 Inf   1.519  0.3683
##  25 castlemart - 48 castlemart -4.65e-01 0.1673 Inf  -2.780  0.0599
##  25 castlemart - 49 castlemart -1.64e-01 0.1655 Inf  -0.993  0.5913
##  25 castlemart - 50 castlemart -3.83e-02 0.1683 Inf  -0.228  0.9234
##  25 castlemart - 51 castlemart -3.91e-01 0.1692 Inf  -2.313  0.1279
##  25 castlemart - 52 castlemart -2.38e-01 0.1692 Inf  -1.409  0.4102
##  25 castlemart - 53 castlemart -8.91e-02 0.1664 Inf  -0.536  0.8000
##  25 castlemart - 54 castlemart -2.13e-01 0.1614 Inf  -1.319  0.4498
##  25 castlemart - 55 castlemart -8.05e-02 0.1643 Inf  -0.490  0.8207
##  25 castlemart - 56 castlemart -1.35e-01 0.1656 Inf  -0.816  0.6730
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##  25 castlemart - 57 castlemart -2.05e-01 0.1681 Inf  -1.221  0.4920
##  25 castlemart - 58 castlemart -2.61e-01 0.1674 Inf  -1.562  0.3537
##  25 castlemart - 59 castlemart  8.87e-02 0.1735 Inf   0.511  0.8076
##  25 castlemart - 60 castlemart -1.73e-02 0.1640 Inf  -0.106  0.9649
##  25 castlemart - 61 castlemart -2.81e-01 0.1676 Inf  -1.676  0.3112
##  25 castlemart - 1 def1         1.39e-01 0.1650 Inf   0.841  0.6614
##  25 castlemart - 2 def1        -1.03e-01 0.1659 Inf  -0.623  0.7605
##  25 castlemart - 3 def1        -1.24e-01 0.1663 Inf  -0.746  0.7027
##  25 castlemart - 4 def1        -2.44e-01 0.1674 Inf  -1.455  0.3928
##  25 castlemart - 5 def1        -3.39e-01 0.1659 Inf  -2.043  0.1933
##  25 castlemart - 6 def1        -1.67e-01 0.1700 Inf  -0.985  0.5952
##  25 castlemart - 7 def1        -1.75e-01 0.1675 Inf  -1.044  0.5668
##  25 castlemart - 8 def1         1.32e-01 0.1660 Inf   0.793  0.6822
##  25 castlemart - 9 def1        -3.47e-01 0.1715 Inf  -2.021  0.2004
##  25 castlemart - 10 def1       -1.62e-01 0.1789 Inf  -0.905  0.6327
##  25 castlemart - 11 def1       -3.03e-01 0.1648 Inf  -1.838  0.2532
##  25 castlemart - 12 def1       -2.21e-01 0.1678 Inf  -1.314  0.4515
##  25 castlemart - 13 def1       -1.40e-01 0.1661 Inf  -0.841  0.6612
##  25 castlemart - 14 def1       -4.88e-01 0.1697 Inf  -2.876  0.0496
##  25 castlemart - 15 def1       -4.91e-02 0.1698 Inf  -0.289  0.8983
##  25 castlemart - 16 def1       -5.25e-03 0.1631 Inf  -0.032  0.9885
##  25 castlemart - 17 def1       -1.02e-01 0.1698 Inf  -0.603  0.7681
##  25 castlemart - 18 def1       -7.92e-02 0.1691 Inf  -0.469  0.8276
##  25 castlemart - 19 def1        4.93e-01 0.1854 Inf   2.659  0.0744
##  25 castlemart - 20 def1       -2.66e-02 0.1717 Inf  -0.155  0.9509
##  25 castlemart - 22 def1       -2.50e-01 0.1678 Inf  -1.491  0.3788
##  25 castlemart - 23 def1        1.94e-01 0.1840 Inf   1.056  0.5608
##  25 castlemart - 24 def1       -1.66e-01 0.1675 Inf  -0.990  0.5930
##  25 castlemart - 25 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  25 castlemart - 26 def1       -1.70e-01 0.1728 Inf  -0.986  0.5949
##  25 castlemart - 27 def1       -2.84e-01 0.1713 Inf  -1.658  0.3177
##  25 castlemart - 28 def1       -1.81e-01 0.1722 Inf  -1.052  0.5633
##  25 castlemart - 29 def1        1.36e-02 0.1683 Inf   0.081  0.9746
##  25 castlemart - 30 def1       -1.29e-02 0.1646 Inf  -0.078  0.9751
##  25 castlemart - 31 def1       -3.49e-01 0.1613 Inf  -2.162  0.1607
##  25 castlemart - 32 def1        2.37e-01 0.1679 Inf   1.414  0.4080
##  25 castlemart - 33 def1        1.56e-01 0.1688 Inf   0.924  0.6229
##  25 castlemart - 34 def1       -3.19e-01 0.1674 Inf  -1.906  0.2320
##  25 castlemart - 35 def1       -7.07e-02 0.1721 Inf  -0.411  0.8501
##  25 castlemart - 36 def1       -3.27e-01 0.1701 Inf  -1.924  0.2276
##  25 castlemart - 37 def1        5.32e-02 0.1736 Inf   0.307  0.8904
##  25 castlemart - 38 def1       -3.74e-02 0.1673 Inf  -0.224  0.9256
##  25 castlemart - 39 def1       -8.69e-02 0.1831 Inf  -0.474  0.8264
##  25 castlemart - 41 def1       -9.00e-02 0.1696 Inf  -0.531  0.8013
##  25 castlemart - 42 def1       -2.04e-01 0.1634 Inf  -1.247  0.4821
##  25 castlemart - 43 def1        2.76e-02 0.1700 Inf   0.163  0.9470
##  25 castlemart - 44 def1       -4.88e-01 0.1711 Inf  -2.851  0.0525
##  25 castlemart - 45 def1       -1.57e-01 0.1690 Inf  -0.927  0.6216
##  25 castlemart - 46 def1       -2.93e-01 0.1724 Inf  -1.701  0.3016
##  25 castlemart - 47 def1        1.86e-01 0.1683 Inf   1.104  0.5414
##  25 castlemart - 48 def1       -5.32e-01 0.1694 Inf  -3.139  0.0297
##  25 castlemart - 49 def1       -2.31e-01 0.1678 Inf  -1.377  0.4251
##  25 castlemart - 50 def1       -1.05e-01 0.1702 Inf  -0.618  0.7619
##  25 castlemart - 51 def1       -4.58e-01 0.1710 Inf  -2.679  0.0710
##  25 castlemart - 52 def1       -3.05e-01 0.1713 Inf  -1.782  0.2724
##  25 castlemart - 53 def1       -1.56e-01 0.1689 Inf  -0.924  0.6229
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##  25 castlemart - 54 def1       -2.80e-01 0.1638 Inf  -1.708  0.2984
##  25 castlemart - 55 def1       -1.47e-01 0.1666 Inf  -0.885  0.6424
##  25 castlemart - 56 def1       -2.02e-01 0.1679 Inf  -1.203  0.4994
##  25 castlemart - 57 def1       -2.72e-01 0.1703 Inf  -1.598  0.3384
##  25 castlemart - 58 def1       -3.28e-01 0.1697 Inf  -1.935  0.2246
##  25 castlemart - 59 def1        2.18e-02 0.1755 Inf   0.124  0.9596
##  25 castlemart - 60 def1       -8.42e-02 0.1660 Inf  -0.507  0.8097
##  25 castlemart - 61 def1       -3.48e-01 0.1697 Inf  -2.049  0.1921
##  26 castlemart - 27 castlemart -1.14e-01 0.1689 Inf  -0.673  0.7360
##  26 castlemart - 28 castlemart -1.08e-02 0.1645 Inf  -0.066  0.9784
##  26 castlemart - 29 castlemart  1.84e-01 0.1643 Inf   1.119  0.5355
##  26 castlemart - 30 castlemart  1.57e-01 0.1685 Inf   0.934  0.6201
##  26 castlemart - 31 castlemart -1.78e-01 0.1593 Inf  -1.121  0.5355
##  26 castlemart - 32 castlemart  4.08e-01 0.1704 Inf   2.394  0.1188
##  26 castlemart - 33 castlemart  3.26e-01 0.1648 Inf   1.980  0.2106
##  26 castlemart - 34 castlemart -1.49e-01 0.1631 Inf  -0.912  0.6300
##  26 castlemart - 35 castlemart  9.96e-02 0.1688 Inf   0.590  0.7727
##  26 castlemart - 36 castlemart -1.57e-01 0.1668 Inf  -0.940  0.6183
##  26 castlemart - 37 castlemart  2.24e-01 0.1727 Inf   1.295  0.4608
##  26 castlemart - 38 castlemart  1.33e-01 0.1671 Inf   0.796  0.6812
##  26 castlemart - 39 castlemart  8.35e-02 0.1826 Inf   0.457  0.8295
##  26 castlemart - 41 castlemart  8.04e-02 0.1662 Inf   0.483  0.8236
##  26 castlemart - 42 castlemart -3.33e-02 0.1675 Inf  -0.199  0.9322
##  26 castlemart - 43 castlemart  1.98e-01 0.1645 Inf   1.204  0.4994
##  26 castlemart - 44 castlemart -3.18e-01 0.1660 Inf  -1.912  0.2300
##  26 castlemart - 45 castlemart  1.37e-02 0.1656 Inf   0.083  0.9741
##  26 castlemart - 46 castlemart -1.23e-01 0.1664 Inf  -0.738  0.7067
##  26 castlemart - 47 castlemart  3.56e-01 0.1621 Inf   2.197  0.1540
##  26 castlemart - 48 castlemart -3.62e-01 0.1638 Inf  -2.207  0.1516
##  26 castlemart - 49 castlemart -6.08e-02 0.1626 Inf  -0.374  0.8656
##  26 castlemart - 50 castlemart  6.51e-02 0.1650 Inf   0.395  0.8558
##  26 castlemart - 51 castlemart -2.88e-01 0.1676 Inf  -1.717  0.2962
##  26 castlemart - 52 castlemart -1.35e-01 0.1684 Inf  -0.801  0.6782
##  26 castlemart - 53 castlemart  1.43e-02 0.1657 Inf   0.086  0.9740
##  26 castlemart - 54 castlemart -1.09e-01 0.1633 Inf  -0.670  0.7376
##  26 castlemart - 55 castlemart  2.30e-02 0.1589 Inf   0.144  0.9535
##  26 castlemart - 56 castlemart -3.17e-02 0.1728 Inf  -0.183  0.9375
##  26 castlemart - 57 castlemart -1.02e-01 0.1675 Inf  -0.608  0.7661
##  26 castlemart - 58 castlemart -1.58e-01 0.1672 Inf  -0.945  0.6162
##  26 castlemart - 59 castlemart  1.92e-01 0.1722 Inf   1.116  0.5367
##  26 castlemart - 60 castlemart  8.61e-02 0.1663 Inf   0.518  0.8066
##  26 castlemart - 61 castlemart -1.77e-01 0.1661 Inf  -1.068  0.5566
##  26 castlemart - 1 def1         2.42e-01 0.1620 Inf   1.495  0.3775
##  26 castlemart - 2 def1         8.17e-05 0.1642 Inf   0.000  0.9997
##  26 castlemart - 3 def1        -2.07e-02 0.1641 Inf  -0.126  0.9592
##  26 castlemart - 4 def1        -1.40e-01 0.1720 Inf  -0.815  0.6730
##  26 castlemart - 5 def1        -2.36e-01 0.1687 Inf  -1.397  0.4153
##  26 castlemart - 6 def1        -6.40e-02 0.1693 Inf  -0.378  0.8640
##  26 castlemart - 7 def1        -7.14e-02 0.1683 Inf  -0.424  0.8458
##  26 castlemart - 8 def1         2.35e-01 0.1702 Inf   1.381  0.4230
##  26 castlemart - 9 def1        -2.43e-01 0.1726 Inf  -1.408  0.4104
##  26 castlemart - 10 def1       -5.84e-02 0.1779 Inf  -0.328  0.8829
##  26 castlemart - 11 def1       -2.00e-01 0.1682 Inf  -1.186  0.5074
##  26 castlemart - 12 def1       -1.17e-01 0.1649 Inf  -0.710  0.7203
##  26 castlemart - 13 def1       -3.63e-02 0.1687 Inf  -0.215  0.9278
##  26 castlemart - 14 def1       -3.85e-01 0.1669 Inf  -2.305  0.1289
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##  26 castlemart - 15 def1        5.43e-02 0.1699 Inf   0.320  0.8855
##  26 castlemart - 16 def1        9.82e-02 0.1604 Inf   0.612  0.7642
##  26 castlemart - 17 def1        1.05e-03 0.1667 Inf   0.006  0.9969
##  26 castlemart - 18 def1        2.42e-02 0.1729 Inf   0.140  0.9550
##  26 castlemart - 19 def1        5.96e-01 0.1906 Inf   3.128  0.0300
##  26 castlemart - 20 def1        7.69e-02 0.1697 Inf   0.453  0.8311
##  26 castlemart - 22 def1       -1.47e-01 0.1670 Inf  -0.879  0.6458
##  26 castlemart - 23 def1        2.98e-01 0.1786 Inf   1.667  0.3145
##  26 castlemart - 24 def1       -6.24e-02 0.1716 Inf  -0.364  0.8707
##  26 castlemart - 25 def1        3.66e-02 0.1732 Inf   0.211  0.9293
##  26 castlemart - 26 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  26 castlemart - 27 def1       -1.81e-01 0.1714 Inf  -1.054  0.5621
##  26 castlemart - 28 def1       -7.77e-02 0.1673 Inf  -0.465  0.8282
##  26 castlemart - 29 def1        1.17e-01 0.1666 Inf   0.702  0.7218
##  26 castlemart - 30 def1        9.05e-02 0.1710 Inf   0.530  0.8013
##  26 castlemart - 31 def1       -2.45e-01 0.1620 Inf  -1.515  0.3698
##  26 castlemart - 32 def1        3.41e-01 0.1729 Inf   1.971  0.2136
##  26 castlemart - 33 def1        2.59e-01 0.1671 Inf   1.552  0.3574
##  26 castlemart - 34 def1       -2.16e-01 0.1655 Inf  -1.302  0.4569
##  26 castlemart - 35 def1        3.27e-02 0.1713 Inf   0.191  0.9356
##  26 castlemart - 36 def1       -2.24e-01 0.1695 Inf  -1.320  0.4498
##  26 castlemart - 37 def1        1.57e-01 0.1750 Inf   0.895  0.6360
##  26 castlemart - 38 def1        6.61e-02 0.1691 Inf   0.391  0.8581
##  26 castlemart - 39 def1        1.66e-02 0.1847 Inf   0.090  0.9732
##  26 castlemart - 41 def1        1.35e-02 0.1686 Inf   0.080  0.9747
##  26 castlemart - 42 def1       -1.00e-01 0.1703 Inf  -0.589  0.7728
##  26 castlemart - 43 def1        1.31e-01 0.1669 Inf   0.785  0.6857
##  26 castlemart - 44 def1       -3.84e-01 0.1684 Inf  -2.283  0.1335
##  26 castlemart - 45 def1       -5.32e-02 0.1678 Inf  -0.317  0.8867
##  26 castlemart - 46 def1       -1.90e-01 0.1694 Inf  -1.120  0.5355
##  26 castlemart - 47 def1        2.89e-01 0.1644 Inf   1.759  0.2800
##  26 castlemart - 48 def1       -4.28e-01 0.1662 Inf  -2.577  0.0865
##  26 castlemart - 49 def1       -1.28e-01 0.1652 Inf  -0.773  0.6912
##  26 castlemart - 50 def1       -1.76e-03 0.1672 Inf  -0.011  0.9961
##  26 castlemart - 51 def1       -3.55e-01 0.1697 Inf  -2.090  0.1803
##  26 castlemart - 52 def1       -2.02e-01 0.1708 Inf  -1.182  0.5091
##  26 castlemart - 53 def1       -5.26e-02 0.1684 Inf  -0.312  0.8893
##  26 castlemart - 54 def1       -1.76e-01 0.1660 Inf  -1.062  0.5584
##  26 castlemart - 55 def1       -4.39e-02 0.1615 Inf  -0.272  0.9051
##  26 castlemart - 56 def1       -9.86e-02 0.1753 Inf  -0.562  0.7868
##  26 castlemart - 57 def1       -1.69e-01 0.1699 Inf  -0.993  0.5913
##  26 castlemart - 58 def1       -2.25e-01 0.1697 Inf  -1.325  0.4469
##  26 castlemart - 59 def1        1.25e-01 0.1745 Inf   0.718  0.7171
##  26 castlemart - 60 def1        1.92e-02 0.1685 Inf   0.114  0.9630
##  26 castlemart - 61 def1       -2.44e-01 0.1684 Inf  -1.450  0.3929
##  27 castlemart - 28 castlemart  1.03e-01 0.1697 Inf   0.607  0.7661
##  27 castlemart - 29 castlemart  2.98e-01 0.1645 Inf   1.810  0.2622
##  27 castlemart - 30 castlemart  2.71e-01 0.1685 Inf   1.609  0.3347
##  27 castlemart - 31 castlemart -6.47e-02 0.1610 Inf  -0.402  0.8528
##  27 castlemart - 32 castlemart  5.22e-01 0.1658 Inf   3.147  0.0293
##  27 castlemart - 33 castlemart  4.40e-01 0.1671 Inf   2.634  0.0783
##  27 castlemart - 34 castlemart -3.50e-02 0.1620 Inf  -0.216  0.9278
##  27 castlemart - 35 castlemart  2.13e-01 0.1702 Inf   1.254  0.4792
##  27 castlemart - 36 castlemart -4.31e-02 0.1666 Inf  -0.259  0.9097
##  27 castlemart - 37 castlemart  3.37e-01 0.1717 Inf   1.965  0.2155
##  27 castlemart - 38 castlemart  2.47e-01 0.1655 Inf   1.490  0.3788
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##  27 castlemart - 39 castlemart  1.97e-01 0.1774 Inf   1.112  0.5389
##  27 castlemart - 41 castlemart  1.94e-01 0.1653 Inf   1.174  0.5122
##  27 castlemart - 42 castlemart  8.04e-02 0.1677 Inf   0.480  0.8236
##  27 castlemart - 43 castlemart  3.12e-01 0.1654 Inf   1.885  0.2379
##  27 castlemart - 44 castlemart -2.04e-01 0.1674 Inf  -1.217  0.4930
##  27 castlemart - 45 castlemart  1.27e-01 0.1671 Inf   0.762  0.6973
##  27 castlemart - 46 castlemart -9.05e-03 0.1699 Inf  -0.053  0.9814
##  27 castlemart - 47 castlemart  4.70e-01 0.1644 Inf   2.859  0.0516
##  27 castlemart - 48 castlemart -2.48e-01 0.1674 Inf  -1.480  0.3821
##  27 castlemart - 49 castlemart  5.29e-02 0.1615 Inf   0.328  0.8829
##  27 castlemart - 50 castlemart  1.79e-01 0.1667 Inf   1.073  0.5539
##  27 castlemart - 51 castlemart -1.74e-01 0.1659 Inf  -1.049  0.5647
##  27 castlemart - 52 castlemart -2.12e-02 0.1662 Inf  -0.128  0.9585
##  27 castlemart - 53 castlemart  1.28e-01 0.1654 Inf   0.774  0.6908
##  27 castlemart - 54 castlemart  4.29e-03 0.1640 Inf   0.026  0.9904
##  27 castlemart - 55 castlemart  1.37e-01 0.1647 Inf   0.830  0.6658
##  27 castlemart - 56 castlemart  8.21e-02 0.1718 Inf   0.478  0.8242
##  27 castlemart - 57 castlemart  1.19e-02 0.1678 Inf   0.071  0.9766
##  27 castlemart - 58 castlemart -4.42e-02 0.1646 Inf  -0.269  0.9062
##  27 castlemart - 59 castlemart  3.06e-01 0.1729 Inf   1.769  0.2759
##  27 castlemart - 60 castlemart  2.00e-01 0.1645 Inf   1.215  0.4934
##  27 castlemart - 61 castlemart -6.36e-02 0.1667 Inf  -0.382  0.8618
##  27 castlemart - 1 def1         3.56e-01 0.1642 Inf   2.168  0.1605
##  27 castlemart - 2 def1         1.14e-01 0.1654 Inf   0.688  0.7287
##  27 castlemart - 3 def1         9.31e-02 0.1676 Inf   0.555  0.7901
##  27 castlemart - 4 def1        -2.63e-02 0.1706 Inf  -0.154  0.9509
##  27 castlemart - 5 def1        -1.22e-01 0.1648 Inf  -0.739  0.7067
##  27 castlemart - 6 def1         4.98e-02 0.1679 Inf   0.297  0.8955
##  27 castlemart - 7 def1         4.23e-02 0.1666 Inf   0.254  0.9117
##  27 castlemart - 8 def1         3.49e-01 0.1725 Inf   2.023  0.1997
##  27 castlemart - 9 def1        -1.29e-01 0.1730 Inf  -0.747  0.7023
##  27 castlemart - 10 def1        5.53e-02 0.1786 Inf   0.310  0.8898
##  27 castlemart - 11 def1       -8.58e-02 0.1698 Inf  -0.505  0.8115
##  27 castlemart - 12 def1       -3.37e-03 0.1662 Inf  -0.020  0.9933
##  27 castlemart - 13 def1        7.74e-02 0.1676 Inf   0.462  0.8291
##  27 castlemart - 14 def1       -2.71e-01 0.1664 Inf  -1.628  0.3286
##  27 castlemart - 15 def1        1.68e-01 0.1703 Inf   0.987  0.5946
##  27 castlemart - 16 def1        2.12e-01 0.1623 Inf   1.306  0.4555
##  27 castlemart - 17 def1        1.15e-01 0.1693 Inf   0.678  0.7333
##  27 castlemart - 18 def1        1.38e-01 0.1703 Inf   0.810  0.6750
##  27 castlemart - 19 def1        7.10e-01 0.1907 Inf   3.723  0.0078
##  27 castlemart - 20 def1        1.91e-01 0.1729 Inf   1.103  0.5417
##  27 castlemart - 22 def1       -3.30e-02 0.1694 Inf  -0.195  0.9339
##  27 castlemart - 23 def1        4.11e-01 0.1840 Inf   2.236  0.1437
##  27 castlemart - 24 def1        5.14e-02 0.1713 Inf   0.300  0.8942
##  27 castlemart - 25 def1        1.50e-01 0.1718 Inf   0.875  0.6476
##  27 castlemart - 26 def1        4.69e-02 0.1714 Inf   0.273  0.9051
##  27 castlemart - 27 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  27 castlemart - 28 def1        3.60e-02 0.1724 Inf   0.209  0.9301
##  27 castlemart - 29 def1        2.31e-01 0.1668 Inf   1.384  0.4220
##  27 castlemart - 30 def1        2.04e-01 0.1709 Inf   1.195  0.5026
##  27 castlemart - 31 def1       -1.32e-01 0.1637 Inf  -0.804  0.6776
##  27 castlemart - 32 def1        4.55e-01 0.1684 Inf   2.700  0.0682
##  27 castlemart - 33 def1        3.73e-01 0.1694 Inf   2.202  0.1530
##  27 castlemart - 34 def1       -1.02e-01 0.1645 Inf  -0.619  0.7615
##  27 castlemart - 35 def1        1.46e-01 0.1726 Inf   0.849  0.6578
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##  27 castlemart - 36 def1       -1.10e-01 0.1693 Inf  -0.650  0.7458
##  27 castlemart - 37 def1        2.70e-01 0.1740 Inf   1.554  0.3565
##  27 castlemart - 38 def1        1.80e-01 0.1676 Inf   1.073  0.5539
##  27 castlemart - 39 def1        1.30e-01 0.1796 Inf   0.726  0.7138
##  27 castlemart - 41 def1        1.27e-01 0.1677 Inf   0.759  0.6995
##  27 castlemart - 42 def1        1.35e-02 0.1704 Inf   0.079  0.9750
##  27 castlemart - 43 def1        2.45e-01 0.1678 Inf   1.459  0.3923
##  27 castlemart - 44 def1       -2.71e-01 0.1697 Inf  -1.595  0.3400
##  27 castlemart - 45 def1        6.05e-02 0.1693 Inf   0.358  0.8736
##  27 castlemart - 46 def1       -7.59e-02 0.1729 Inf  -0.439  0.8374
##  27 castlemart - 47 def1        4.03e-01 0.1667 Inf   2.418  0.1142
##  27 castlemart - 48 def1       -3.15e-01 0.1698 Inf  -1.853  0.2473
##  27 castlemart - 49 def1       -1.40e-02 0.1642 Inf  -0.085  0.9741
##  27 castlemart - 50 def1        1.12e-01 0.1688 Inf   0.663  0.7404
##  27 castlemart - 51 def1       -2.41e-01 0.1680 Inf  -1.434  0.3988
##  27 castlemart - 52 def1       -8.81e-02 0.1686 Inf  -0.522  0.8065
##  27 castlemart - 53 def1        6.12e-02 0.1681 Inf   0.364  0.8707
##  27 castlemart - 54 def1       -6.26e-02 0.1666 Inf  -0.376  0.8652
##  27 castlemart - 55 def1        6.98e-02 0.1672 Inf   0.418  0.8486
##  27 castlemart - 56 def1        1.52e-02 0.1742 Inf   0.087  0.9740
##  27 castlemart - 57 def1       -5.50e-02 0.1702 Inf  -0.323  0.8848
##  27 castlemart - 58 def1       -1.11e-01 0.1672 Inf  -0.665  0.7396
##  27 castlemart - 59 def1        2.39e-01 0.1752 Inf   1.364  0.4303
##  27 castlemart - 60 def1        1.33e-01 0.1667 Inf   0.798  0.6810
##  27 castlemart - 61 def1       -1.31e-01 0.1691 Inf  -0.772  0.6918
##  28 castlemart - 29 castlemart  1.95e-01 0.1670 Inf   1.166  0.5160
##  28 castlemart - 30 castlemart  1.68e-01 0.1683 Inf   1.000  0.5880
##  28 castlemart - 31 castlemart -1.68e-01 0.1595 Inf  -1.051  0.5637
##  28 castlemart - 32 castlemart  4.19e-01 0.1697 Inf   2.467  0.1052
##  28 castlemart - 33 castlemart  3.37e-01 0.1648 Inf   2.045  0.1932
##  28 castlemart - 34 castlemart -1.38e-01 0.1622 Inf  -0.850  0.6576
##  28 castlemart - 35 castlemart  1.10e-01 0.1691 Inf   0.653  0.7443
##  28 castlemart - 36 castlemart -1.46e-01 0.1675 Inf  -0.872  0.6492
##  28 castlemart - 37 castlemart  2.34e-01 0.1704 Inf   1.376  0.4252
##  28 castlemart - 38 castlemart  1.44e-01 0.1668 Inf   0.862  0.6530
##  28 castlemart - 39 castlemart  9.43e-02 0.1823 Inf   0.517  0.8066
##  28 castlemart - 41 castlemart  9.12e-02 0.1655 Inf   0.551  0.7913
##  28 castlemart - 42 castlemart -2.25e-02 0.1669 Inf  -0.135  0.9561
##  28 castlemart - 43 castlemart  2.09e-01 0.1644 Inf   1.270  0.4719
##  28 castlemart - 44 castlemart -3.07e-01 0.1676 Inf  -1.830  0.2562
##  28 castlemart - 45 castlemart  2.45e-02 0.1652 Inf   0.148  0.9526
##  28 castlemart - 46 castlemart -1.12e-01 0.1672 Inf  -0.670  0.7376
##  28 castlemart - 47 castlemart  3.67e-01 0.1636 Inf   2.242  0.1423
##  28 castlemart - 48 castlemart -3.51e-01 0.1662 Inf  -2.111  0.1750
##  28 castlemart - 49 castlemart -5.00e-02 0.1626 Inf  -0.308  0.8901
##  28 castlemart - 50 castlemart  7.59e-02 0.1655 Inf   0.459  0.8291
##  28 castlemart - 51 castlemart -2.77e-01 0.1684 Inf  -1.645  0.3226
##  28 castlemart - 52 castlemart -1.24e-01 0.1640 Inf  -0.757  0.6995
##  28 castlemart - 53 castlemart  2.51e-02 0.1641 Inf   0.153  0.9512
##  28 castlemart - 54 castlemart -9.86e-02 0.1626 Inf  -0.607  0.7661
##  28 castlemart - 55 castlemart  3.38e-02 0.1623 Inf   0.208  0.9301
##  28 castlemart - 56 castlemart -2.09e-02 0.1717 Inf  -0.122  0.9601
##  28 castlemart - 57 castlemart -9.10e-02 0.1645 Inf  -0.553  0.7901
##  28 castlemart - 58 castlemart -1.47e-01 0.1646 Inf  -0.894  0.6367
##  28 castlemart - 59 castlemart  2.03e-01 0.1719 Inf   1.181  0.5093
##  28 castlemart - 60 castlemart  9.69e-02 0.1642 Inf   0.590  0.7727
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##  28 castlemart - 61 castlemart -1.67e-01 0.1636 Inf  -1.018  0.5780
##  28 castlemart - 1 def1         2.53e-01 0.1635 Inf   1.547  0.3588
##  28 castlemart - 2 def1         1.09e-02 0.1602 Inf   0.068  0.9784
##  28 castlemart - 3 def1        -9.84e-03 0.1648 Inf  -0.060  0.9801
##  28 castlemart - 4 def1        -1.29e-01 0.1712 Inf  -0.755  0.6995
##  28 castlemart - 5 def1        -2.25e-01 0.1658 Inf  -1.356  0.4348
##  28 castlemart - 6 def1        -5.32e-02 0.1674 Inf  -0.318  0.8864
##  28 castlemart - 7 def1        -6.06e-02 0.1694 Inf  -0.358  0.8736
##  28 castlemart - 8 def1         2.46e-01 0.1711 Inf   1.437  0.3975
##  28 castlemart - 9 def1        -2.32e-01 0.1716 Inf  -1.353  0.4354
##  28 castlemart - 10 def1       -4.76e-02 0.1750 Inf  -0.272  0.9051
##  28 castlemart - 11 def1       -1.89e-01 0.1669 Inf  -1.130  0.5320
##  28 castlemart - 12 def1       -1.06e-01 0.1658 Inf  -0.641  0.7508
##  28 castlemart - 13 def1       -2.55e-02 0.1675 Inf  -0.152  0.9516
##  28 castlemart - 14 def1       -3.74e-01 0.1665 Inf  -2.245  0.1416
##  28 castlemart - 15 def1        6.51e-02 0.1646 Inf   0.396  0.8556
##  28 castlemart - 16 def1        1.09e-01 0.1611 Inf   0.677  0.7341
##  28 castlemart - 17 def1        1.19e-02 0.1660 Inf   0.071  0.9766
##  28 castlemart - 18 def1        3.50e-02 0.1719 Inf   0.204  0.9312
##  28 castlemart - 19 def1        6.07e-01 0.1900 Inf   3.195  0.0271
##  28 castlemart - 20 def1        8.77e-02 0.1691 Inf   0.519  0.8066
##  28 castlemart - 22 def1       -1.36e-01 0.1665 Inf  -0.817  0.6730
##  28 castlemart - 23 def1        3.09e-01 0.1807 Inf   1.707  0.2987
##  28 castlemart - 24 def1       -5.16e-02 0.1715 Inf  -0.301  0.8941
##  28 castlemart - 25 def1        4.74e-02 0.1722 Inf   0.275  0.9041
##  28 castlemart - 26 def1       -5.61e-02 0.1668 Inf  -0.336  0.8808
##  28 castlemart - 27 def1       -1.70e-01 0.1719 Inf  -0.988  0.5940
##  28 castlemart - 28 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  28 castlemart - 29 def1        1.28e-01 0.1690 Inf   0.757  0.6995
##  28 castlemart - 30 def1        1.01e-01 0.1705 Inf   0.594  0.7708
##  28 castlemart - 31 def1       -2.35e-01 0.1620 Inf  -1.448  0.3931
##  28 castlemart - 32 def1        3.52e-01 0.1721 Inf   2.044  0.1933
##  28 castlemart - 33 def1        2.70e-01 0.1670 Inf   1.618  0.3313
##  28 castlemart - 34 def1       -2.05e-01 0.1644 Inf  -1.245  0.4823
##  28 castlemart - 35 def1        4.36e-02 0.1712 Inf   0.254  0.9117
##  28 castlemart - 36 def1       -2.13e-01 0.1699 Inf  -1.253  0.4794
##  28 castlemart - 37 def1        1.68e-01 0.1725 Inf   0.971  0.6015
##  28 castlemart - 38 def1        7.69e-02 0.1686 Inf   0.456  0.8302
##  28 castlemart - 39 def1        2.74e-02 0.1842 Inf   0.149  0.9526
##  28 castlemart - 41 def1        2.43e-02 0.1677 Inf   0.145  0.9535
##  28 castlemart - 42 def1       -8.94e-02 0.1694 Inf  -0.528  0.8027
##  28 castlemart - 43 def1        1.42e-01 0.1666 Inf   0.852  0.6572
##  28 castlemart - 44 def1       -3.74e-01 0.1697 Inf  -2.202  0.1531
##  28 castlemart - 45 def1       -4.24e-02 0.1672 Inf  -0.254  0.9117
##  28 castlemart - 46 def1       -1.79e-01 0.1699 Inf  -1.052  0.5630
##  28 castlemart - 47 def1        3.00e-01 0.1657 Inf   1.810  0.2622
##  28 castlemart - 48 def1       -4.18e-01 0.1683 Inf  -2.481  0.1030
##  28 castlemart - 49 def1       -1.17e-01 0.1650 Inf  -0.708  0.7205
##  28 castlemart - 50 def1        9.05e-03 0.1674 Inf   0.054  0.9814
##  28 castlemart - 51 def1       -3.44e-01 0.1702 Inf  -2.020  0.2006
##  28 castlemart - 52 def1       -1.91e-01 0.1662 Inf  -1.149  0.5242
##  28 castlemart - 53 def1       -4.17e-02 0.1666 Inf  -0.251  0.9131
##  28 castlemart - 54 def1       -1.66e-01 0.1650 Inf  -1.003  0.5862
##  28 castlemart - 55 def1       -3.31e-02 0.1646 Inf  -0.201  0.9314
##  28 castlemart - 56 def1       -8.78e-02 0.1740 Inf  -0.504  0.8119
##  28 castlemart - 57 def1       -1.58e-01 0.1668 Inf  -0.947  0.6159
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##  28 castlemart - 58 def1       -2.14e-01 0.1669 Inf  -1.282  0.4667
##  28 castlemart - 59 def1        1.36e-01 0.1739 Inf   0.782  0.6874
##  28 castlemart - 60 def1        3.00e-02 0.1662 Inf   0.181  0.9384
##  28 castlemart - 61 def1       -2.33e-01 0.1657 Inf  -1.409  0.4104
##  29 castlemart - 30 castlemart -2.65e-02 0.1625 Inf  -0.163  0.9468
##  29 castlemart - 31 castlemart -3.62e-01 0.1541 Inf  -2.352  0.1266
##  29 castlemart - 32 castlemart  2.24e-01 0.1677 Inf   1.335  0.4435
##  29 castlemart - 33 castlemart  1.42e-01 0.1630 Inf   0.873  0.6484
##  29 castlemart - 34 castlemart -3.33e-01 0.1607 Inf  -2.070  0.1860
##  29 castlemart - 35 castlemart -8.43e-02 0.1625 Inf  -0.519  0.8066
##  29 castlemart - 36 castlemart -3.41e-01 0.1609 Inf  -2.118  0.1728
##  29 castlemart - 37 castlemart  3.97e-02 0.1709 Inf   0.232  0.9210
##  29 castlemart - 38 castlemart -5.10e-02 0.1647 Inf  -0.310  0.8898
##  29 castlemart - 39 castlemart -1.00e-01 0.1775 Inf  -0.566  0.7859
##  29 castlemart - 41 castlemart -1.04e-01 0.1648 Inf  -0.629  0.7580
##  29 castlemart - 42 castlemart -2.17e-01 0.1648 Inf  -1.318  0.4501
##  29 castlemart - 43 castlemart  1.40e-02 0.1644 Inf   0.085  0.9741
##  29 castlemart - 44 castlemart -5.01e-01 0.1615 Inf  -3.105  0.0318
##  29 castlemart - 45 castlemart -1.70e-01 0.1641 Inf  -1.038  0.5703
##  29 castlemart - 46 castlemart -3.07e-01 0.1658 Inf  -1.850  0.2485
##  29 castlemart - 47 castlemart  1.72e-01 0.1616 Inf   1.066  0.5566
##  29 castlemart - 48 castlemart -5.45e-01 0.1616 Inf  -3.376  0.0176
##  29 castlemart - 49 castlemart -2.45e-01 0.1601 Inf  -1.528  0.3657
##  29 castlemart - 50 castlemart -1.19e-01 0.1638 Inf  -0.725  0.7138
##  29 castlemart - 51 castlemart -4.72e-01 0.1574 Inf  -2.996  0.0386
##  29 castlemart - 52 castlemart -3.19e-01 0.1661 Inf  -1.920  0.2279
##  29 castlemart - 53 castlemart -1.70e-01 0.1627 Inf  -1.042  0.5677
##  29 castlemart - 54 castlemart -2.93e-01 0.1609 Inf  -1.823  0.2592
##  29 castlemart - 55 castlemart -1.61e-01 0.1584 Inf  -1.016  0.5789
##  29 castlemart - 56 castlemart -2.16e-01 0.1686 Inf  -1.279  0.4684
##  29 castlemart - 57 castlemart -2.86e-01 0.1654 Inf  -1.728  0.2914
##  29 castlemart - 58 castlemart -3.42e-01 0.1648 Inf  -2.075  0.1851
##  29 castlemart - 59 castlemart  8.21e-03 0.1677 Inf   0.049  0.9821
##  29 castlemart - 60 castlemart -9.78e-02 0.1638 Inf  -0.597  0.7693
##  29 castlemart - 61 castlemart -3.61e-01 0.1650 Inf  -2.190  0.1553
##  29 castlemart - 1 def1         5.83e-02 0.1601 Inf   0.364  0.8707
##  29 castlemart - 2 def1        -1.84e-01 0.1634 Inf  -1.125  0.5334
##  29 castlemart - 3 def1        -2.05e-01 0.1651 Inf  -1.239  0.4835
##  29 castlemart - 4 def1        -3.24e-01 0.1696 Inf  -1.911  0.2306
##  29 castlemart - 5 def1        -4.20e-01 0.1655 Inf  -2.534  0.0940
##  29 castlemart - 6 def1        -2.48e-01 0.1672 Inf  -1.482  0.3813
##  29 castlemart - 7 def1        -2.55e-01 0.1610 Inf  -1.586  0.3437
##  29 castlemart - 8 def1         5.11e-02 0.1685 Inf   0.303  0.8922
##  29 castlemart - 9 def1        -4.27e-01 0.1694 Inf  -2.520  0.0965
##  29 castlemart - 10 def1       -2.42e-01 0.1743 Inf  -1.390  0.4190
##  29 castlemart - 11 def1       -3.83e-01 0.1669 Inf  -2.297  0.1303
##  29 castlemart - 12 def1       -3.01e-01 0.1632 Inf  -1.844  0.2511
##  29 castlemart - 13 def1       -2.20e-01 0.1669 Inf  -1.320  0.4498
##  29 castlemart - 14 def1       -5.69e-01 0.1667 Inf  -3.411  0.0161
##  29 castlemart - 15 def1       -1.30e-01 0.1663 Inf  -0.779  0.6885
##  29 castlemart - 16 def1       -8.57e-02 0.1614 Inf  -0.531  0.8013
##  29 castlemart - 17 def1       -1.83e-01 0.1659 Inf  -1.103  0.5417
##  29 castlemart - 18 def1       -1.60e-01 0.1707 Inf  -0.936  0.6201
##  29 castlemart - 19 def1        4.12e-01 0.1883 Inf   2.190  0.1553
##  29 castlemart - 20 def1       -1.07e-01 0.1680 Inf  -0.637  0.7534
##  29 castlemart - 22 def1       -3.31e-01 0.1653 Inf  -2.000  0.2052
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##  29 castlemart - 23 def1        1.14e-01 0.1815 Inf   0.627  0.7586
##  29 castlemart - 24 def1       -2.46e-01 0.1708 Inf  -1.442  0.3964
##  29 castlemart - 25 def1       -1.47e-01 0.1692 Inf  -0.871  0.6496
##  29 castlemart - 26 def1       -2.51e-01 0.1671 Inf  -1.501  0.3750
##  29 castlemart - 27 def1       -3.65e-01 0.1672 Inf  -2.180  0.1570
##  29 castlemart - 28 def1       -2.62e-01 0.1699 Inf  -1.540  0.3611
##  29 castlemart - 29 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  29 castlemart - 30 def1       -9.34e-02 0.1652 Inf  -0.565  0.7861
##  29 castlemart - 31 def1       -4.29e-01 0.1571 Inf  -2.732  0.0648
##  29 castlemart - 32 def1        1.57e-01 0.1705 Inf   0.921  0.6241
##  29 castlemart - 33 def1        7.54e-02 0.1656 Inf   0.455  0.8302
##  29 castlemart - 34 def1       -4.00e-01 0.1634 Inf  -2.445  0.1096
##  29 castlemart - 35 def1       -1.51e-01 0.1652 Inf  -0.915  0.6274
##  29 castlemart - 36 def1       -4.08e-01 0.1639 Inf  -2.488  0.1015
##  29 castlemart - 37 def1       -2.72e-02 0.1735 Inf  -0.157  0.9499
##  29 castlemart - 38 def1       -1.18e-01 0.1669 Inf  -0.706  0.7211
##  29 castlemart - 39 def1       -1.67e-01 0.1799 Inf  -0.930  0.6209
##  29 castlemart - 41 def1       -1.70e-01 0.1674 Inf  -1.018  0.5780
##  29 castlemart - 42 def1       -2.84e-01 0.1679 Inf  -1.693  0.3046
##  29 castlemart - 43 def1       -5.28e-02 0.1671 Inf  -0.316  0.8870
##  29 castlemart - 44 def1       -5.68e-01 0.1641 Inf  -3.463  0.0146
##  29 castlemart - 45 def1       -2.37e-01 0.1665 Inf  -1.424  0.4034
##  29 castlemart - 46 def1       -3.74e-01 0.1691 Inf  -2.210  0.1508
##  29 castlemart - 47 def1        1.05e-01 0.1641 Inf   0.642  0.7506
##  29 castlemart - 48 def1       -6.12e-01 0.1642 Inf  -3.729  0.0076
##  29 castlemart - 49 def1       -3.12e-01 0.1631 Inf  -1.911  0.2304
##  29 castlemart - 50 def1       -1.86e-01 0.1662 Inf  -1.118  0.5360
##  29 castlemart - 51 def1       -5.39e-01 0.1599 Inf  -3.369  0.0180
##  29 castlemart - 52 def1       -3.86e-01 0.1687 Inf  -2.286  0.1327
##  29 castlemart - 53 def1       -2.36e-01 0.1657 Inf  -1.428  0.4013
##  29 castlemart - 54 def1       -3.60e-01 0.1639 Inf  -2.199  0.1539
##  29 castlemart - 55 def1       -2.28e-01 0.1612 Inf  -1.413  0.4087
##  29 castlemart - 56 def1       -2.83e-01 0.1713 Inf  -1.649  0.3211
##  29 castlemart - 57 def1       -3.53e-01 0.1681 Inf  -2.098  0.1788
##  29 castlemart - 58 def1       -4.09e-01 0.1675 Inf  -2.440  0.1105
##  29 castlemart - 59 def1       -5.87e-02 0.1702 Inf  -0.345  0.8775
##  29 castlemart - 60 def1       -1.65e-01 0.1663 Inf  -0.991  0.5930
##  29 castlemart - 61 def1       -4.28e-01 0.1676 Inf  -2.555  0.0904
##  30 castlemart - 31 castlemart -3.36e-01 0.1554 Inf  -2.161  0.1607
##  30 castlemart - 32 castlemart  2.50e-01 0.1652 Inf   1.516  0.3696
##  30 castlemart - 33 castlemart  1.69e-01 0.1651 Inf   1.022  0.5757
##  30 castlemart - 34 castlemart -3.06e-01 0.1631 Inf  -1.877  0.2400
##  30 castlemart - 35 castlemart -5.78e-02 0.1665 Inf  -0.347  0.8764
##  30 castlemart - 36 castlemart -3.14e-01 0.1650 Inf  -1.905  0.2323
##  30 castlemart - 37 castlemart  6.62e-02 0.1695 Inf   0.390  0.8581
##  30 castlemart - 38 castlemart -2.45e-02 0.1619 Inf  -0.151  0.9520
##  30 castlemart - 39 castlemart -7.39e-02 0.1774 Inf  -0.417  0.8487
##  30 castlemart - 41 castlemart -7.71e-02 0.1647 Inf  -0.468  0.8276
##  30 castlemart - 42 castlemart -1.91e-01 0.1628 Inf  -1.172  0.5132
##  30 castlemart - 43 castlemart  4.05e-02 0.1656 Inf   0.245  0.9149
##  30 castlemart - 44 castlemart -4.75e-01 0.1658 Inf  -2.865  0.0509
##  30 castlemart - 45 castlemart -1.44e-01 0.1638 Inf  -0.878  0.6463
##  30 castlemart - 46 castlemart -2.80e-01 0.1674 Inf  -1.674  0.3115
##  30 castlemart - 47 castlemart  1.99e-01 0.1633 Inf   1.216  0.4930
##  30 castlemart - 48 castlemart -5.19e-01 0.1629 Inf  -3.185  0.0272
##  30 castlemart - 49 castlemart -2.18e-01 0.1649 Inf  -1.323  0.4477
```

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##  30 castlemart - 50 castlemart -9.23e-02 0.1664 Inf  -0.555  0.7901
##  30 castlemart - 51 castlemart -4.45e-01 0.1674 Inf  -2.659  0.0744
##  30 castlemart - 52 castlemart -2.92e-01 0.1671 Inf  -1.750  0.2843
##  30 castlemart - 53 castlemart -1.43e-01 0.1628 Inf  -0.879  0.6458
##  30 castlemart - 54 castlemart -2.67e-01 0.1596 Inf  -1.672  0.3121
##  30 castlemart - 55 castlemart -1.34e-01 0.1625 Inf  -0.828  0.6670
##  30 castlemart - 56 castlemart -1.89e-01 0.1689 Inf  -1.120  0.5355
##  30 castlemart - 57 castlemart -2.59e-01 0.1663 Inf  -1.559  0.3542
##  30 castlemart - 58 castlemart -3.15e-01 0.1631 Inf  -1.933  0.2252
##  30 castlemart - 59 castlemart  3.47e-02 0.1713 Inf   0.203  0.9313
##  30 castlemart - 60 castlemart -7.13e-02 0.1622 Inf  -0.440  0.8373
##  30 castlemart - 61 castlemart -3.35e-01 0.1659 Inf  -2.018  0.2006
##  30 castlemart - 1 def1         8.48e-02 0.1637 Inf   0.518  0.8066
##  30 castlemart - 2 def1        -1.57e-01 0.1642 Inf  -0.958  0.6091
##  30 castlemart - 3 def1        -1.78e-01 0.1660 Inf  -1.073  0.5540
##  30 castlemart - 4 def1        -2.98e-01 0.1671 Inf  -1.780  0.2727
##  30 castlemart - 5 def1        -3.93e-01 0.1669 Inf  -2.354  0.1260
##  30 castlemart - 6 def1        -2.21e-01 0.1682 Inf  -1.316  0.4509
##  30 castlemart - 7 def1        -2.29e-01 0.1655 Inf  -1.383  0.4223
##  30 castlemart - 8 def1         7.76e-02 0.1619 Inf   0.480  0.8236
##  30 castlemart - 9 def1        -4.01e-01 0.1682 Inf  -2.381  0.1211
##  30 castlemart - 10 def1       -2.16e-01 0.1768 Inf  -1.221  0.4920
##  30 castlemart - 11 def1       -3.57e-01 0.1655 Inf  -2.157  0.1619
##  30 castlemart - 12 def1       -2.75e-01 0.1659 Inf  -1.655  0.3188
##  30 castlemart - 13 def1       -1.94e-01 0.1641 Inf  -1.181  0.5093
##  30 castlemart - 14 def1       -5.42e-01 0.1669 Inf  -3.247  0.0243
##  30 castlemart - 15 def1       -1.03e-01 0.1661 Inf  -0.621  0.7610
##  30 castlemart - 16 def1       -5.92e-02 0.1626 Inf  -0.364  0.8707
##  30 castlemart - 17 def1       -1.56e-01 0.1678 Inf  -0.932  0.6201
##  30 castlemart - 18 def1       -1.33e-01 0.1690 Inf  -0.788  0.6847
##  30 castlemart - 19 def1        4.39e-01 0.1848 Inf   2.375  0.1219
##  30 castlemart - 20 def1       -8.05e-02 0.1685 Inf  -0.478  0.8242
##  30 castlemart - 22 def1       -3.04e-01 0.1660 Inf  -1.833  0.2556
##  30 castlemart - 23 def1        1.40e-01 0.1826 Inf   0.768  0.6939
##  30 castlemart - 24 def1       -2.20e-01 0.1709 Inf  -1.286  0.4650
##  30 castlemart - 25 def1       -1.21e-01 0.1651 Inf  -0.732  0.7092
##  30 castlemart - 26 def1       -2.24e-01 0.1710 Inf  -1.312  0.4524
##  30 castlemart - 27 def1       -3.38e-01 0.1710 Inf  -1.977  0.2116
##  30 castlemart - 28 def1       -2.35e-01 0.1710 Inf  -1.375  0.4252
##  30 castlemart - 29 def1       -4.04e-02 0.1648 Inf  -0.245  0.9149
##  30 castlemart - 30 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  30 castlemart - 31 def1       -4.03e-01 0.1582 Inf  -2.546  0.0918
##  30 castlemart - 32 def1        1.83e-01 0.1679 Inf   1.093  0.5452
##  30 castlemart - 33 def1        1.02e-01 0.1675 Inf   0.608  0.7661
##  30 castlemart - 34 def1       -3.73e-01 0.1655 Inf  -2.253  0.1405
##  30 castlemart - 35 def1       -1.25e-01 0.1689 Inf  -0.738  0.7067
##  30 castlemart - 36 def1       -3.81e-01 0.1677 Inf  -2.273  0.1358
##  30 castlemart - 37 def1       -7.28e-04 0.1718 Inf  -0.004  0.9979
##  30 castlemart - 38 def1       -9.14e-02 0.1640 Inf  -0.557  0.7896
##  30 castlemart - 39 def1       -1.41e-01 0.1796 Inf  -0.784  0.6862
##  30 castlemart - 41 def1       -1.44e-01 0.1671 Inf  -0.862  0.6530
##  30 castlemart - 42 def1       -2.58e-01 0.1656 Inf  -1.556  0.3564
##  30 castlemart - 43 def1       -2.63e-02 0.1681 Inf  -0.157  0.9499
##  30 castlemart - 44 def1       -5.42e-01 0.1681 Inf  -3.223  0.0258
##  30 castlemart - 45 def1       -2.11e-01 0.1660 Inf  -1.269  0.4726
##  30 castlemart - 46 def1       -3.47e-01 0.1705 Inf  -2.036  0.1947
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##  30 castlemart - 47 def1        1.32e-01 0.1657 Inf   0.796  0.6812
##  30 castlemart - 48 def1       -5.86e-01 0.1654 Inf  -3.542  0.0126
##  30 castlemart - 49 def1       -2.85e-01 0.1676 Inf  -1.702  0.3012
##  30 castlemart - 50 def1       -1.59e-01 0.1685 Inf  -0.945  0.6162
##  30 castlemart - 51 def1       -5.12e-01 0.1695 Inf  -3.020  0.0371
##  30 castlemart - 52 def1       -3.59e-01 0.1695 Inf  -2.119  0.1725
##  30 castlemart - 53 def1       -2.10e-01 0.1656 Inf  -1.268  0.4729
##  30 castlemart - 54 def1       -3.34e-01 0.1623 Inf  -2.056  0.1900
##  30 castlemart - 55 def1       -2.01e-01 0.1651 Inf  -1.220  0.4927
##  30 castlemart - 56 def1       -2.56e-01 0.1714 Inf  -1.494  0.3783
##  30 castlemart - 57 def1       -3.26e-01 0.1688 Inf  -1.933  0.2254
##  30 castlemart - 58 def1       -3.82e-01 0.1657 Inf  -2.307  0.1286
##  30 castlemart - 59 def1       -3.22e-02 0.1736 Inf  -0.185  0.9373
##  30 castlemart - 60 def1       -1.38e-01 0.1645 Inf  -0.840  0.6614
##  30 castlemart - 61 def1       -4.02e-01 0.1683 Inf  -2.387  0.1200
##  31 castlemart - 32 castlemart  5.86e-01 0.1601 Inf   3.661  0.0092
##  31 castlemart - 33 castlemart  5.05e-01 0.1567 Inf   3.220  0.0259
##  31 castlemart - 34 castlemart  2.98e-02 0.1547 Inf   0.192  0.9352
##  31 castlemart - 35 castlemart  2.78e-01 0.1595 Inf   1.743  0.2865
##  31 castlemart - 36 castlemart  2.16e-02 0.1545 Inf   0.140  0.9550
##  31 castlemart - 37 castlemart  4.02e-01 0.1636 Inf   2.457  0.1072
##  31 castlemart - 38 castlemart  3.11e-01 0.1580 Inf   1.971  0.2136
##  31 castlemart - 39 castlemart  2.62e-01 0.1723 Inf   1.521  0.3680
##  31 castlemart - 41 castlemart  2.59e-01 0.1582 Inf   1.636  0.3257
##  31 castlemart - 42 castlemart  1.45e-01 0.1577 Inf   0.920  0.6241
##  31 castlemart - 43 castlemart  3.76e-01 0.1545 Inf   2.436  0.1108
##  31 castlemart - 44 castlemart -1.39e-01 0.1547 Inf  -0.899  0.6345
##  31 castlemart - 45 castlemart  1.92e-01 0.1539 Inf   1.249  0.4813
##  31 castlemart - 46 castlemart  5.57e-02 0.1584 Inf   0.351  0.8750
##  31 castlemart - 47 castlemart  5.35e-01 0.1516 Inf   3.525  0.0130
##  31 castlemart - 48 castlemart -1.83e-01 0.1577 Inf  -1.161  0.5184
##  31 castlemart - 49 castlemart  1.18e-01 0.1557 Inf   0.755  0.6995
##  31 castlemart - 50 castlemart  2.44e-01 0.1580 Inf   1.542  0.3603
##  31 castlemart - 51 castlemart -1.09e-01 0.1605 Inf  -0.681  0.7324
##  31 castlemart - 52 castlemart  4.35e-02 0.1595 Inf   0.273  0.9051
##  31 castlemart - 53 castlemart  1.93e-01 0.1555 Inf   1.240  0.4832
##  31 castlemart - 54 castlemart  6.90e-02 0.1541 Inf   0.448  0.8327
##  31 castlemart - 55 castlemart  2.01e-01 0.1536 Inf   1.311  0.4524
##  31 castlemart - 56 castlemart  1.47e-01 0.1616 Inf   0.908  0.6317
##  31 castlemart - 57 castlemart  7.66e-02 0.1587 Inf   0.483  0.8236
##  31 castlemart - 58 castlemart  2.05e-02 0.1581 Inf   0.130  0.9583
##  31 castlemart - 59 castlemart  3.71e-01 0.1605 Inf   2.309  0.1286
##  31 castlemart - 60 castlemart  2.65e-01 0.1564 Inf   1.691  0.3053
##  31 castlemart - 61 castlemart  1.10e-03 0.1586 Inf   0.007  0.9969
##  31 castlemart - 1 def1         4.21e-01 0.1554 Inf   2.707  0.0673
##  31 castlemart - 2 def1         1.79e-01 0.1556 Inf   1.148  0.5248
##  31 castlemart - 3 def1         1.58e-01 0.1595 Inf   0.990  0.5930
##  31 castlemart - 4 def1         3.84e-02 0.1603 Inf   0.239  0.9170
##  31 castlemart - 5 def1        -5.71e-02 0.1581 Inf  -0.361  0.8721
##  31 castlemart - 6 def1         1.14e-01 0.1605 Inf   0.713  0.7193
##  31 castlemart - 7 def1         1.07e-01 0.1558 Inf   0.687  0.7294
##  31 castlemart - 8 def1         4.14e-01 0.1619 Inf   2.554  0.0905
##  31 castlemart - 9 def1        -6.46e-02 0.1618 Inf  -0.399  0.8538
##  31 castlemart - 10 def1        1.20e-01 0.1678 Inf   0.715  0.7188
##  31 castlemart - 11 def1       -2.11e-02 0.1596 Inf  -0.132  0.9575
##  31 castlemart - 12 def1        6.14e-02 0.1560 Inf   0.393  0.8563
```

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##  31 castlemart - 13 def1        1.42e-01 0.1599 Inf   0.889  0.6397
##  31 castlemart - 14 def1       -2.06e-01 0.1577 Inf  -1.307  0.4546
##  31 castlemart - 15 def1        2.33e-01 0.1603 Inf   1.452  0.3928
##  31 castlemart - 16 def1        2.77e-01 0.1521 Inf   1.819  0.2599
##  31 castlemart - 17 def1        1.80e-01 0.1603 Inf   1.120  0.5355
##  31 castlemart - 18 def1        2.03e-01 0.1614 Inf   1.256  0.4785
##  31 castlemart - 19 def1        7.75e-01 0.1816 Inf   4.266  0.0018
##  31 castlemart - 20 def1        2.55e-01 0.1608 Inf   1.588  0.3427
##  31 castlemart - 22 def1        3.17e-02 0.1574 Inf   0.201  0.9314
##  31 castlemart - 23 def1        4.76e-01 0.1755 Inf   2.713  0.0668
##  31 castlemart - 24 def1        1.16e-01 0.1633 Inf   0.711  0.7201
##  31 castlemart - 25 def1        2.15e-01 0.1616 Inf   1.331  0.4453
##  31 castlemart - 26 def1        1.12e-01 0.1617 Inf   0.690  0.7279
##  31 castlemart - 27 def1       -2.17e-03 0.1634 Inf  -0.013  0.9955
##  31 castlemart - 28 def1        1.01e-01 0.1622 Inf   0.621  0.7610
##  31 castlemart - 29 def1        2.96e-01 0.1564 Inf   1.889  0.2368
##  31 castlemart - 30 def1        2.69e-01 0.1579 Inf   1.703  0.3007
##  31 castlemart - 31 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  31 castlemart - 32 def1        5.19e-01 0.1627 Inf   3.191  0.0271
##  31 castlemart - 33 def1        4.38e-01 0.1591 Inf   2.752  0.0628
##  31 castlemart - 34 def1       -3.71e-02 0.1572 Inf  -0.236  0.9185
##  31 castlemart - 35 def1        2.11e-01 0.1620 Inf   1.304  0.4561
##  31 castlemart - 36 def1       -4.53e-02 0.1572 Inf  -0.288  0.8984
##  31 castlemart - 37 def1        3.35e-01 0.1659 Inf   2.020  0.2006
##  31 castlemart - 38 def1        2.45e-01 0.1600 Inf   1.528  0.3657
##  31 castlemart - 39 def1        1.95e-01 0.1744 Inf   1.118  0.5359
##  31 castlemart - 41 def1        1.92e-01 0.1606 Inf   1.195  0.5026
##  31 castlemart - 42 def1        7.82e-02 0.1605 Inf   0.487  0.8223
##  31 castlemart - 43 def1        3.10e-01 0.1570 Inf   1.971  0.2136
##  31 castlemart - 44 def1       -2.06e-01 0.1571 Inf  -1.311  0.4524
##  31 castlemart - 45 def1        1.25e-01 0.1561 Inf   0.802  0.6782
##  31 castlemart - 46 def1       -1.12e-02 0.1615 Inf  -0.069  0.9776
##  31 castlemart - 47 def1        4.68e-01 0.1540 Inf   3.037  0.0356
##  31 castlemart - 48 def1       -2.50e-01 0.1601 Inf  -1.561  0.3537
##  31 castlemart - 49 def1        5.07e-02 0.1584 Inf   0.320  0.8852
##  31 castlemart - 50 def1        1.77e-01 0.1601 Inf   1.104  0.5414
##  31 castlemart - 51 def1       -1.76e-01 0.1626 Inf  -1.084  0.5492
##  31 castlemart - 52 def1       -2.34e-02 0.1619 Inf  -0.144  0.9535
##  31 castlemart - 53 def1        1.26e-01 0.1582 Inf   0.796  0.6812
##  31 castlemart - 54 def1        2.13e-03 0.1567 Inf   0.014  0.9954
##  31 castlemart - 55 def1        1.35e-01 0.1562 Inf   0.861  0.6530
##  31 castlemart - 56 def1        7.99e-02 0.1641 Inf   0.487  0.8226
##  31 castlemart - 57 def1        9.76e-03 0.1612 Inf   0.061  0.9797
##  31 castlemart - 58 def1       -4.64e-02 0.1606 Inf  -0.289  0.8984
##  31 castlemart - 59 def1        3.04e-01 0.1628 Inf   1.865  0.2440
##  31 castlemart - 60 def1        1.98e-01 0.1587 Inf   1.246  0.4821
##  31 castlemart - 61 def1       -6.58e-02 0.1610 Inf  -0.409  0.8504
##  32 castlemart - 33 castlemart -8.16e-02 0.1671 Inf  -0.488  0.8219
##  32 castlemart - 34 castlemart -5.57e-01 0.1602 Inf  -3.474  0.0144
##  32 castlemart - 35 castlemart -3.08e-01 0.1710 Inf  -1.802  0.2650
##  32 castlemart - 36 castlemart -5.65e-01 0.1682 Inf  -3.358  0.0185
##  32 castlemart - 37 castlemart -1.84e-01 0.1684 Inf  -1.094  0.5452
##  32 castlemart - 38 castlemart -2.75e-01 0.1644 Inf  -1.672  0.3121
##  32 castlemart - 39 castlemart -3.24e-01 0.1760 Inf  -1.842  0.2516
##  32 castlemart - 41 castlemart -3.27e-01 0.1649 Inf  -1.985  0.2098
##  32 castlemart - 42 castlemart -4.41e-01 0.1651 Inf  -2.672  0.0719
```

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##  32 castlemart - 43 castlemart -2.10e-01 0.1650 Inf  -1.272  0.4713
##  32 castlemart - 44 castlemart -7.25e-01 0.1699 Inf  -4.269  0.0018
##  32 castlemart - 45 castlemart -3.94e-01 0.1670 Inf  -2.360  0.1248
##  32 castlemart - 46 castlemart -5.31e-01 0.1696 Inf  -3.128  0.0300
##  32 castlemart - 47 castlemart -5.17e-02 0.1666 Inf  -0.310  0.8898
##  32 castlemart - 48 castlemart -7.69e-01 0.1671 Inf  -4.604  0.0008
##  32 castlemart - 49 castlemart -4.69e-01 0.1654 Inf  -2.833  0.0550
##  32 castlemart - 50 castlemart -3.43e-01 0.1681 Inf  -2.039  0.1941
##  32 castlemart - 51 castlemart -6.96e-01 0.1684 Inf  -4.131  0.0026
##  32 castlemart - 52 castlemart -5.43e-01 0.1689 Inf  -3.214  0.0260
##  32 castlemart - 53 castlemart -3.93e-01 0.1667 Inf  -2.360  0.1248
##  32 castlemart - 54 castlemart -5.17e-01 0.1619 Inf  -3.196  0.0271
##  32 castlemart - 55 castlemart -3.85e-01 0.1648 Inf  -2.336  0.1278
##  32 castlemart - 56 castlemart -4.40e-01 0.1683 Inf  -2.612  0.0817
##  32 castlemart - 57 castlemart -5.10e-01 0.1668 Inf  -3.055  0.0342
##  32 castlemart - 58 castlemart -5.66e-01 0.1659 Inf  -3.411  0.0161
##  32 castlemart - 59 castlemart -2.16e-01 0.1731 Inf  -1.246  0.4821
##  32 castlemart - 60 castlemart -3.22e-01 0.1652 Inf  -1.947  0.2218
##  32 castlemart - 61 castlemart -5.85e-01 0.1649 Inf  -3.549  0.0123
##  32 castlemart - 1 def1        -1.66e-01 0.1650 Inf  -1.004  0.5858
##  32 castlemart - 2 def1        -4.08e-01 0.1645 Inf  -2.478  0.1035
##  32 castlemart - 3 def1        -4.28e-01 0.1676 Inf  -2.557  0.0901
##  32 castlemart - 4 def1        -5.48e-01 0.1664 Inf  -3.293  0.0218
##  32 castlemart - 5 def1        -6.43e-01 0.1673 Inf  -3.847  0.0056
##  32 castlemart - 6 def1        -4.72e-01 0.1697 Inf  -2.780  0.0599
##  32 castlemart - 7 def1        -4.79e-01 0.1693 Inf  -2.831  0.0551
##  32 castlemart - 8 def1        -1.73e-01 0.1686 Inf  -1.024  0.5750
##  32 castlemart - 9 def1        -6.51e-01 0.1724 Inf  -3.774  0.0066
##  32 castlemart - 10 def1       -4.66e-01 0.1786 Inf  -2.610  0.0819
##  32 castlemart - 11 def1       -6.07e-01 0.1669 Inf  -3.638  0.0098
##  32 castlemart - 12 def1       -5.25e-01 0.1655 Inf  -3.173  0.0278
##  32 castlemart - 13 def1       -4.44e-01 0.1665 Inf  -2.668  0.0728
##  32 castlemart - 14 def1       -7.92e-01 0.1680 Inf  -4.716  0.0006
##  32 castlemart - 15 def1       -3.53e-01 0.1702 Inf  -2.077  0.1847
##  32 castlemart - 16 def1       -3.10e-01 0.1619 Inf  -1.912  0.2300
##  32 castlemart - 17 def1       -4.07e-01 0.1679 Inf  -2.422  0.1136
##  32 castlemart - 18 def1       -3.84e-01 0.1704 Inf  -2.251  0.1410
##  32 castlemart - 19 def1        1.88e-01 0.1882 Inf   1.002  0.5871
##  32 castlemart - 20 def1       -3.31e-01 0.1720 Inf  -1.924  0.2276
##  32 castlemart - 22 def1       -5.55e-01 0.1681 Inf  -3.300  0.0214
##  32 castlemart - 23 def1       -1.10e-01 0.1839 Inf  -0.599  0.7691
##  32 castlemart - 24 def1       -4.70e-01 0.1709 Inf  -2.752  0.0628
##  32 castlemart - 25 def1       -3.71e-01 0.1680 Inf  -2.209  0.1509
##  32 castlemart - 26 def1       -4.75e-01 0.1726 Inf  -2.750  0.0631
##  32 castlemart - 27 def1       -5.88e-01 0.1681 Inf  -3.501  0.0136
##  32 castlemart - 28 def1       -4.86e-01 0.1722 Inf  -2.819  0.0557
##  32 castlemart - 29 def1       -2.91e-01 0.1698 Inf  -1.713  0.2975
##  32 castlemart - 30 def1       -3.17e-01 0.1675 Inf  -1.894  0.2358
##  32 castlemart - 31 def1       -6.53e-01 0.1627 Inf  -4.016  0.0035
##  32 castlemart - 32 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  32 castlemart - 33 def1       -1.48e-01 0.1693 Inf  -0.877  0.6465
##  32 castlemart - 34 def1       -6.23e-01 0.1625 Inf  -3.837  0.0057
##  32 castlemart - 35 def1       -3.75e-01 0.1733 Inf  -2.164  0.1607
##  32 castlemart - 36 def1       -6.32e-01 0.1707 Inf  -3.701  0.0082
##  32 castlemart - 37 def1       -2.51e-01 0.1706 Inf  -1.472  0.3862
##  32 castlemart - 38 def1       -3.42e-01 0.1663 Inf  -2.055  0.1905
```

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##  32 castlemart - 39 def1       -3.91e-01 0.1781 Inf  -2.197  0.1540
##  32 castlemart - 41 def1       -3.94e-01 0.1672 Inf  -2.359  0.1249
##  32 castlemart - 42 def1       -5.08e-01 0.1677 Inf  -3.029  0.0362
##  32 castlemart - 43 def1       -2.77e-01 0.1673 Inf  -1.654  0.3190
##  32 castlemart - 44 def1       -7.92e-01 0.1721 Inf  -4.604  0.0008
##  32 castlemart - 45 def1       -4.61e-01 0.1690 Inf  -2.727  0.0651
##  32 castlemart - 46 def1       -5.97e-01 0.1724 Inf  -3.465  0.0145
##  32 castlemart - 47 def1       -1.19e-01 0.1687 Inf  -0.703  0.7218
##  32 castlemart - 48 def1       -8.36e-01 0.1693 Inf  -4.939  0.0004
##  32 castlemart - 49 def1       -5.36e-01 0.1679 Inf  -3.190  0.0271
##  32 castlemart - 50 def1       -4.10e-01 0.1700 Inf  -2.409  0.1162
##  32 castlemart - 51 def1       -7.62e-01 0.1703 Inf  -4.477  0.0011
##  32 castlemart - 52 def1       -6.10e-01 0.1711 Inf  -3.563  0.0123
##  32 castlemart - 53 def1       -4.60e-01 0.1693 Inf  -2.720  0.0660
##  32 castlemart - 54 def1       -5.84e-01 0.1644 Inf  -3.554  0.0123
##  32 castlemart - 55 def1       -4.52e-01 0.1671 Inf  -2.703  0.0678
##  32 castlemart - 56 def1       -5.06e-01 0.1706 Inf  -2.968  0.0410
##  32 castlemart - 57 def1       -5.77e-01 0.1691 Inf  -3.409  0.0161
##  32 castlemart - 58 def1       -6.33e-01 0.1682 Inf  -3.761  0.0069
##  32 castlemart - 59 def1       -2.83e-01 0.1752 Inf  -1.613  0.3342
##  32 castlemart - 60 def1       -3.89e-01 0.1673 Inf  -2.323  0.1278
##  32 castlemart - 61 def1       -6.52e-01 0.1671 Inf  -3.902  0.0050
##  33 castlemart - 34 castlemart -4.75e-01 0.1591 Inf  -2.986  0.0394
##  33 castlemart - 35 castlemart -2.27e-01 0.1666 Inf  -1.360  0.4325
##  33 castlemart - 36 castlemart -4.83e-01 0.1639 Inf  -2.947  0.0428
##  33 castlemart - 37 castlemart -1.03e-01 0.1707 Inf  -0.601  0.7688
##  33 castlemart - 38 castlemart -1.93e-01 0.1605 Inf  -1.204  0.4993
##  33 castlemart - 39 castlemart -2.43e-01 0.1800 Inf  -1.348  0.4372
##  33 castlemart - 41 castlemart -2.46e-01 0.1602 Inf  -1.535  0.3631
##  33 castlemart - 42 castlemart -3.60e-01 0.1598 Inf  -2.250  0.1411
##  33 castlemart - 43 castlemart -1.28e-01 0.1631 Inf  -0.787  0.6856
##  33 castlemart - 44 castlemart -6.44e-01 0.1653 Inf  -3.895  0.0050
##  33 castlemart - 45 castlemart -3.13e-01 0.1632 Inf  -1.915  0.2293
##  33 castlemart - 46 castlemart -4.49e-01 0.1565 Inf  -2.869  0.0506
##  33 castlemart - 47 castlemart  2.99e-02 0.1612 Inf   0.185  0.9373
##  33 castlemart - 48 castlemart -6.88e-01 0.1590 Inf  -4.326  0.0015
##  33 castlemart - 49 castlemart -3.87e-01 0.1616 Inf  -2.395  0.1188
##  33 castlemart - 50 castlemart -2.61e-01 0.1596 Inf  -1.636  0.3257
##  33 castlemart - 51 castlemart -6.14e-01 0.1668 Inf  -3.681  0.0087
##  33 castlemart - 52 castlemart -4.61e-01 0.1630 Inf  -2.830  0.0551
##  33 castlemart - 53 castlemart -3.12e-01 0.1623 Inf  -1.922  0.2276
##  33 castlemart - 54 castlemart -4.36e-01 0.1604 Inf  -2.716  0.0664
##  33 castlemart - 55 castlemart -3.03e-01 0.1573 Inf  -1.928  0.2268
##  33 castlemart - 56 castlemart -3.58e-01 0.1691 Inf  -2.117  0.1730
##  33 castlemart - 57 castlemart -4.28e-01 0.1595 Inf  -2.684  0.0704
##  33 castlemart - 58 castlemart -4.84e-01 0.1635 Inf  -2.961  0.0415
##  33 castlemart - 59 castlemart -1.34e-01 0.1641 Inf  -0.817  0.6730
##  33 castlemart - 60 castlemart -2.40e-01 0.1623 Inf  -1.479  0.3821
##  33 castlemart - 61 castlemart -5.04e-01 0.1627 Inf  -3.096  0.0321
##  33 castlemart - 1 def1        -8.41e-02 0.1612 Inf  -0.521  0.8066
##  33 castlemart - 2 def1        -3.26e-01 0.1624 Inf  -2.009  0.2023
##  33 castlemart - 3 def1        -3.47e-01 0.1630 Inf  -2.129  0.1695
##  33 castlemart - 4 def1        -4.66e-01 0.1672 Inf  -2.790  0.0590
##  33 castlemart - 5 def1        -5.62e-01 0.1647 Inf  -3.412  0.0161
##  33 castlemart - 6 def1        -3.90e-01 0.1632 Inf  -2.392  0.1193
##  33 castlemart - 7 def1        -3.98e-01 0.1671 Inf  -2.380  0.1214
```

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##  33 castlemart - 8 def1        -9.12e-02 0.1675 Inf  -0.544  0.7958
##  33 castlemart - 9 def1        -5.69e-01 0.1667 Inf  -3.415  0.0161
##  33 castlemart - 10 def1       -3.85e-01 0.1710 Inf  -2.249  0.1412
##  33 castlemart - 11 def1       -5.26e-01 0.1646 Inf  -3.194  0.0271
##  33 castlemart - 12 def1       -4.43e-01 0.1624 Inf  -2.730  0.0649
##  33 castlemart - 13 def1       -3.63e-01 0.1646 Inf  -2.202  0.1530
##  33 castlemart - 14 def1       -7.11e-01 0.1646 Inf  -4.319  0.0015
##  33 castlemart - 15 def1       -2.72e-01 0.1656 Inf  -1.642  0.3233
##  33 castlemart - 16 def1       -2.28e-01 0.1607 Inf  -1.419  0.4066
##  33 castlemart - 17 def1       -3.25e-01 0.1641 Inf  -1.981  0.2106
##  33 castlemart - 18 def1       -3.02e-01 0.1695 Inf  -1.782  0.2724
##  33 castlemart - 19 def1        2.70e-01 0.1876 Inf   1.440  0.3967
##  33 castlemart - 20 def1       -2.49e-01 0.1693 Inf  -1.473  0.3857
##  33 castlemart - 22 def1       -4.73e-01 0.1643 Inf  -2.878  0.0494
##  33 castlemart - 23 def1       -2.85e-02 0.1796 Inf  -0.159  0.9491
##  33 castlemart - 24 def1       -3.89e-01 0.1672 Inf  -2.324  0.1278
##  33 castlemart - 25 def1       -2.90e-01 0.1694 Inf  -1.710  0.2982
##  33 castlemart - 26 def1       -3.93e-01 0.1674 Inf  -2.349  0.1275
##  33 castlemart - 27 def1       -5.07e-01 0.1697 Inf  -2.988  0.0393
##  33 castlemart - 28 def1       -4.04e-01 0.1677 Inf  -2.409  0.1162
##  33 castlemart - 29 def1       -2.09e-01 0.1654 Inf  -1.265  0.4749
##  33 castlemart - 30 def1       -2.36e-01 0.1677 Inf  -1.405  0.4114
##  33 castlemart - 31 def1       -5.72e-01 0.1596 Inf  -3.582  0.0116
##  33 castlemart - 32 def1        1.47e-02 0.1698 Inf   0.086  0.9740
##  33 castlemart - 33 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  33 castlemart - 34 def1       -5.42e-01 0.1617 Inf  -3.351  0.0186
##  33 castlemart - 35 def1       -2.94e-01 0.1691 Inf  -1.735  0.2902
##  33 castlemart - 36 def1       -5.50e-01 0.1667 Inf  -3.299  0.0214
##  33 castlemart - 37 def1       -1.70e-01 0.1732 Inf  -0.979  0.5974
##  33 castlemart - 38 def1       -2.60e-01 0.1627 Inf  -1.599  0.3384
##  33 castlemart - 39 def1       -3.10e-01 0.1823 Inf  -1.698  0.3027
##  33 castlemart - 41 def1       -3.13e-01 0.1627 Inf  -1.922  0.2276
##  33 castlemart - 42 def1       -4.26e-01 0.1628 Inf  -2.619  0.0808
##  33 castlemart - 43 def1       -1.95e-01 0.1657 Inf  -1.178  0.5108
##  33 castlemart - 44 def1       -7.11e-01 0.1678 Inf  -4.236  0.0019
##  33 castlemart - 45 def1       -3.79e-01 0.1655 Inf  -2.292  0.1315
##  33 castlemart - 46 def1       -5.16e-01 0.1599 Inf  -3.227  0.0256
##  33 castlemart - 47 def1       -3.70e-02 0.1636 Inf  -0.226  0.9241
##  33 castlemart - 48 def1       -7.55e-01 0.1616 Inf  -4.670  0.0007
##  33 castlemart - 49 def1       -4.54e-01 0.1644 Inf  -2.761  0.0622
##  33 castlemart - 50 def1       -3.28e-01 0.1619 Inf  -2.026  0.1987
##  33 castlemart - 51 def1       -6.81e-01 0.1690 Inf  -4.029  0.0035
##  33 castlemart - 52 def1       -5.28e-01 0.1656 Inf  -3.189  0.0271
##  33 castlemart - 53 def1       -3.79e-01 0.1652 Inf  -2.294  0.1311
##  33 castlemart - 54 def1       -5.03e-01 0.1632 Inf  -3.079  0.0332
##  33 castlemart - 55 def1       -3.70e-01 0.1600 Inf  -2.313  0.1279
##  33 castlemart - 56 def1       -4.25e-01 0.1717 Inf  -2.474  0.1041
##  33 castlemart - 57 def1       -4.95e-01 0.1621 Inf  -3.052  0.0344
##  33 castlemart - 58 def1       -5.51e-01 0.1662 Inf  -3.316  0.0204
##  33 castlemart - 59 def1       -2.01e-01 0.1666 Inf  -1.206  0.4983
##  33 castlemart - 60 def1       -3.07e-01 0.1647 Inf  -1.864  0.2443
##  33 castlemart - 61 def1       -5.71e-01 0.1652 Inf  -3.453  0.0148
##  34 castlemart - 35 castlemart  2.48e-01 0.1655 Inf   1.501  0.3750
##  34 castlemart - 36 castlemart -8.13e-03 0.1630 Inf  -0.050  0.9821
##  34 castlemart - 37 castlemart  3.72e-01 0.1658 Inf   2.246  0.1416
##  34 castlemart - 38 castlemart  2.82e-01 0.1592 Inf   1.769  0.2759
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##  34 castlemart - 39 castlemart  2.32e-01 0.1714 Inf   1.354  0.4351
##  34 castlemart - 41 castlemart  2.29e-01 0.1600 Inf   1.431  0.3991
##  34 castlemart - 42 castlemart  1.15e-01 0.1619 Inf   0.713  0.7193
##  34 castlemart - 43 castlemart  3.47e-01 0.1594 Inf   2.174  0.1585
##  34 castlemart - 44 castlemart -1.69e-01 0.1645 Inf  -1.026  0.5741
##  34 castlemart - 45 castlemart  1.62e-01 0.1600 Inf   1.015  0.5793
##  34 castlemart - 46 castlemart  2.59e-02 0.1631 Inf   0.159  0.9491
##  34 castlemart - 47 castlemart  5.05e-01 0.1599 Inf   3.157  0.0289
##  34 castlemart - 48 castlemart -2.13e-01 0.1591 Inf  -1.338  0.4427
##  34 castlemart - 49 castlemart  8.79e-02 0.1613 Inf   0.545  0.7957
##  34 castlemart - 50 castlemart  2.14e-01 0.1594 Inf   1.342  0.4403
##  34 castlemart - 51 castlemart -1.39e-01 0.1639 Inf  -0.848  0.6578
##  34 castlemart - 52 castlemart  1.37e-02 0.1629 Inf   0.084  0.9741
##  34 castlemart - 53 castlemart  1.63e-01 0.1611 Inf   1.012  0.5801
##  34 castlemart - 54 castlemart  3.93e-02 0.1572 Inf   0.250  0.9131
##  34 castlemart - 55 castlemart  1.72e-01 0.1570 Inf   1.093  0.5452
##  34 castlemart - 56 castlemart  1.17e-01 0.1655 Inf   0.707  0.7205
##  34 castlemart - 57 castlemart  4.69e-02 0.1620 Inf   0.289  0.8983
##  34 castlemart - 58 castlemart -9.27e-03 0.1605 Inf  -0.058  0.9801
##  34 castlemart - 59 castlemart  3.41e-01 0.1636 Inf   2.084  0.1823
##  34 castlemart - 60 castlemart  2.35e-01 0.1612 Inf   1.457  0.3927
##  34 castlemart - 61 castlemart -2.87e-02 0.1573 Inf  -0.182  0.9378
##  34 castlemart - 1 def1         3.91e-01 0.1603 Inf   2.439  0.1107
##  34 castlemart - 2 def1         1.49e-01 0.1597 Inf   0.931  0.6202
##  34 castlemart - 3 def1         1.28e-01 0.1612 Inf   0.794  0.6821
##  34 castlemart - 4 def1         8.61e-03 0.1642 Inf   0.052  0.9816
##  34 castlemart - 5 def1        -8.69e-02 0.1638 Inf  -0.531  0.8013
##  34 castlemart - 6 def1         8.47e-02 0.1642 Inf   0.516  0.8066
##  34 castlemart - 7 def1         7.73e-02 0.1652 Inf   0.468  0.8276
##  34 castlemart - 8 def1         3.84e-01 0.1667 Inf   2.302  0.1296
##  34 castlemart - 9 def1        -9.44e-02 0.1644 Inf  -0.574  0.7814
##  34 castlemart - 10 def1        9.03e-02 0.1687 Inf   0.535  0.8002
##  34 castlemart - 11 def1       -5.08e-02 0.1617 Inf  -0.314  0.8885
##  34 castlemart - 12 def1        3.16e-02 0.1617 Inf   0.195  0.9338
##  34 castlemart - 13 def1        1.12e-01 0.1601 Inf   0.702  0.7218
##  34 castlemart - 14 def1       -2.36e-01 0.1642 Inf  -1.437  0.3974
##  34 castlemart - 15 def1        2.03e-01 0.1636 Inf   1.241  0.4832
##  34 castlemart - 16 def1        2.47e-01 0.1577 Inf   1.566  0.3529
##  34 castlemart - 17 def1        1.50e-01 0.1639 Inf   0.913  0.6286
##  34 castlemart - 18 def1        1.73e-01 0.1679 Inf   1.030  0.5736
##  34 castlemart - 19 def1        7.45e-01 0.1858 Inf   4.009  0.0036
##  34 castlemart - 20 def1        2.26e-01 0.1679 Inf   1.344  0.4396
##  34 castlemart - 22 def1        1.93e-03 0.1619 Inf   0.012  0.9958
##  34 castlemart - 23 def1        4.46e-01 0.1756 Inf   2.542  0.0923
##  34 castlemart - 24 def1        8.63e-02 0.1678 Inf   0.514  0.8066
##  34 castlemart - 25 def1        1.85e-01 0.1680 Inf   1.103  0.5417
##  34 castlemart - 26 def1        8.18e-02 0.1658 Inf   0.494  0.8185
##  34 castlemart - 27 def1       -3.19e-02 0.1647 Inf  -0.194  0.9345
##  34 castlemart - 28 def1        7.10e-02 0.1651 Inf   0.430  0.8431
##  34 castlemart - 29 def1        2.66e-01 0.1632 Inf   1.629  0.3286
##  34 castlemart - 30 def1        2.39e-01 0.1657 Inf   1.443  0.3960
##  34 castlemart - 31 def1       -9.67e-02 0.1576 Inf  -0.613  0.7640
##  34 castlemart - 32 def1        4.90e-01 0.1630 Inf   3.003  0.0382
##  34 castlemart - 33 def1        4.08e-01 0.1617 Inf   2.524  0.0957
##  34 castlemart - 34 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  34 castlemart - 35 def1        1.81e-01 0.1681 Inf   1.080  0.5502
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##  34 castlemart - 36 def1       -7.50e-02 0.1658 Inf  -0.452  0.8311
##  34 castlemart - 37 def1        3.05e-01 0.1683 Inf   1.815  0.2607
##  34 castlemart - 38 def1        2.15e-01 0.1614 Inf   1.330  0.4454
##  34 castlemart - 39 def1        1.65e-01 0.1738 Inf   0.951  0.6131
##  34 castlemart - 41 def1        1.62e-01 0.1626 Inf   0.997  0.5895
##  34 castlemart - 42 def1        4.85e-02 0.1648 Inf   0.294  0.8963
##  34 castlemart - 43 def1        2.80e-01 0.1621 Inf   1.726  0.2919
##  34 castlemart - 44 def1       -2.36e-01 0.1670 Inf  -1.411  0.4094
##  34 castlemart - 45 def1        9.55e-02 0.1624 Inf   0.588  0.7728
##  34 castlemart - 46 def1       -4.10e-02 0.1663 Inf  -0.246  0.9146
##  34 castlemart - 47 def1        4.38e-01 0.1624 Inf   2.697  0.0684
##  34 castlemart - 48 def1       -2.80e-01 0.1617 Inf  -1.730  0.2908
##  34 castlemart - 49 def1        2.10e-02 0.1641 Inf   0.128  0.9585
##  34 castlemart - 50 def1        1.47e-01 0.1617 Inf   0.909  0.6317
##  34 castlemart - 51 def1       -2.06e-01 0.1661 Inf  -1.240  0.4832
##  34 castlemart - 52 def1       -5.31e-02 0.1655 Inf  -0.321  0.8852
##  34 castlemart - 53 def1        9.61e-02 0.1639 Inf   0.586  0.7736
##  34 castlemart - 54 def1       -2.76e-02 0.1601 Inf  -0.173  0.9420
##  34 castlemart - 55 def1        1.05e-01 0.1598 Inf   0.656  0.7432
##  34 castlemart - 56 def1        5.01e-02 0.1681 Inf   0.298  0.8950
##  34 castlemart - 57 def1       -2.00e-02 0.1647 Inf  -0.122  0.9601
##  34 castlemart - 58 def1       -7.62e-02 0.1632 Inf  -0.467  0.8276
##  34 castlemart - 59 def1        2.74e-01 0.1661 Inf   1.649  0.3210
##  34 castlemart - 60 def1        1.68e-01 0.1636 Inf   1.027  0.5741
##  34 castlemart - 61 def1       -9.56e-02 0.1599 Inf  -0.598  0.7693
##  35 castlemart - 36 castlemart -2.56e-01 0.1661 Inf  -1.544  0.3596
##  35 castlemart - 37 castlemart  1.24e-01 0.1751 Inf   0.708  0.7205
##  35 castlemart - 38 castlemart  3.33e-02 0.1685 Inf   0.198  0.9327
##  35 castlemart - 39 castlemart -1.61e-02 0.1811 Inf  -0.089  0.9732
##  35 castlemart - 41 castlemart -1.93e-02 0.1668 Inf  -0.115  0.9623
##  35 castlemart - 42 castlemart -1.33e-01 0.1657 Inf  -0.803  0.6782
##  35 castlemart - 43 castlemart  9.84e-02 0.1672 Inf   0.588  0.7728
##  35 castlemart - 44 castlemart -4.17e-01 0.1675 Inf  -2.491  0.1010
##  35 castlemart - 45 castlemart -8.59e-02 0.1664 Inf  -0.516  0.8066
##  35 castlemart - 46 castlemart -2.22e-01 0.1655 Inf  -1.344  0.4396
##  35 castlemart - 47 castlemart  2.56e-01 0.1655 Inf   1.549  0.3582
##  35 castlemart - 48 castlemart -4.61e-01 0.1681 Inf  -2.743  0.0639
##  35 castlemart - 49 castlemart -1.60e-01 0.1667 Inf  -0.963  0.6056
##  35 castlemart - 50 castlemart -3.45e-02 0.1690 Inf  -0.204  0.9312
##  35 castlemart - 51 castlemart -3.87e-01 0.1623 Inf  -2.387  0.1200
##  35 castlemart - 52 castlemart -2.35e-01 0.1704 Inf  -1.377  0.4251
##  35 castlemart - 53 castlemart -8.53e-02 0.1680 Inf  -0.508  0.8096
##  35 castlemart - 54 castlemart -2.09e-01 0.1648 Inf  -1.269  0.4726
##  35 castlemart - 55 castlemart -7.67e-02 0.1641 Inf  -0.467  0.8276
##  35 castlemart - 56 castlemart -1.31e-01 0.1734 Inf  -0.757  0.6995
##  35 castlemart - 57 castlemart -2.01e-01 0.1694 Inf  -1.189  0.5056
##  35 castlemart - 58 castlemart -2.58e-01 0.1688 Inf  -1.526  0.3659
##  35 castlemart - 59 castlemart  9.25e-02 0.1738 Inf   0.532  0.8013
##  35 castlemart - 60 castlemart -1.35e-02 0.1680 Inf  -0.080  0.9746
##  35 castlemart - 61 castlemart -2.77e-01 0.1686 Inf  -1.642  0.3233
##  35 castlemart - 1 def1         1.43e-01 0.1651 Inf   0.864  0.6529
##  35 castlemart - 2 def1        -9.95e-02 0.1663 Inf  -0.599  0.7691
##  35 castlemart - 3 def1        -1.20e-01 0.1681 Inf  -0.715  0.7188
##  35 castlemart - 4 def1        -2.40e-01 0.1722 Inf  -1.392  0.4181
##  35 castlemart - 5 def1        -3.35e-01 0.1705 Inf  -1.966  0.2151
##  35 castlemart - 6 def1        -1.64e-01 0.1713 Inf  -0.955  0.6105
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##  35 castlemart - 7 def1        -1.71e-01 0.1689 Inf  -1.013  0.5801
##  35 castlemart - 8 def1         1.35e-01 0.1708 Inf   0.793  0.6822
##  35 castlemart - 9 def1        -3.43e-01 0.1730 Inf  -1.981  0.2106
##  35 castlemart - 10 def1       -1.58e-01 0.1789 Inf  -0.883  0.6435
##  35 castlemart - 11 def1       -2.99e-01 0.1664 Inf  -1.798  0.2668
##  35 castlemart - 12 def1       -2.17e-01 0.1648 Inf  -1.315  0.4513
##  35 castlemart - 13 def1       -1.36e-01 0.1703 Inf  -0.798  0.6808
##  35 castlemart - 14 def1       -4.84e-01 0.1705 Inf  -2.840  0.0540
##  35 castlemart - 15 def1       -4.53e-02 0.1707 Inf  -0.265  0.9072
##  35 castlemart - 16 def1       -1.42e-03 0.1637 Inf  -0.009  0.9965
##  35 castlemart - 17 def1       -9.86e-02 0.1706 Inf  -0.578  0.7790
##  35 castlemart - 18 def1       -7.54e-02 0.1743 Inf  -0.433  0.8423
##  35 castlemart - 19 def1        4.97e-01 0.1914 Inf   2.595  0.0841
##  35 castlemart - 20 def1       -2.27e-02 0.1694 Inf  -0.134  0.9561
##  35 castlemart - 22 def1       -2.46e-01 0.1687 Inf  -1.460  0.3915
##  35 castlemart - 23 def1        1.98e-01 0.1854 Inf   1.069  0.5566
##  35 castlemart - 24 def1       -1.62e-01 0.1744 Inf  -0.929  0.6209
##  35 castlemart - 25 def1       -6.31e-02 0.1726 Inf  -0.365  0.8700
##  35 castlemart - 26 def1       -1.67e-01 0.1713 Inf  -0.972  0.6010
##  35 castlemart - 27 def1       -2.80e-01 0.1726 Inf  -1.623  0.3305
##  35 castlemart - 28 def1       -1.77e-01 0.1718 Inf  -1.032  0.5729
##  35 castlemart - 29 def1        1.74e-02 0.1649 Inf   0.106  0.9649
##  35 castlemart - 30 def1       -9.08e-03 0.1690 Inf  -0.054  0.9814
##  35 castlemart - 31 def1       -3.45e-01 0.1623 Inf  -2.126  0.1703
##  35 castlemart - 32 def1        2.41e-01 0.1736 Inf   1.390  0.4191
##  35 castlemart - 33 def1        1.60e-01 0.1690 Inf   0.945  0.6162
##  35 castlemart - 34 def1       -3.15e-01 0.1679 Inf  -1.877  0.2400
##  35 castlemart - 35 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  35 castlemart - 36 def1       -3.23e-01 0.1688 Inf  -1.915  0.2293
##  35 castlemart - 37 def1        5.71e-02 0.1775 Inf   0.322  0.8852
##  35 castlemart - 38 def1       -3.36e-02 0.1705 Inf  -0.197  0.9331
##  35 castlemart - 39 def1       -8.30e-02 0.1832 Inf  -0.453  0.8311
##  35 castlemart - 41 def1       -8.62e-02 0.1692 Inf  -0.509  0.8088
##  35 castlemart - 42 def1       -2.00e-01 0.1685 Inf  -1.186  0.5074
##  35 castlemart - 43 def1        3.15e-02 0.1697 Inf   0.185  0.9373
##  35 castlemart - 44 def1       -4.84e-01 0.1699 Inf  -2.850  0.0525
##  35 castlemart - 45 def1       -1.53e-01 0.1686 Inf  -0.906  0.6322
##  35 castlemart - 46 def1       -2.89e-01 0.1686 Inf  -1.716  0.2964
##  35 castlemart - 47 def1        1.90e-01 0.1679 Inf   1.129  0.5326
##  35 castlemart - 48 def1       -5.28e-01 0.1705 Inf  -3.097  0.0321
##  35 castlemart - 49 def1       -2.27e-01 0.1693 Inf  -1.343  0.4398
##  35 castlemart - 50 def1       -1.01e-01 0.1712 Inf  -0.592  0.7716
##  35 castlemart - 51 def1       -4.54e-01 0.1645 Inf  -2.762  0.0622
##  35 castlemart - 52 def1       -3.01e-01 0.1728 Inf  -1.745  0.2857
##  35 castlemart - 53 def1       -1.52e-01 0.1707 Inf  -0.892  0.6378
##  35 castlemart - 54 def1       -2.76e-01 0.1674 Inf  -1.648  0.3214
##  35 castlemart - 55 def1       -1.44e-01 0.1666 Inf  -0.862  0.6530
##  35 castlemart - 56 def1       -1.98e-01 0.1758 Inf  -1.127  0.5328
##  35 castlemart - 57 def1       -2.68e-01 0.1718 Inf  -1.562  0.3537
##  35 castlemart - 58 def1       -3.24e-01 0.1713 Inf  -1.894  0.2358
##  35 castlemart - 59 def1        2.56e-02 0.1761 Inf   0.146  0.9535
##  35 castlemart - 60 def1       -8.04e-02 0.1702 Inf  -0.472  0.8276
##  35 castlemart - 61 def1       -3.44e-01 0.1710 Inf  -2.011  0.2022
##  36 castlemart - 37 castlemart  3.80e-01 0.1721 Inf   2.211  0.1506
##  36 castlemart - 38 castlemart  2.90e-01 0.1639 Inf   1.768  0.2760
##  36 castlemart - 39 castlemart  2.40e-01 0.1808 Inf   1.329  0.4456
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##  36 castlemart - 41 castlemart  2.37e-01 0.1637 Inf   1.449  0.3929
##  36 castlemart - 42 castlemart  1.23e-01 0.1632 Inf   0.757  0.6995
##  36 castlemart - 43 castlemart  3.55e-01 0.1639 Inf   2.164  0.1607
##  36 castlemart - 44 castlemart -1.61e-01 0.1656 Inf  -0.970  0.6015
##  36 castlemart - 45 castlemart  1.71e-01 0.1630 Inf   1.046  0.5649
##  36 castlemart - 46 castlemart  3.40e-02 0.1656 Inf   0.206  0.9308
##  36 castlemart - 47 castlemart  5.13e-01 0.1638 Inf   3.131  0.0300
##  36 castlemart - 48 castlemart -2.05e-01 0.1639 Inf  -1.249  0.4813
##  36 castlemart - 49 castlemart  9.60e-02 0.1620 Inf   0.593  0.7716
##  36 castlemart - 50 castlemart  2.22e-01 0.1644 Inf   1.350  0.4366
##  36 castlemart - 51 castlemart -1.31e-01 0.1667 Inf  -0.785  0.6857
##  36 castlemart - 52 castlemart  2.19e-02 0.1641 Inf   0.133  0.9565
##  36 castlemart - 53 castlemart  1.71e-01 0.1615 Inf   1.060  0.5591
##  36 castlemart - 54 castlemart  4.74e-02 0.1608 Inf   0.295  0.8963
##  36 castlemart - 55 castlemart  1.80e-01 0.1584 Inf   1.135  0.5311
##  36 castlemart - 56 castlemart  1.25e-01 0.1672 Inf   0.748  0.7018
##  36 castlemart - 57 castlemart  5.50e-02 0.1644 Inf   0.335  0.8815
##  36 castlemart - 58 castlemart -1.15e-03 0.1639 Inf  -0.007  0.9969
##  36 castlemart - 59 castlemart  3.49e-01 0.1704 Inf   2.048  0.1923
##  36 castlemart - 60 castlemart  2.43e-01 0.1608 Inf   1.511  0.3714
##  36 castlemart - 61 castlemart -2.05e-02 0.1653 Inf  -0.124  0.9596
##  36 castlemart - 1 def1         3.99e-01 0.1620 Inf   2.463  0.1060
##  36 castlemart - 2 def1         1.57e-01 0.1622 Inf   0.967  0.6029
##  36 castlemart - 3 def1         1.36e-01 0.1661 Inf   0.820  0.6711
##  36 castlemart - 4 def1         1.67e-02 0.1694 Inf   0.099  0.9683
##  36 castlemart - 5 def1        -7.88e-02 0.1638 Inf  -0.481  0.8236
##  36 castlemart - 6 def1         9.29e-02 0.1643 Inf   0.565  0.7861
##  36 castlemart - 7 def1         8.54e-02 0.1596 Inf   0.535  0.8002
##  36 castlemart - 8 def1         3.92e-01 0.1684 Inf   2.327  0.1278
##  36 castlemart - 9 def1        -8.62e-02 0.1693 Inf  -0.509  0.8087
##  36 castlemart - 10 def1        9.84e-02 0.1758 Inf   0.560  0.7887
##  36 castlemart - 11 def1       -4.27e-02 0.1634 Inf  -0.261  0.9085
##  36 castlemart - 12 def1        3.97e-02 0.1623 Inf   0.245  0.9149
##  36 castlemart - 13 def1        1.20e-01 0.1643 Inf   0.733  0.7083
##  36 castlemart - 14 def1       -2.28e-01 0.1664 Inf  -1.369  0.4284
##  36 castlemart - 15 def1        2.11e-01 0.1671 Inf   1.263  0.4754
##  36 castlemart - 16 def1        2.55e-01 0.1611 Inf   1.584  0.3445
##  36 castlemart - 17 def1        1.58e-01 0.1669 Inf   0.946  0.6162
##  36 castlemart - 18 def1        1.81e-01 0.1685 Inf   1.074  0.5533
##  36 castlemart - 19 def1        7.53e-01 0.1862 Inf   4.045  0.0033
##  36 castlemart - 20 def1        2.34e-01 0.1703 Inf   1.372  0.4269
##  36 castlemart - 22 def1        1.01e-02 0.1639 Inf   0.061  0.9797
##  36 castlemart - 23 def1        4.55e-01 0.1817 Inf   2.502  0.0991
##  36 castlemart - 24 def1        9.44e-02 0.1703 Inf   0.555  0.7901
##  36 castlemart - 25 def1        1.93e-01 0.1702 Inf   1.137  0.5302
##  36 castlemart - 26 def1        8.99e-02 0.1691 Inf   0.532  0.8013
##  36 castlemart - 27 def1       -2.38e-02 0.1689 Inf  -0.141  0.9549
##  36 castlemart - 28 def1        7.91e-02 0.1700 Inf   0.465  0.8279
##  36 castlemart - 29 def1        2.74e-01 0.1631 Inf   1.680  0.3099
##  36 castlemart - 30 def1        2.47e-01 0.1673 Inf   1.479  0.3823
##  36 castlemart - 31 def1       -8.85e-02 0.1571 Inf  -0.564  0.7865
##  36 castlemart - 32 def1        4.98e-01 0.1706 Inf   2.918  0.0455
##  36 castlemart - 33 def1        4.16e-01 0.1661 Inf   2.505  0.0985
##  36 castlemart - 34 def1       -5.88e-02 0.1652 Inf  -0.356  0.8747
##  36 castlemart - 35 def1        1.90e-01 0.1684 Inf   1.126  0.5334
##  36 castlemart - 36 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
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##  36 castlemart - 37 def1        3.14e-01 0.1742 Inf   1.800  0.2659
##  36 castlemart - 38 def1        2.23e-01 0.1657 Inf   1.345  0.4392
##  36 castlemart - 39 def1        1.73e-01 0.1828 Inf   0.949  0.6149
##  36 castlemart - 41 def1        1.70e-01 0.1660 Inf   1.026  0.5741
##  36 castlemart - 42 def1        5.66e-02 0.1658 Inf   0.341  0.8788
##  36 castlemart - 43 def1        2.88e-01 0.1662 Inf   1.732  0.2908
##  36 castlemart - 44 def1       -2.28e-01 0.1678 Inf  -1.356  0.4347
##  36 castlemart - 45 def1        1.04e-01 0.1650 Inf   0.628  0.7583
##  36 castlemart - 46 def1       -3.29e-02 0.1685 Inf  -0.195  0.9339
##  36 castlemart - 47 def1        4.46e-01 0.1660 Inf   2.687  0.0699
##  36 castlemart - 48 def1       -2.72e-01 0.1661 Inf  -1.635  0.3259
##  36 castlemart - 49 def1        2.91e-02 0.1645 Inf   0.177  0.9400
##  36 castlemart - 50 def1        1.55e-01 0.1664 Inf   0.932  0.6201
##  36 castlemart - 51 def1       -1.98e-01 0.1687 Inf  -1.173  0.5131
##  36 castlemart - 52 def1       -4.50e-02 0.1664 Inf  -0.271  0.9056
##  36 castlemart - 53 def1        1.04e-01 0.1641 Inf   0.636  0.7540
##  36 castlemart - 54 def1       -1.95e-02 0.1633 Inf  -0.119  0.9609
##  36 castlemart - 55 def1        1.13e-01 0.1608 Inf   0.702  0.7218
##  36 castlemart - 56 def1        5.82e-02 0.1695 Inf   0.344  0.8775
##  36 castlemart - 57 def1       -1.19e-02 0.1667 Inf  -0.071  0.9766
##  36 castlemart - 58 def1       -6.80e-02 0.1662 Inf  -0.409  0.8504
##  36 castlemart - 59 def1        2.82e-01 0.1725 Inf   1.635  0.3259
##  36 castlemart - 60 def1        1.76e-01 0.1629 Inf   1.081  0.5495
##  36 castlemart - 61 def1       -8.74e-02 0.1675 Inf  -0.522  0.8066
##  37 castlemart - 38 castlemart -9.07e-02 0.1686 Inf  -0.538  0.7995
##  37 castlemart - 39 castlemart -1.40e-01 0.1803 Inf  -0.777  0.6894
##  37 castlemart - 41 castlemart -1.43e-01 0.1712 Inf  -0.836  0.6630
##  37 castlemart - 42 castlemart -2.57e-01 0.1701 Inf  -1.510  0.3714
##  37 castlemart - 43 castlemart -2.56e-02 0.1675 Inf  -0.153  0.9512
##  37 castlemart - 44 castlemart -5.41e-01 0.1728 Inf  -3.131  0.0300
##  37 castlemart - 45 castlemart -2.10e-01 0.1710 Inf  -1.228  0.4889
##  37 castlemart - 46 castlemart -3.46e-01 0.1724 Inf  -2.009  0.2023
##  37 castlemart - 47 castlemart  1.33e-01 0.1697 Inf   0.781  0.6883
##  37 castlemart - 48 castlemart -5.85e-01 0.1692 Inf  -3.459  0.0146
##  37 castlemart - 49 castlemart -2.84e-01 0.1686 Inf  -1.687  0.3068
##  37 castlemart - 50 castlemart -1.58e-01 0.1720 Inf  -0.921  0.6241
##  37 castlemart - 51 castlemart -5.11e-01 0.1742 Inf  -2.935  0.0441
##  37 castlemart - 52 castlemart -3.59e-01 0.1708 Inf  -2.099  0.1787
##  37 castlemart - 53 castlemart -2.09e-01 0.1695 Inf  -1.234  0.4858
##  37 castlemart - 54 castlemart -3.33e-01 0.1681 Inf  -1.981  0.2106
##  37 castlemart - 55 castlemart -2.01e-01 0.1666 Inf  -1.205  0.4993
##  37 castlemart - 56 castlemart -2.55e-01 0.1761 Inf  -1.449  0.3929
##  37 castlemart - 57 castlemart -3.25e-01 0.1692 Inf  -1.923  0.2276
##  37 castlemart - 58 castlemart -3.82e-01 0.1710 Inf  -2.231  0.1450
##  37 castlemart - 59 castlemart -3.15e-02 0.1748 Inf  -0.180  0.9384
##  37 castlemart - 60 castlemart -1.37e-01 0.1687 Inf  -0.815  0.6730
##  37 castlemart - 61 castlemart -4.01e-01 0.1697 Inf  -2.363  0.1245
##  37 castlemart - 1 def1         1.86e-02 0.1683 Inf   0.110  0.9633
##  37 castlemart - 2 def1        -2.24e-01 0.1660 Inf  -1.347  0.4381
##  37 castlemart - 3 def1        -2.44e-01 0.1717 Inf  -1.422  0.4049
##  37 castlemart - 4 def1        -3.64e-01 0.1734 Inf  -2.097  0.1788
##  37 castlemart - 5 def1        -4.59e-01 0.1703 Inf  -2.696  0.0684
##  37 castlemart - 6 def1        -2.88e-01 0.1734 Inf  -1.658  0.3177
##  37 castlemart - 7 def1        -2.95e-01 0.1742 Inf  -1.694  0.3042
##  37 castlemart - 8 def1         1.15e-02 0.1726 Inf   0.067  0.9784
##  37 castlemart - 9 def1        -4.67e-01 0.1766 Inf  -2.643  0.0771
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##  37 castlemart - 10 def1       -2.82e-01 0.1819 Inf  -1.550  0.3582
##  37 castlemart - 11 def1       -4.23e-01 0.1719 Inf  -2.461  0.1067
##  37 castlemart - 12 def1       -3.41e-01 0.1720 Inf  -1.981  0.2106
##  37 castlemart - 13 def1       -2.60e-01 0.1712 Inf  -1.518  0.3687
##  37 castlemart - 14 def1       -6.08e-01 0.1726 Inf  -3.524  0.0130
##  37 castlemart - 15 def1       -1.69e-01 0.1713 Inf  -0.988  0.5940
##  37 castlemart - 16 def1       -1.25e-01 0.1679 Inf  -0.747  0.7025
##  37 castlemart - 17 def1       -2.23e-01 0.1708 Inf  -1.303  0.4568
##  37 castlemart - 18 def1       -1.99e-01 0.1740 Inf  -1.146  0.5263
##  37 castlemart - 19 def1        3.73e-01 0.1923 Inf   1.938  0.2245
##  37 castlemart - 20 def1       -1.47e-01 0.1767 Inf  -0.830  0.6658
##  37 castlemart - 22 def1       -3.70e-01 0.1721 Inf  -2.152  0.1632
##  37 castlemart - 23 def1        7.41e-02 0.1879 Inf   0.395  0.8558
##  37 castlemart - 24 def1       -2.86e-01 0.1767 Inf  -1.619  0.3313
##  37 castlemart - 25 def1       -1.87e-01 0.1742 Inf  -1.074  0.5538
##  37 castlemart - 26 def1       -2.90e-01 0.1752 Inf  -1.658  0.3177
##  37 castlemart - 27 def1       -4.04e-01 0.1742 Inf  -2.321  0.1278
##  37 castlemart - 28 def1       -3.01e-01 0.1731 Inf  -1.740  0.2877
##  37 castlemart - 29 def1       -1.07e-01 0.1732 Inf  -0.615  0.7633
##  37 castlemart - 30 def1       -1.33e-01 0.1720 Inf  -0.774  0.6909
##  37 castlemart - 31 def1       -4.69e-01 0.1663 Inf  -2.819  0.0557
##  37 castlemart - 32 def1        1.17e-01 0.1711 Inf   0.686  0.7298
##  37 castlemart - 33 def1        3.58e-02 0.1731 Inf   0.207  0.9307
##  37 castlemart - 34 def1       -4.39e-01 0.1683 Inf  -2.610  0.0819
##  37 castlemart - 35 def1       -1.91e-01 0.1776 Inf  -1.075  0.5532
##  37 castlemart - 36 def1       -4.47e-01 0.1747 Inf  -2.560  0.0900
##  37 castlemart - 37 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  37 castlemart - 38 def1       -1.58e-01 0.1707 Inf  -0.923  0.6232
##  37 castlemart - 39 def1       -2.07e-01 0.1825 Inf  -1.134  0.5314
##  37 castlemart - 41 def1       -2.10e-01 0.1736 Inf  -1.210  0.4965
##  37 castlemart - 42 def1       -3.24e-01 0.1729 Inf  -1.873  0.2418
##  37 castlemart - 43 def1       -9.25e-02 0.1700 Inf  -0.544  0.7958
##  37 castlemart - 44 def1       -6.08e-01 0.1752 Inf  -3.471  0.0144
##  37 castlemart - 45 def1       -2.77e-01 0.1732 Inf  -1.598  0.3384
##  37 castlemart - 46 def1       -4.13e-01 0.1754 Inf  -2.356  0.1257
##  37 castlemart - 47 def1        6.56e-02 0.1721 Inf   0.381  0.8618
##  37 castlemart - 48 def1       -6.52e-01 0.1716 Inf  -3.800  0.0062
##  37 castlemart - 49 def1       -3.51e-01 0.1713 Inf  -2.051  0.1917
##  37 castlemart - 50 def1       -2.25e-01 0.1742 Inf  -1.294  0.4611
##  37 castlemart - 51 def1       -5.78e-01 0.1763 Inf  -3.279  0.0225
##  37 castlemart - 52 def1       -4.25e-01 0.1733 Inf  -2.455  0.1076
##  37 castlemart - 53 def1       -2.76e-01 0.1722 Inf  -1.603  0.3368
##  37 castlemart - 54 def1       -4.00e-01 0.1708 Inf  -2.342  0.1278
##  37 castlemart - 55 def1       -2.68e-01 0.1691 Inf  -1.582  0.3450
##  37 castlemart - 56 def1       -3.22e-01 0.1786 Inf  -1.804  0.2643
##  37 castlemart - 57 def1       -3.92e-01 0.1717 Inf  -2.285  0.1329
##  37 castlemart - 58 def1       -4.48e-01 0.1735 Inf  -2.584  0.0856
##  37 castlemart - 59 def1       -9.83e-02 0.1771 Inf  -0.555  0.7901
##  37 castlemart - 60 def1       -2.04e-01 0.1709 Inf  -1.196  0.5025
##  37 castlemart - 61 def1       -4.68e-01 0.1721 Inf  -2.719  0.0661
##  38 castlemart - 39 castlemart -4.95e-02 0.1756 Inf  -0.282  0.9011
##  38 castlemart - 41 castlemart -5.26e-02 0.1621 Inf  -0.324  0.8847
##  38 castlemart - 42 castlemart -1.66e-01 0.1597 Inf  -1.041  0.5682
##  38 castlemart - 43 castlemart  6.50e-02 0.1611 Inf   0.404  0.8524
##  38 castlemart - 44 castlemart -4.50e-01 0.1670 Inf  -2.697  0.0684
##  38 castlemart - 45 castlemart -1.19e-01 0.1609 Inf  -0.741  0.7057
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##  38 castlemart - 46 castlemart -2.56e-01 0.1664 Inf  -1.537  0.3624
##  38 castlemart - 47 castlemart  2.23e-01 0.1635 Inf   1.365  0.4302
##  38 castlemart - 48 castlemart -4.94e-01 0.1589 Inf  -3.111  0.0313
##  38 castlemart - 49 castlemart -1.94e-01 0.1636 Inf  -1.184  0.5082
##  38 castlemart - 50 castlemart -6.78e-02 0.1605 Inf  -0.422  0.8468
##  38 castlemart - 51 castlemart -4.21e-01 0.1674 Inf  -2.513  0.0976
##  38 castlemart - 52 castlemart -2.68e-01 0.1654 Inf  -1.620  0.3308
##  38 castlemart - 53 castlemart -1.19e-01 0.1616 Inf  -0.734  0.7083
##  38 castlemart - 54 castlemart -2.42e-01 0.1582 Inf  -1.532  0.3641
##  38 castlemart - 55 castlemart -1.10e-01 0.1604 Inf  -0.686  0.7298
##  38 castlemart - 56 castlemart -1.65e-01 0.1683 Inf  -0.978  0.5974
##  38 castlemart - 57 castlemart -2.35e-01 0.1617 Inf  -1.452  0.3928
##  38 castlemart - 58 castlemart -2.91e-01 0.1630 Inf  -1.785  0.2714
##  38 castlemart - 59 castlemart  5.92e-02 0.1686 Inf   0.351  0.8750
##  38 castlemart - 60 castlemart -4.68e-02 0.1618 Inf  -0.289  0.8983
##  38 castlemart - 61 castlemart -3.10e-01 0.1642 Inf  -1.890  0.2368
##  38 castlemart - 1 def1         1.09e-01 0.1619 Inf   0.675  0.7353
##  38 castlemart - 2 def1        -1.33e-01 0.1616 Inf  -0.822  0.6698
##  38 castlemart - 3 def1        -1.54e-01 0.1644 Inf  -0.934  0.6201
##  38 castlemart - 4 def1        -2.73e-01 0.1668 Inf  -1.637  0.3257
##  38 castlemart - 5 def1        -3.69e-01 0.1631 Inf  -2.259  0.1395
##  38 castlemart - 6 def1        -1.97e-01 0.1661 Inf  -1.185  0.5079
##  38 castlemart - 7 def1        -2.04e-01 0.1667 Inf  -1.226  0.4897
##  38 castlemart - 8 def1         1.02e-01 0.1639 Inf   0.623  0.7605
##  38 castlemart - 9 def1        -3.76e-01 0.1698 Inf  -2.215  0.1501
##  38 castlemart - 10 def1       -1.91e-01 0.1758 Inf  -1.089  0.5465
##  38 castlemart - 11 def1       -3.32e-01 0.1663 Inf  -1.999  0.2056
##  38 castlemart - 12 def1       -2.50e-01 0.1654 Inf  -1.512  0.3711
##  38 castlemart - 13 def1       -1.69e-01 0.1625 Inf  -1.041  0.5682
##  38 castlemart - 14 def1       -5.18e-01 0.1668 Inf  -3.104  0.0318
##  38 castlemart - 15 def1       -7.86e-02 0.1676 Inf  -0.469  0.8276
##  38 castlemart - 16 def1       -3.47e-02 0.1617 Inf  -0.215  0.9281
##  38 castlemart - 17 def1       -1.32e-01 0.1657 Inf  -0.796  0.6812
##  38 castlemart - 18 def1       -1.09e-01 0.1676 Inf  -0.649  0.7465
##  38 castlemart - 19 def1        4.63e-01 0.1851 Inf   2.503  0.0989
##  38 castlemart - 20 def1       -5.61e-02 0.1706 Inf  -0.329  0.8829
##  38 castlemart - 22 def1       -2.80e-01 0.1654 Inf  -1.691  0.3055
##  38 castlemart - 23 def1        1.65e-01 0.1783 Inf   0.924  0.6229
##  38 castlemart - 24 def1       -1.95e-01 0.1684 Inf  -1.160  0.5188
##  38 castlemart - 25 def1       -9.64e-02 0.1687 Inf  -0.571  0.7828
##  38 castlemart - 26 def1       -2.00e-01 0.1700 Inf  -1.175  0.5122
##  38 castlemart - 27 def1       -3.14e-01 0.1685 Inf  -1.861  0.2451
##  38 castlemart - 28 def1       -2.11e-01 0.1700 Inf  -1.239  0.4835
##  38 castlemart - 29 def1       -1.59e-02 0.1675 Inf  -0.095  0.9700
##  38 castlemart - 30 def1       -4.24e-02 0.1649 Inf  -0.257  0.9104
##  38 castlemart - 31 def1       -3.78e-01 0.1612 Inf  -2.346  0.1278
##  38 castlemart - 32 def1        2.08e-01 0.1676 Inf   1.241  0.4832
##  38 castlemart - 33 def1        1.26e-01 0.1635 Inf   0.773  0.6909
##  38 castlemart - 34 def1       -3.49e-01 0.1622 Inf  -2.149  0.1643
##  38 castlemart - 35 def1       -1.00e-01 0.1714 Inf  -0.585  0.7742
##  38 castlemart - 36 def1       -3.57e-01 0.1671 Inf  -2.135  0.1679
##  38 castlemart - 37 def1        2.38e-02 0.1715 Inf   0.139  0.9556
##  38 castlemart - 38 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  38 castlemart - 39 def1       -1.16e-01 0.1782 Inf  -0.653  0.7444
##  38 castlemart - 41 def1       -1.19e-01 0.1650 Inf  -0.724  0.7146
##  38 castlemart - 42 def1       -2.33e-01 0.1631 Inf  -1.429  0.4001
```

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##  38 castlemart - 43 def1       -1.85e-03 0.1641 Inf  -0.011  0.9958
##  38 castlemart - 44 def1       -5.17e-01 0.1698 Inf  -3.047  0.0346
##  38 castlemart - 45 def1       -1.86e-01 0.1636 Inf  -1.138  0.5300
##  38 castlemart - 46 def1       -3.23e-01 0.1699 Inf  -1.899  0.2340
##  38 castlemart - 47 def1        1.56e-01 0.1663 Inf   0.940  0.6188
##  38 castlemart - 48 def1       -5.61e-01 0.1619 Inf  -3.467  0.0145
##  38 castlemart - 49 def1       -2.61e-01 0.1667 Inf  -1.563  0.3537
##  38 castlemart - 50 def1       -1.35e-01 0.1632 Inf  -0.825  0.6682
##  38 castlemart - 51 def1       -4.88e-01 0.1700 Inf  -2.868  0.0506
##  38 castlemart - 52 def1       -3.35e-01 0.1683 Inf  -1.989  0.2088
##  38 castlemart - 53 def1       -1.86e-01 0.1648 Inf  -1.125  0.5334
##  38 castlemart - 54 def1       -3.09e-01 0.1614 Inf  -1.916  0.2293
##  38 castlemart - 55 def1       -1.77e-01 0.1634 Inf  -1.082  0.5495
##  38 castlemart - 56 def1       -2.32e-01 0.1712 Inf  -1.352  0.4361
##  38 castlemart - 57 def1       -3.02e-01 0.1647 Inf  -1.831  0.2562
##  38 castlemart - 58 def1       -3.58e-01 0.1660 Inf  -2.155  0.1627
##  38 castlemart - 59 def1       -7.69e-03 0.1714 Inf  -0.045  0.9832
##  38 castlemart - 60 def1       -1.14e-01 0.1645 Inf  -0.691  0.7270
##  38 castlemart - 61 def1       -3.77e-01 0.1671 Inf  -2.258  0.1396
##  39 castlemart - 41 castlemart -3.13e-03 0.1801 Inf  -0.017  0.9939
##  39 castlemart - 42 castlemart -1.17e-01 0.1804 Inf  -0.647  0.7466
##  39 castlemart - 43 castlemart  1.14e-01 0.1751 Inf   0.654  0.7441
##  39 castlemart - 44 castlemart -4.01e-01 0.1803 Inf  -2.225  0.1470
##  39 castlemart - 45 castlemart -6.98e-02 0.1799 Inf  -0.388  0.8593
##  39 castlemart - 46 castlemart -2.06e-01 0.1824 Inf  -1.131  0.5320
##  39 castlemart - 47 castlemart  2.73e-01 0.1782 Inf   1.530  0.3649
##  39 castlemart - 48 castlemart -4.45e-01 0.1785 Inf  -2.494  0.1006
##  39 castlemart - 49 castlemart -1.44e-01 0.1780 Inf  -0.811  0.6746
##  39 castlemart - 50 castlemart -1.84e-02 0.1808 Inf  -0.102  0.9666
##  39 castlemart - 51 castlemart -3.71e-01 0.1823 Inf  -2.036  0.1947
##  39 castlemart - 52 castlemart -2.18e-01 0.1815 Inf  -1.203  0.4994
##  39 castlemart - 53 castlemart -6.92e-02 0.1794 Inf  -0.385  0.8612
##  39 castlemart - 54 castlemart -1.93e-01 0.1772 Inf  -1.089  0.5465
##  39 castlemart - 55 castlemart -6.05e-02 0.1775 Inf  -0.341  0.8788
##  39 castlemart - 56 castlemart -1.15e-01 0.1851 Inf  -0.622  0.7605
##  39 castlemart - 57 castlemart -1.85e-01 0.1806 Inf  -1.026  0.5741
##  39 castlemart - 58 castlemart -2.41e-01 0.1802 Inf  -1.340  0.4414
##  39 castlemart - 59 castlemart  1.09e-01 0.1850 Inf   0.587  0.7734
##  39 castlemart - 60 castlemart  2.63e-03 0.1794 Inf   0.015  0.9952
##  39 castlemart - 61 castlemart -2.61e-01 0.1792 Inf  -1.456  0.3928
##  39 castlemart - 1 def1         1.59e-01 0.1769 Inf   0.897  0.6348
##  39 castlemart - 2 def1        -8.34e-02 0.1769 Inf  -0.471  0.8276
##  39 castlemart - 3 def1        -1.04e-01 0.1815 Inf  -0.574  0.7815
##  39 castlemart - 4 def1        -2.24e-01 0.1841 Inf  -1.214  0.4942
##  39 castlemart - 5 def1        -3.19e-01 0.1816 Inf  -1.757  0.2811
##  39 castlemart - 6 def1        -1.47e-01 0.1809 Inf  -0.815  0.6730
##  39 castlemart - 7 def1        -1.55e-01 0.1806 Inf  -0.858  0.6555
##  39 castlemart - 8 def1         1.52e-01 0.1843 Inf   0.823  0.6698
##  39 castlemart - 9 def1        -3.27e-01 0.1855 Inf  -1.760  0.2796
##  39 castlemart - 10 def1       -1.42e-01 0.1907 Inf  -0.744  0.7042
##  39 castlemart - 11 def1       -2.83e-01 0.1824 Inf  -1.551  0.3574
##  39 castlemart - 12 def1       -2.01e-01 0.1800 Inf  -1.114  0.5378
##  39 castlemart - 13 def1       -1.20e-01 0.1784 Inf  -0.671  0.7369
##  39 castlemart - 14 def1       -4.68e-01 0.1797 Inf  -2.605  0.0826
##  39 castlemart - 15 def1       -2.92e-02 0.1820 Inf  -0.160  0.9484
##  39 castlemart - 16 def1        1.47e-02 0.1775 Inf   0.083  0.9741
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##  39 castlemart - 17 def1       -8.24e-02 0.1795 Inf  -0.459  0.8291
##  39 castlemart - 18 def1       -5.93e-02 0.1851 Inf  -0.320  0.8853
##  39 castlemart - 19 def1        5.13e-01 0.2019 Inf   2.540  0.0928
##  39 castlemart - 20 def1       -6.60e-03 0.1814 Inf  -0.036  0.9871
##  39 castlemart - 22 def1       -2.30e-01 0.1820 Inf  -1.265  0.4747
##  39 castlemart - 23 def1        2.14e-01 0.1963 Inf   1.091  0.5457
##  39 castlemart - 24 def1       -1.46e-01 0.1859 Inf  -0.785  0.6858
##  39 castlemart - 25 def1       -4.69e-02 0.1838 Inf  -0.255  0.9115
##  39 castlemart - 26 def1       -1.50e-01 0.1850 Inf  -0.813  0.6737
##  39 castlemart - 27 def1       -2.64e-01 0.1799 Inf  -1.468  0.3880
##  39 castlemart - 28 def1       -1.61e-01 0.1849 Inf  -0.872  0.6492
##  39 castlemart - 29 def1        3.36e-02 0.1798 Inf   0.187  0.9372
##  39 castlemart - 30 def1        7.06e-03 0.1798 Inf   0.039  0.9858
##  39 castlemart - 31 def1       -3.29e-01 0.1749 Inf  -1.880  0.2389
##  39 castlemart - 32 def1        2.57e-01 0.1787 Inf   1.441  0.3964
##  39 castlemart - 33 def1        1.76e-01 0.1824 Inf   0.964  0.6047
##  39 castlemart - 34 def1       -2.99e-01 0.1739 Inf  -1.720  0.2946
##  39 castlemart - 35 def1       -5.07e-02 0.1835 Inf  -0.277  0.9035
##  39 castlemart - 36 def1       -3.07e-01 0.1834 Inf  -1.675  0.3115
##  39 castlemart - 37 def1        7.32e-02 0.1826 Inf   0.401  0.8533
##  39 castlemart - 38 def1       -1.74e-02 0.1776 Inf  -0.098  0.9684
##  39 castlemart - 39 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  39 castlemart - 41 def1       -7.00e-02 0.1824 Inf  -0.384  0.8615
##  39 castlemart - 42 def1       -1.84e-01 0.1831 Inf  -1.003  0.5861
##  39 castlemart - 43 def1        4.76e-02 0.1776 Inf   0.268  0.9063
##  39 castlemart - 44 def1       -4.68e-01 0.1826 Inf  -2.563  0.0893
##  39 castlemart - 45 def1       -1.37e-01 0.1820 Inf  -0.751  0.7006
##  39 castlemart - 46 def1       -2.73e-01 0.1853 Inf  -1.474  0.3852
##  39 castlemart - 47 def1        2.06e-01 0.1804 Inf   1.140  0.5297
##  39 castlemart - 48 def1       -5.12e-01 0.1808 Inf  -2.831  0.0551
##  39 castlemart - 49 def1       -2.11e-01 0.1805 Inf  -1.170  0.5147
##  39 castlemart - 50 def1       -8.53e-02 0.1829 Inf  -0.466  0.8277
##  39 castlemart - 51 def1       -4.38e-01 0.1844 Inf  -2.376  0.1218
##  39 castlemart - 52 def1       -2.85e-01 0.1839 Inf  -1.552  0.3574
##  39 castlemart - 53 def1       -1.36e-01 0.1821 Inf  -0.747  0.7023
##  39 castlemart - 54 def1       -2.60e-01 0.1798 Inf  -1.445  0.3949
##  39 castlemart - 55 def1       -1.27e-01 0.1799 Inf  -0.708  0.7205
##  39 castlemart - 56 def1       -1.82e-01 0.1875 Inf  -0.971  0.6015
##  39 castlemart - 57 def1       -2.52e-01 0.1830 Inf  -1.378  0.4246
##  39 castlemart - 58 def1       -3.08e-01 0.1826 Inf  -1.688  0.3064
##  39 castlemart - 59 def1        4.18e-02 0.1873 Inf   0.223  0.9259
##  39 castlemart - 60 def1       -6.43e-02 0.1816 Inf  -0.354  0.8750
##  39 castlemart - 61 def1       -3.28e-01 0.1815 Inf  -1.806  0.2636
##  41 castlemart - 42 castlemart -1.14e-01 0.1616 Inf  -0.704  0.7218
##  41 castlemart - 43 castlemart  1.18e-01 0.1646 Inf   0.715  0.7189
##  41 castlemart - 44 castlemart -3.98e-01 0.1669 Inf  -2.384  0.1205
##  41 castlemart - 45 castlemart -6.67e-02 0.1631 Inf  -0.409  0.8504
##  41 castlemart - 46 castlemart -2.03e-01 0.1650 Inf  -1.231  0.4877
##  41 castlemart - 47 castlemart  2.76e-01 0.1619 Inf   1.703  0.3007
##  41 castlemart - 48 castlemart -4.42e-01 0.1618 Inf  -2.731  0.0648
##  41 castlemart - 49 castlemart -1.41e-01 0.1632 Inf  -0.865  0.6523
##  41 castlemart - 50 castlemart -1.52e-02 0.1593 Inf  -0.096  0.9697
##  41 castlemart - 51 castlemart -3.68e-01 0.1664 Inf  -2.212  0.1506
##  41 castlemart - 52 castlemart -2.15e-01 0.1634 Inf  -1.317  0.4501
##  41 castlemart - 53 castlemart -6.60e-02 0.1625 Inf  -0.406  0.8517
##  41 castlemart - 54 castlemart -1.90e-01 0.1561 Inf  -1.216  0.4930
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##  41 castlemart - 55 castlemart -5.74e-02 0.1606 Inf  -0.357  0.8736
##  41 castlemart - 56 castlemart -1.12e-01 0.1695 Inf  -0.661  0.7410
##  41 castlemart - 57 castlemart -1.82e-01 0.1599 Inf  -1.139  0.5297
##  41 castlemart - 58 castlemart -2.38e-01 0.1614 Inf  -1.477  0.3831
##  41 castlemart - 59 castlemart  1.12e-01 0.1686 Inf   0.663  0.7404
##  41 castlemart - 60 castlemart  5.76e-03 0.1623 Inf   0.035  0.9871
##  41 castlemart - 61 castlemart -2.58e-01 0.1628 Inf  -1.583  0.3445
##  41 castlemart - 1 def1         1.62e-01 0.1625 Inf   0.996  0.5899
##  41 castlemart - 2 def1        -8.03e-02 0.1627 Inf  -0.493  0.8185
##  41 castlemart - 3 def1        -1.01e-01 0.1630 Inf  -0.620  0.7615
##  41 castlemart - 4 def1        -2.20e-01 0.1663 Inf  -1.326  0.4465
##  41 castlemart - 5 def1        -3.16e-01 0.1647 Inf  -1.918  0.2284
##  41 castlemart - 6 def1        -1.44e-01 0.1638 Inf  -0.881  0.6449
##  41 castlemart - 7 def1        -1.52e-01 0.1674 Inf  -0.907  0.6321
##  41 castlemart - 8 def1         1.55e-01 0.1683 Inf   0.919  0.6242
##  41 castlemart - 9 def1        -3.23e-01 0.1685 Inf  -1.919  0.2280
##  41 castlemart - 10 def1       -1.39e-01 0.1749 Inf  -0.793  0.6822
##  41 castlemart - 11 def1       -2.80e-01 0.1638 Inf  -1.709  0.2982
##  41 castlemart - 12 def1       -1.97e-01 0.1584 Inf  -1.247  0.4821
##  41 castlemart - 13 def1       -1.17e-01 0.1642 Inf  -0.711  0.7201
##  41 castlemart - 14 def1       -4.65e-01 0.1615 Inf  -2.879  0.0493
##  41 castlemart - 15 def1       -2.60e-02 0.1666 Inf  -0.156  0.9500
##  41 castlemart - 16 def1        1.78e-02 0.1616 Inf   0.110  0.9633
##  41 castlemart - 17 def1       -7.93e-02 0.1617 Inf  -0.491  0.8207
##  41 castlemart - 18 def1       -5.61e-02 0.1684 Inf  -0.333  0.8816
##  41 castlemart - 19 def1        5.16e-01 0.1877 Inf   2.749  0.0631
##  41 castlemart - 20 def1       -3.48e-03 0.1685 Inf  -0.021  0.9933
##  41 castlemart - 22 def1       -2.27e-01 0.1662 Inf  -1.367  0.4294
##  41 castlemart - 23 def1        2.17e-01 0.1799 Inf   1.208  0.4976
##  41 castlemart - 24 def1       -1.43e-01 0.1699 Inf  -0.840  0.6614
##  41 castlemart - 25 def1       -4.38e-02 0.1703 Inf  -0.257  0.9104
##  41 castlemart - 26 def1       -1.47e-01 0.1688 Inf  -0.872  0.6492
##  41 castlemart - 27 def1       -2.61e-01 0.1679 Inf  -1.555  0.3564
##  41 castlemart - 28 def1       -1.58e-01 0.1684 Inf  -0.939  0.6194
##  41 castlemart - 29 def1        3.67e-02 0.1672 Inf   0.219  0.9267
##  41 castlemart - 30 def1        1.02e-02 0.1673 Inf   0.061  0.9797
##  41 castlemart - 31 def1       -3.26e-01 0.1611 Inf  -2.022  0.1999
##  41 castlemart - 32 def1        2.61e-01 0.1677 Inf   1.554  0.3567
##  41 castlemart - 33 def1        1.79e-01 0.1627 Inf   1.100  0.5430
##  41 castlemart - 34 def1       -2.96e-01 0.1626 Inf  -1.820  0.2599
##  41 castlemart - 35 def1       -4.76e-02 0.1694 Inf  -0.281  0.9011
##  41 castlemart - 36 def1       -3.04e-01 0.1666 Inf  -1.826  0.2579
##  41 castlemart - 37 def1        7.63e-02 0.1737 Inf   0.440  0.8373
##  41 castlemart - 38 def1       -1.43e-02 0.1643 Inf  -0.087  0.9740
##  41 castlemart - 39 def1       -6.38e-02 0.1823 Inf  -0.350  0.8755
##  41 castlemart - 41 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  41 castlemart - 42 def1       -1.81e-01 0.1646 Inf  -1.097  0.5445
##  41 castlemart - 43 def1        5.07e-02 0.1672 Inf   0.303  0.8922
##  41 castlemart - 44 def1       -4.65e-01 0.1693 Inf  -2.745  0.0638
##  41 castlemart - 45 def1       -1.34e-01 0.1654 Inf  -0.807  0.6760
##  41 castlemart - 46 def1       -2.70e-01 0.1682 Inf  -1.606  0.3361
##  41 castlemart - 47 def1        2.09e-01 0.1644 Inf   1.271  0.4719
##  41 castlemart - 48 def1       -5.09e-01 0.1643 Inf  -3.096  0.0321
##  41 castlemart - 49 def1       -2.08e-01 0.1660 Inf  -1.254  0.4792
##  41 castlemart - 50 def1       -8.21e-02 0.1616 Inf  -0.508  0.8095
##  41 castlemart - 51 def1       -4.35e-01 0.1687 Inf  -2.579  0.0864
```

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##  41 castlemart - 52 def1       -2.82e-01 0.1660 Inf  -1.700  0.3020
##  41 castlemart - 53 def1       -1.33e-01 0.1653 Inf  -0.804  0.6776
##  41 castlemart - 54 def1       -2.57e-01 0.1589 Inf  -1.615  0.3328
##  41 castlemart - 55 def1       -1.24e-01 0.1633 Inf  -0.761  0.6983
##  41 castlemart - 56 def1       -1.79e-01 0.1721 Inf  -1.040  0.5692
##  41 castlemart - 57 def1       -2.49e-01 0.1625 Inf  -1.532  0.3641
##  41 castlemart - 58 def1       -3.05e-01 0.1640 Inf  -1.861  0.2452
##  41 castlemart - 59 def1        4.49e-02 0.1710 Inf   0.262  0.9085
##  41 castlemart - 60 def1       -6.11e-02 0.1647 Inf  -0.371  0.8677
##  41 castlemart - 61 def1       -3.25e-01 0.1653 Inf  -1.964  0.2159
##  42 castlemart - 43 castlemart  2.31e-01 0.1649 Inf   1.403  0.4127
##  42 castlemart - 44 castlemart -2.84e-01 0.1675 Inf  -1.697  0.3031
##  42 castlemart - 45 castlemart  4.70e-02 0.1639 Inf   0.287  0.8984
##  42 castlemart - 46 castlemart -8.95e-02 0.1645 Inf  -0.544  0.7958
##  42 castlemart - 47 castlemart  3.89e-01 0.1639 Inf   2.376  0.1218
##  42 castlemart - 48 castlemart -3.28e-01 0.1628 Inf  -2.016  0.2009
##  42 castlemart - 49 castlemart -2.75e-02 0.1639 Inf  -0.168  0.9447
##  42 castlemart - 50 castlemart  9.85e-02 0.1626 Inf   0.605  0.7668
##  42 castlemart - 51 castlemart -2.54e-01 0.1660 Inf  -1.533  0.3641
##  42 castlemart - 52 castlemart -1.02e-01 0.1658 Inf  -0.613  0.7640
##  42 castlemart - 53 castlemart  4.77e-02 0.1625 Inf   0.293  0.8967
##  42 castlemart - 54 castlemart -7.61e-02 0.1578 Inf  -0.483  0.8236
##  42 castlemart - 55 castlemart  5.63e-02 0.1595 Inf   0.353  0.8750
##  42 castlemart - 56 castlemart  1.64e-03 0.1632 Inf   0.010  0.9961
##  42 castlemart - 57 castlemart -6.85e-02 0.1634 Inf  -0.419  0.8478
##  42 castlemart - 58 castlemart -1.25e-01 0.1642 Inf  -0.759  0.6995
##  42 castlemart - 59 castlemart  2.25e-01 0.1696 Inf   1.330  0.4454
##  42 castlemart - 60 castlemart  1.19e-01 0.1612 Inf   0.741  0.7057
##  42 castlemart - 61 castlemart -1.44e-01 0.1643 Inf  -0.877  0.6465
##  42 castlemart - 1 def1         2.76e-01 0.1624 Inf   1.696  0.3034
##  42 castlemart - 2 def1         3.34e-02 0.1629 Inf   0.205  0.9310
##  42 castlemart - 3 def1         1.27e-02 0.1623 Inf   0.078  0.9751
##  42 castlemart - 4 def1        -1.07e-01 0.1637 Inf  -0.652  0.7448
##  42 castlemart - 5 def1        -2.02e-01 0.1628 Inf  -1.242  0.4832
##  42 castlemart - 6 def1        -3.06e-02 0.1659 Inf  -0.185  0.9373
##  42 castlemart - 7 def1        -3.81e-02 0.1668 Inf  -0.228  0.9234
##  42 castlemart - 8 def1         2.68e-01 0.1640 Inf   1.636  0.3257
##  42 castlemart - 9 def1        -2.10e-01 0.1676 Inf  -1.251  0.4802
##  42 castlemart - 10 def1       -2.51e-02 0.1755 Inf  -0.143  0.9536
##  42 castlemart - 11 def1       -1.66e-01 0.1609 Inf  -1.033  0.5729
##  42 castlemart - 12 def1       -8.38e-02 0.1628 Inf  -0.515  0.8066
##  42 castlemart - 13 def1       -3.00e-03 0.1606 Inf  -0.019  0.9939
##  42 castlemart - 14 def1       -3.51e-01 0.1665 Inf  -2.110  0.1751
##  42 castlemart - 15 def1        8.77e-02 0.1673 Inf   0.524  0.8051
##  42 castlemart - 16 def1        1.32e-01 0.1612 Inf   0.816  0.6730
##  42 castlemart - 17 def1        3.44e-02 0.1658 Inf   0.207  0.9301
##  42 castlemart - 18 def1        5.75e-02 0.1676 Inf   0.343  0.8775
##  42 castlemart - 19 def1        6.30e-01 0.1822 Inf   3.456  0.0147
##  42 castlemart - 20 def1        1.10e-01 0.1702 Inf   0.648  0.7466
##  42 castlemart - 22 def1       -1.13e-01 0.1653 Inf  -0.686  0.7298
##  42 castlemart - 23 def1        3.31e-01 0.1809 Inf   1.830  0.2562
##  42 castlemart - 24 def1       -2.91e-02 0.1653 Inf  -0.176  0.9405
##  42 castlemart - 25 def1        6.99e-02 0.1632 Inf   0.428  0.8436
##  42 castlemart - 26 def1       -3.36e-02 0.1697 Inf  -0.198  0.9327
##  42 castlemart - 27 def1       -1.47e-01 0.1698 Inf  -0.867  0.6518
##  42 castlemart - 28 def1       -4.44e-02 0.1693 Inf  -0.262  0.9085
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##  42 castlemart - 29 def1        1.50e-01 0.1668 Inf   0.901  0.6340
##  42 castlemart - 30 def1        1.24e-01 0.1650 Inf   0.751  0.7006
##  42 castlemart - 31 def1       -2.12e-01 0.1602 Inf  -1.324  0.4475
##  42 castlemart - 32 def1        3.74e-01 0.1674 Inf   2.235  0.1440
##  42 castlemart - 33 def1        2.93e-01 0.1620 Inf   1.807  0.2630
##  42 castlemart - 34 def1       -1.82e-01 0.1640 Inf  -1.111  0.5391
##  42 castlemart - 35 def1        6.61e-02 0.1678 Inf   0.394  0.8562
##  42 castlemart - 36 def1       -1.90e-01 0.1656 Inf  -1.150  0.5239
##  42 castlemart - 37 def1        1.90e-01 0.1722 Inf   1.104  0.5414
##  42 castlemart - 38 def1        9.94e-02 0.1615 Inf   0.615  0.7632
##  42 castlemart - 39 def1        4.99e-02 0.1823 Inf   0.274  0.9051
##  42 castlemart - 41 def1        4.68e-02 0.1637 Inf   0.286  0.8984
##  42 castlemart - 42 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  42 castlemart - 43 def1        1.64e-01 0.1671 Inf   0.984  0.5956
##  42 castlemart - 44 def1       -3.51e-01 0.1695 Inf  -2.071  0.1860
##  42 castlemart - 45 def1       -1.99e-02 0.1658 Inf  -0.120  0.9609
##  42 castlemart - 46 def1       -1.56e-01 0.1673 Inf  -0.935  0.6201
##  42 castlemart - 47 def1        3.23e-01 0.1659 Inf   1.944  0.2228
##  42 castlemart - 48 def1       -3.95e-01 0.1649 Inf  -2.396  0.1188
##  42 castlemart - 49 def1       -9.44e-02 0.1663 Inf  -0.568  0.7845
##  42 castlemart - 50 def1        3.16e-02 0.1645 Inf   0.192  0.9352
##  42 castlemart - 51 def1       -3.21e-01 0.1678 Inf  -1.915  0.2293
##  42 castlemart - 52 def1       -1.69e-01 0.1680 Inf  -1.003  0.5861
##  42 castlemart - 53 def1       -1.92e-02 0.1650 Inf  -0.117  0.9621
##  42 castlemart - 54 def1       -1.43e-01 0.1602 Inf  -0.893  0.6371
##  42 castlemart - 55 def1       -1.06e-02 0.1618 Inf  -0.066  0.9784
##  42 castlemart - 56 def1       -6.53e-02 0.1655 Inf  -0.394  0.8559
##  42 castlemart - 57 def1       -1.35e-01 0.1656 Inf  -0.818  0.6730
##  42 castlemart - 58 def1       -1.92e-01 0.1664 Inf  -1.151  0.5233
##  42 castlemart - 59 def1        1.59e-01 0.1716 Inf   0.924  0.6229
##  42 castlemart - 60 def1        5.26e-02 0.1631 Inf   0.322  0.8850
##  42 castlemart - 61 def1       -2.11e-01 0.1664 Inf  -1.268  0.4732
##  43 castlemart - 44 castlemart -5.16e-01 0.1622 Inf  -3.178  0.0277
##  43 castlemart - 45 castlemart -1.84e-01 0.1618 Inf  -1.139  0.5297
##  43 castlemart - 46 castlemart -3.21e-01 0.1643 Inf  -1.953  0.2200
##  43 castlemart - 47 castlemart  1.58e-01 0.1617 Inf   0.978  0.5974
##  43 castlemart - 48 castlemart -5.60e-01 0.1625 Inf  -3.442  0.0151
##  43 castlemart - 49 castlemart -2.59e-01 0.1624 Inf  -1.593  0.3403
##  43 castlemart - 50 castlemart -1.33e-01 0.1651 Inf  -0.805  0.6774
##  43 castlemart - 51 castlemart -4.86e-01 0.1665 Inf  -2.917  0.0455
##  43 castlemart - 52 castlemart -3.33e-01 0.1658 Inf  -2.008  0.2023
##  43 castlemart - 53 castlemart -1.84e-01 0.1593 Inf  -1.153  0.5221
##  43 castlemart - 54 castlemart -3.07e-01 0.1614 Inf  -1.905  0.2323
##  43 castlemart - 55 castlemart -1.75e-01 0.1604 Inf  -1.091  0.5457
##  43 castlemart - 56 castlemart -2.30e-01 0.1702 Inf  -1.350  0.4366
##  43 castlemart - 57 castlemart -3.00e-01 0.1633 Inf  -1.836  0.2539
##  43 castlemart - 58 castlemart -3.56e-01 0.1646 Inf  -2.163  0.1607
##  43 castlemart - 59 castlemart -5.84e-03 0.1633 Inf  -0.036  0.9871
##  43 castlemart - 60 castlemart -1.12e-01 0.1638 Inf  -0.683  0.7314
##  43 castlemart - 61 castlemart -3.75e-01 0.1647 Inf  -2.279  0.1344
##  43 castlemart - 1 def1         4.42e-02 0.1605 Inf   0.275  0.9040
##  43 castlemart - 2 def1        -1.98e-01 0.1599 Inf  -1.237  0.4845
##  43 castlemart - 3 def1        -2.19e-01 0.1648 Inf  -1.326  0.4465
##  43 castlemart - 4 def1        -3.38e-01 0.1692 Inf  -1.998  0.2060
##  43 castlemart - 5 def1        -4.34e-01 0.1663 Inf  -2.607  0.0823
##  43 castlemart - 6 def1        -2.62e-01 0.1669 Inf  -1.570  0.3508
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##  43 castlemart - 7 def1        -2.69e-01 0.1674 Inf  -1.609  0.3347
##  43 castlemart - 8 def1         3.71e-02 0.1694 Inf   0.219  0.9267
##  43 castlemart - 9 def1        -4.41e-01 0.1700 Inf  -2.595  0.0841
##  43 castlemart - 10 def1       -2.56e-01 0.1755 Inf  -1.461  0.3915
##  43 castlemart - 11 def1       -3.97e-01 0.1671 Inf  -2.379  0.1215
##  43 castlemart - 12 def1       -3.15e-01 0.1643 Inf  -1.918  0.2284
##  43 castlemart - 13 def1       -2.34e-01 0.1652 Inf  -1.418  0.4066
##  43 castlemart - 14 def1       -5.83e-01 0.1632 Inf  -3.570  0.0120
##  43 castlemart - 15 def1       -1.44e-01 0.1675 Inf  -0.858  0.6555
##  43 castlemart - 16 def1       -9.98e-02 0.1583 Inf  -0.630  0.7567
##  43 castlemart - 17 def1       -1.97e-01 0.1664 Inf  -1.183  0.5088
##  43 castlemart - 18 def1       -1.74e-01 0.1639 Inf  -1.060  0.5591
##  43 castlemart - 19 def1        3.98e-01 0.1850 Inf   2.153  0.1631
##  43 castlemart - 20 def1       -1.21e-01 0.1682 Inf  -0.720  0.7164
##  43 castlemart - 22 def1       -3.45e-01 0.1651 Inf  -2.088  0.1811
##  43 castlemart - 23 def1        9.98e-02 0.1816 Inf   0.549  0.7923
##  43 castlemart - 24 def1       -2.60e-01 0.1705 Inf  -1.527  0.3659
##  43 castlemart - 25 def1       -1.61e-01 0.1705 Inf  -0.947  0.6159
##  43 castlemart - 26 def1       -2.65e-01 0.1671 Inf  -1.586  0.3438
##  43 castlemart - 27 def1       -3.79e-01 0.1679 Inf  -2.255  0.1403
##  43 castlemart - 28 def1       -2.76e-01 0.1672 Inf  -1.649  0.3210
##  43 castlemart - 29 def1       -8.09e-02 0.1668 Inf  -0.485  0.8231
##  43 castlemart - 30 def1       -1.07e-01 0.1681 Inf  -0.639  0.7526
##  43 castlemart - 31 def1       -4.43e-01 0.1574 Inf  -2.817  0.0559
##  43 castlemart - 32 def1        1.43e-01 0.1677 Inf   0.852  0.6569
##  43 castlemart - 33 def1        6.14e-02 0.1655 Inf   0.371  0.8680
##  43 castlemart - 34 def1       -4.14e-01 0.1620 Inf  -2.553  0.0905
##  43 castlemart - 35 def1       -1.65e-01 0.1697 Inf  -0.974  0.5999
##  43 castlemart - 36 def1       -4.22e-01 0.1667 Inf  -2.530  0.0948
##  43 castlemart - 37 def1       -4.13e-02 0.1699 Inf  -0.243  0.9153
##  43 castlemart - 38 def1       -1.32e-01 0.1632 Inf  -0.808  0.6757
##  43 castlemart - 39 def1       -1.81e-01 0.1774 Inf  -1.023  0.5757
##  43 castlemart - 41 def1       -1.85e-01 0.1670 Inf  -1.105  0.5412
##  43 castlemart - 42 def1       -2.98e-01 0.1677 Inf  -1.778  0.2736
##  43 castlemart - 43 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  43 castlemart - 44 def1       -5.82e-01 0.1647 Inf  -3.537  0.0127
##  43 castlemart - 45 def1       -2.51e-01 0.1641 Inf  -1.530  0.3649
##  43 castlemart - 46 def1       -3.88e-01 0.1674 Inf  -2.316  0.1278
##  43 castlemart - 47 def1        9.12e-02 0.1641 Inf   0.556  0.7898
##  43 castlemart - 48 def1       -6.26e-01 0.1650 Inf  -3.796  0.0063
##  43 castlemart - 49 def1       -3.26e-01 0.1651 Inf  -1.972  0.2136
##  43 castlemart - 50 def1       -2.00e-01 0.1673 Inf  -1.194  0.5031
##  43 castlemart - 51 def1       -5.53e-01 0.1687 Inf  -3.276  0.0225
##  43 castlemart - 52 def1       -4.00e-01 0.1683 Inf  -2.376  0.1218
##  43 castlemart - 53 def1       -2.51e-01 0.1621 Inf  -1.545  0.3596
##  43 castlemart - 54 def1       -3.74e-01 0.1641 Inf  -2.281  0.1338
##  43 castlemart - 55 def1       -2.42e-01 0.1631 Inf  -1.483  0.3811
##  43 castlemart - 56 def1       -2.97e-01 0.1727 Inf  -1.717  0.2962
##  43 castlemart - 57 def1       -3.67e-01 0.1658 Inf  -2.211  0.1506
##  43 castlemart - 58 def1       -4.23e-01 0.1672 Inf  -2.530  0.0948
##  43 castlemart - 59 def1       -7.27e-02 0.1658 Inf  -0.439  0.8378
##  43 castlemart - 60 def1       -1.79e-01 0.1661 Inf  -1.076  0.5522
##  43 castlemart - 61 def1       -4.42e-01 0.1671 Inf  -2.646  0.0766
##  44 castlemart - 45 castlemart  3.31e-01 0.1641 Inf   2.018  0.2006
##  44 castlemart - 46 castlemart  1.95e-01 0.1677 Inf   1.161  0.5180
##  44 castlemart - 47 castlemart  6.74e-01 0.1612 Inf   4.178  0.0023
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##  44 castlemart - 48 castlemart -4.40e-02 0.1664 Inf  -0.264  0.9076
##  44 castlemart - 49 castlemart  2.57e-01 0.1616 Inf   1.589  0.3426
##  44 castlemart - 50 castlemart  3.83e-01 0.1650 Inf   2.319  0.1278
##  44 castlemart - 51 castlemart  2.98e-02 0.1652 Inf   0.180  0.9384
##  44 castlemart - 52 castlemart  1.83e-01 0.1682 Inf   1.085  0.5484
##  44 castlemart - 53 castlemart  3.32e-01 0.1628 Inf   2.038  0.1944
##  44 castlemart - 54 castlemart  2.08e-01 0.1630 Inf   1.276  0.4697
##  44 castlemart - 55 castlemart  3.40e-01 0.1624 Inf   2.097  0.1788
##  44 castlemart - 56 castlemart  2.86e-01 0.1725 Inf   1.657  0.3178
##  44 castlemart - 57 castlemart  2.16e-01 0.1674 Inf   1.289  0.4636
##  44 castlemart - 58 castlemart  1.60e-01 0.1670 Inf   0.955  0.6105
##  44 castlemart - 59 castlemart  5.10e-01 0.1679 Inf   3.035  0.0356
##  44 castlemart - 60 castlemart  4.04e-01 0.1653 Inf   2.442  0.1104
##  44 castlemart - 61 castlemart  1.40e-01 0.1674 Inf   0.837  0.6630
##  44 castlemart - 1 def1         5.60e-01 0.1636 Inf   3.422  0.0159
##  44 castlemart - 2 def1         3.18e-01 0.1643 Inf   1.933  0.2254
##  44 castlemart - 3 def1         2.97e-01 0.1682 Inf   1.765  0.2775
##  44 castlemart - 4 def1         1.77e-01 0.1717 Inf   1.034  0.5729
##  44 castlemart - 5 def1         8.19e-02 0.1685 Inf   0.486  0.8226
##  44 castlemart - 6 def1         2.54e-01 0.1693 Inf   1.497  0.3764
##  44 castlemart - 7 def1         2.46e-01 0.1656 Inf   1.486  0.3799
##  44 castlemart - 8 def1         5.53e-01 0.1720 Inf   3.214  0.0260
##  44 castlemart - 9 def1         7.45e-02 0.1724 Inf   0.432  0.8429
##  44 castlemart - 10 def1        2.59e-01 0.1779 Inf   1.457  0.3927
##  44 castlemart - 11 def1        1.18e-01 0.1695 Inf   0.696  0.7247
##  44 castlemart - 12 def1        2.00e-01 0.1645 Inf   1.219  0.4928
##  44 castlemart - 13 def1        2.81e-01 0.1692 Inf   1.662  0.3165
##  44 castlemart - 14 def1       -6.71e-02 0.1659 Inf  -0.405  0.8524
##  44 castlemart - 15 def1        3.72e-01 0.1693 Inf   2.196  0.1540
##  44 castlemart - 16 def1        4.16e-01 0.1605 Inf   2.590  0.0851
##  44 castlemart - 17 def1        3.19e-01 0.1690 Inf   1.886  0.2378
##  44 castlemart - 18 def1        3.42e-01 0.1705 Inf   2.004  0.2037
##  44 castlemart - 19 def1        9.14e-01 0.1904 Inf   4.800  0.0005
##  44 castlemart - 20 def1        3.94e-01 0.1691 Inf   2.332  0.1278
##  44 castlemart - 22 def1        1.71e-01 0.1665 Inf   1.025  0.5745
##  44 castlemart - 23 def1        6.15e-01 0.1836 Inf   3.350  0.0186
##  44 castlemart - 24 def1        2.55e-01 0.1720 Inf   1.483  0.3812
##  44 castlemart - 25 def1        3.54e-01 0.1719 Inf   2.060  0.1892
##  44 castlemart - 26 def1        2.51e-01 0.1687 Inf   1.486  0.3799
##  44 castlemart - 27 def1        1.37e-01 0.1700 Inf   0.805  0.6773
##  44 castlemart - 28 def1        2.40e-01 0.1704 Inf   1.407  0.4105
##  44 castlemart - 29 def1        4.35e-01 0.1640 Inf   2.650  0.0761
##  44 castlemart - 30 def1        4.08e-01 0.1684 Inf   2.424  0.1135
##  44 castlemart - 31 def1        7.22e-02 0.1577 Inf   0.458  0.8295
##  44 castlemart - 32 def1        6.58e-01 0.1726 Inf   3.814  0.0060
##  44 castlemart - 33 def1        5.77e-01 0.1678 Inf   3.438  0.0151
##  44 castlemart - 34 def1        1.02e-01 0.1671 Inf   0.610  0.7655
##  44 castlemart - 35 def1        3.50e-01 0.1701 Inf   2.060  0.1892
##  44 castlemart - 36 def1        9.38e-02 0.1684 Inf   0.557  0.7896
##  44 castlemart - 37 def1        4.74e-01 0.1753 Inf   2.705  0.0674
##  44 castlemart - 38 def1        3.84e-01 0.1691 Inf   2.268  0.1375
##  44 castlemart - 39 def1        3.34e-01 0.1825 Inf   1.830  0.2562
##  44 castlemart - 41 def1        3.31e-01 0.1694 Inf   1.954  0.2199
##  44 castlemart - 42 def1        2.17e-01 0.1704 Inf   1.276  0.4697
##  44 castlemart - 43 def1        4.49e-01 0.1648 Inf   2.721  0.0658
##  44 castlemart - 44 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
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##  44 castlemart - 45 def1        2.64e-01 0.1665 Inf   1.588  0.3427
##  44 castlemart - 46 def1        1.28e-01 0.1708 Inf   0.748  0.7018
##  44 castlemart - 47 def1        6.07e-01 0.1637 Inf   3.706  0.0082
##  44 castlemart - 48 def1       -1.11e-01 0.1689 Inf  -0.656  0.7428
##  44 castlemart - 49 def1        1.90e-01 0.1644 Inf   1.155  0.5213
##  44 castlemart - 50 def1        3.16e-01 0.1673 Inf   1.888  0.2372
##  44 castlemart - 51 def1       -3.71e-02 0.1675 Inf  -0.222  0.9261
##  44 castlemart - 52 def1        1.16e-01 0.1708 Inf   0.677  0.7335
##  44 castlemart - 53 def1        2.65e-01 0.1657 Inf   1.599  0.3384
##  44 castlemart - 54 def1        1.41e-01 0.1658 Inf   0.851  0.6573
##  44 castlemart - 55 def1        2.74e-01 0.1651 Inf   1.657  0.3178
##  44 castlemart - 56 def1        2.19e-01 0.1750 Inf   1.251  0.4803
##  44 castlemart - 57 def1        1.49e-01 0.1700 Inf   0.875  0.6474
##  44 castlemart - 58 def1        9.27e-02 0.1696 Inf   0.546  0.7947
##  44 castlemart - 59 def1        4.43e-01 0.1704 Inf   2.599  0.0836
##  44 castlemart - 60 def1        3.37e-01 0.1676 Inf   2.009  0.2023
##  44 castlemart - 61 def1        7.33e-02 0.1699 Inf   0.431  0.8430
##  45 castlemart - 46 castlemart -1.36e-01 0.1644 Inf  -0.830  0.6658
##  45 castlemart - 47 castlemart  3.42e-01 0.1584 Inf   2.161  0.1607
##  45 castlemart - 48 castlemart -3.75e-01 0.1627 Inf  -2.307  0.1286
##  45 castlemart - 49 castlemart -7.45e-02 0.1630 Inf  -0.457  0.8295
##  45 castlemart - 50 castlemart  5.14e-02 0.1613 Inf   0.319  0.8860
##  45 castlemart - 51 castlemart -3.01e-01 0.1663 Inf  -1.813  0.2608
##  45 castlemart - 52 castlemart -1.49e-01 0.1647 Inf  -0.902  0.6332
##  45 castlemart - 53 castlemart  6.35e-04 0.1608 Inf   0.004  0.9979
##  45 castlemart - 54 castlemart -1.23e-01 0.1559 Inf  -0.790  0.6840
##  45 castlemart - 55 castlemart  9.27e-03 0.1608 Inf   0.058  0.9801
##  45 castlemart - 56 castlemart -4.54e-02 0.1691 Inf  -0.268  0.9062
##  45 castlemart - 57 castlemart -1.16e-01 0.1630 Inf  -0.709  0.7205
##  45 castlemart - 58 castlemart -1.72e-01 0.1609 Inf  -1.067  0.5566
##  45 castlemart - 59 castlemart  1.78e-01 0.1690 Inf   1.056  0.5605
##  45 castlemart - 60 castlemart  7.24e-02 0.1603 Inf   0.452  0.8311
##  45 castlemart - 61 castlemart -1.91e-01 0.1639 Inf  -1.166  0.5162
##  45 castlemart - 1 def1         2.28e-01 0.1615 Inf   1.414  0.4080
##  45 castlemart - 2 def1        -1.36e-02 0.1594 Inf  -0.085  0.9741
##  45 castlemart - 3 def1        -3.43e-02 0.1646 Inf  -0.209  0.9301
##  45 castlemart - 4 def1        -1.54e-01 0.1664 Inf  -0.924  0.6229
##  45 castlemart - 5 def1        -2.49e-01 0.1640 Inf  -1.520  0.3683
##  45 castlemart - 6 def1        -7.77e-02 0.1663 Inf  -0.467  0.8276
##  45 castlemart - 7 def1        -8.51e-02 0.1656 Inf  -0.514  0.8068
##  45 castlemart - 8 def1         2.21e-01 0.1691 Inf   1.309  0.4535
##  45 castlemart - 9 def1        -2.57e-01 0.1657 Inf  -1.550  0.3582
##  45 castlemart - 10 def1       -7.21e-02 0.1725 Inf  -0.418  0.8486
##  45 castlemart - 11 def1       -2.13e-01 0.1664 Inf  -1.281  0.4669
##  45 castlemart - 12 def1       -1.31e-01 0.1628 Inf  -0.804  0.6778
##  45 castlemart - 13 def1       -5.00e-02 0.1645 Inf  -0.304  0.8922
##  45 castlemart - 14 def1       -3.98e-01 0.1655 Inf  -2.407  0.1167
##  45 castlemart - 15 def1        4.06e-02 0.1662 Inf   0.244  0.9149
##  45 castlemart - 16 def1        8.45e-02 0.1574 Inf   0.537  0.7996
##  45 castlemart - 17 def1       -1.26e-02 0.1662 Inf  -0.076  0.9763
##  45 castlemart - 18 def1        1.05e-02 0.1677 Inf   0.063  0.9790
##  45 castlemart - 19 def1        5.83e-01 0.1854 Inf   3.143  0.0295
##  45 castlemart - 20 def1        6.32e-02 0.1668 Inf   0.379  0.8633
##  45 castlemart - 22 def1       -1.60e-01 0.1611 Inf  -0.996  0.5899
##  45 castlemart - 23 def1        2.84e-01 0.1767 Inf   1.608  0.3351
##  45 castlemart - 24 def1       -7.61e-02 0.1685 Inf  -0.451  0.8311
```

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##  45 castlemart - 25 def1        2.29e-02 0.1701 Inf   0.135  0.9561
##  45 castlemart - 26 def1       -8.06e-02 0.1684 Inf  -0.479  0.8242
##  45 castlemart - 27 def1       -1.94e-01 0.1699 Inf  -1.144  0.5275
##  45 castlemart - 28 def1       -9.14e-02 0.1683 Inf  -0.543  0.7959
##  45 castlemart - 29 def1        1.03e-01 0.1667 Inf   0.620  0.7615
##  45 castlemart - 30 def1        7.69e-02 0.1666 Inf   0.461  0.8291
##  45 castlemart - 31 def1       -2.59e-01 0.1570 Inf  -1.650  0.3210
##  45 castlemart - 32 def1        3.27e-01 0.1700 Inf   1.925  0.2276
##  45 castlemart - 33 def1        2.46e-01 0.1659 Inf   1.480  0.3820
##  45 castlemart - 34 def1       -2.29e-01 0.1628 Inf  -1.409  0.4104
##  45 castlemart - 35 def1        1.90e-02 0.1692 Inf   0.113  0.9631
##  45 castlemart - 36 def1       -2.37e-01 0.1660 Inf  -1.430  0.3995
##  45 castlemart - 37 def1        1.43e-01 0.1736 Inf   0.824  0.6688
##  45 castlemart - 38 def1        5.24e-02 0.1633 Inf   0.321  0.8852
##  45 castlemart - 39 def1        2.91e-03 0.1823 Inf   0.016  0.9948
##  45 castlemart - 41 def1       -2.18e-04 0.1658 Inf  -0.001  0.9994
##  45 castlemart - 42 def1       -1.14e-01 0.1670 Inf  -0.682  0.7319
##  45 castlemart - 43 def1        1.17e-01 0.1647 Inf   0.713  0.7193
##  45 castlemart - 44 def1       -3.98e-01 0.1668 Inf  -2.387  0.1200
##  45 castlemart - 45 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  45 castlemart - 46 def1       -2.03e-01 0.1678 Inf  -1.212  0.4950
##  45 castlemart - 47 def1        2.76e-01 0.1611 Inf   1.710  0.2981
##  45 castlemart - 48 def1       -4.42e-01 0.1654 Inf  -2.673  0.0719
##  45 castlemart - 49 def1       -1.41e-01 0.1660 Inf  -0.852  0.6572
##  45 castlemart - 50 def1       -1.55e-02 0.1638 Inf  -0.094  0.9701
##  45 castlemart - 51 def1       -3.68e-01 0.1687 Inf  -2.184  0.1567
##  45 castlemart - 52 def1       -2.16e-01 0.1675 Inf  -1.287  0.4643
##  45 castlemart - 53 def1       -6.63e-02 0.1639 Inf  -0.404  0.8524
##  45 castlemart - 54 def1       -1.90e-01 0.1590 Inf  -1.195  0.5026
##  45 castlemart - 55 def1       -5.76e-02 0.1637 Inf  -0.352  0.8750
##  45 castlemart - 56 def1       -1.12e-01 0.1719 Inf  -0.653  0.7444
##  45 castlemart - 57 def1       -1.82e-01 0.1658 Inf  -1.100  0.5430
##  45 castlemart - 58 def1       -2.39e-01 0.1638 Inf  -1.457  0.3927
##  45 castlemart - 59 def1        1.12e-01 0.1716 Inf   0.650  0.7458
##  45 castlemart - 60 def1        5.54e-03 0.1629 Inf   0.034  0.9876
##  45 castlemart - 61 def1       -2.58e-01 0.1666 Inf  -1.548  0.3583
##  46 castlemart - 47 castlemart  4.79e-01 0.1635 Inf   2.930  0.0445
##  46 castlemart - 48 castlemart -2.39e-01 0.1643 Inf  -1.453  0.3928
##  46 castlemart - 49 castlemart  6.20e-02 0.1655 Inf   0.374  0.8656
##  46 castlemart - 50 castlemart  1.88e-01 0.1668 Inf   1.127  0.5328
##  46 castlemart - 51 castlemart -1.65e-01 0.1683 Inf  -0.980  0.5973
##  46 castlemart - 52 castlemart -1.22e-02 0.1675 Inf  -0.073  0.9766
##  46 castlemart - 53 castlemart  1.37e-01 0.1647 Inf   0.832  0.6655
##  46 castlemart - 54 castlemart  1.33e-02 0.1634 Inf   0.082  0.9744
##  46 castlemart - 55 castlemart  1.46e-01 0.1607 Inf   0.907  0.6319
##  46 castlemart - 56 castlemart  9.11e-02 0.1718 Inf   0.530  0.8013
##  46 castlemart - 57 castlemart  2.10e-02 0.1665 Inf   0.126  0.9592
##  46 castlemart - 58 castlemart -3.52e-02 0.1650 Inf  -0.213  0.9288
##  46 castlemart - 59 castlemart  3.15e-01 0.1694 Inf   1.859  0.2456
##  46 castlemart - 60 castlemart  2.09e-01 0.1660 Inf   1.259  0.4773
##  46 castlemart - 61 castlemart -5.46e-02 0.1629 Inf  -0.335  0.8814
##  46 castlemart - 1 def1         3.65e-01 0.1600 Inf   2.281  0.1338
##  46 castlemart - 2 def1         1.23e-01 0.1638 Inf   0.750  0.7006
##  46 castlemart - 3 def1         1.02e-01 0.1653 Inf   0.618  0.7619
##  46 castlemart - 4 def1        -1.73e-02 0.1693 Inf  -0.102  0.9666
##  46 castlemart - 5 def1        -1.13e-01 0.1680 Inf  -0.672  0.7369
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##  46 castlemart - 6 def1         5.88e-02 0.1680 Inf   0.350  0.8755
##  46 castlemart - 7 def1         5.14e-02 0.1691 Inf   0.304  0.8922
##  46 castlemart - 8 def1         3.58e-01 0.1667 Inf   2.147  0.1645
##  46 castlemart - 9 def1        -1.20e-01 0.1684 Inf  -0.714  0.7189
##  46 castlemart - 10 def1        6.44e-02 0.1750 Inf   0.368  0.8693
##  46 castlemart - 11 def1       -7.67e-02 0.1628 Inf  -0.471  0.8276
##  46 castlemart - 12 def1        5.69e-03 0.1631 Inf   0.035  0.9871
##  46 castlemart - 13 def1        8.65e-02 0.1680 Inf   0.515  0.8066
##  46 castlemart - 14 def1       -2.62e-01 0.1671 Inf  -1.567  0.3525
##  46 castlemart - 15 def1        1.77e-01 0.1657 Inf   1.069  0.5566
##  46 castlemart - 16 def1        2.21e-01 0.1611 Inf   1.372  0.4269
##  46 castlemart - 17 def1        1.24e-01 0.1668 Inf   0.743  0.7049
##  46 castlemart - 18 def1        1.47e-01 0.1706 Inf   0.862  0.6530
##  46 castlemart - 19 def1        7.19e-01 0.1893 Inf   3.799  0.0062
##  46 castlemart - 20 def1        2.00e-01 0.1698 Inf   1.176  0.5120
##  46 castlemart - 22 def1       -2.40e-02 0.1666 Inf  -0.144  0.9536
##  46 castlemart - 23 def1        4.21e-01 0.1823 Inf   2.307  0.1286
##  46 castlemart - 24 def1        6.04e-02 0.1715 Inf   0.352  0.8750
##  46 castlemart - 25 def1        1.59e-01 0.1717 Inf   0.928  0.6210
##  46 castlemart - 26 def1        5.59e-02 0.1683 Inf   0.332  0.8816
##  46 castlemart - 27 def1       -5.78e-02 0.1718 Inf  -0.337  0.8805
##  46 castlemart - 28 def1        4.51e-02 0.1693 Inf   0.266  0.9070
##  46 castlemart - 29 def1        2.40e-01 0.1675 Inf   1.432  0.3991
##  46 castlemart - 30 def1        2.13e-01 0.1693 Inf   1.260  0.4768
##  46 castlemart - 31 def1       -1.23e-01 0.1606 Inf  -0.763  0.6973
##  46 castlemart - 32 def1        4.64e-01 0.1717 Inf   2.701  0.0680
##  46 castlemart - 33 def1        3.82e-01 0.1585 Inf   2.412  0.1159
##  46 castlemart - 34 def1       -9.28e-02 0.1650 Inf  -0.562  0.7868
##  46 castlemart - 35 def1        1.56e-01 0.1674 Inf   0.929  0.6209
##  46 castlemart - 36 def1       -1.01e-01 0.1677 Inf  -0.602  0.7685
##  46 castlemart - 37 def1        2.80e-01 0.1742 Inf   1.605  0.3363
##  46 castlemart - 38 def1        1.89e-01 0.1678 Inf   1.125  0.5334
##  46 castlemart - 39 def1        1.39e-01 0.1841 Inf   0.757  0.6995
##  46 castlemart - 41 def1        1.36e-01 0.1669 Inf   0.817  0.6730
##  46 castlemart - 42 def1        2.26e-02 0.1667 Inf   0.135  0.9561
##  46 castlemart - 43 def1        2.54e-01 0.1662 Inf   1.528  0.3658
##  46 castlemart - 44 def1       -2.62e-01 0.1694 Inf  -1.544  0.3596
##  46 castlemart - 45 def1        6.96e-02 0.1660 Inf   0.419  0.8478
##  46 castlemart - 46 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  46 castlemart - 47 def1        4.12e-01 0.1652 Inf   2.494  0.1006
##  46 castlemart - 48 def1       -3.06e-01 0.1661 Inf  -1.840  0.2525
##  46 castlemart - 49 def1       -4.92e-03 0.1675 Inf  -0.029  0.9896
##  46 castlemart - 50 def1        1.21e-01 0.1683 Inf   0.719  0.7166
##  46 castlemart - 51 def1       -2.32e-01 0.1698 Inf  -1.365  0.4301
##  46 castlemart - 52 def1       -7.91e-02 0.1693 Inf  -0.467  0.8276
##  46 castlemart - 53 def1        7.02e-02 0.1669 Inf   0.421  0.8468
##  46 castlemart - 54 def1       -5.35e-02 0.1655 Inf  -0.324  0.8848
##  46 castlemart - 55 def1        7.89e-02 0.1627 Inf   0.485  0.8234
##  46 castlemart - 56 def1        2.42e-02 0.1738 Inf   0.139  0.9554
##  46 castlemart - 57 def1       -4.59e-02 0.1684 Inf  -0.273  0.9051
##  46 castlemart - 58 def1       -1.02e-01 0.1670 Inf  -0.611  0.7647
##  46 castlemart - 59 def1        2.48e-01 0.1712 Inf   1.449  0.3929
##  46 castlemart - 60 def1        1.42e-01 0.1676 Inf   0.847  0.6582
##  46 castlemart - 61 def1       -1.21e-01 0.1648 Inf  -0.737  0.7068
##  47 castlemart - 48 castlemart -7.18e-01 0.1615 Inf  -4.442  0.0011
##  47 castlemart - 49 castlemart -4.17e-01 0.1603 Inf  -2.601  0.0833
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##  47 castlemart - 50 castlemart -2.91e-01 0.1629 Inf  -1.787  0.2711
##  47 castlemart - 51 castlemart -6.44e-01 0.1660 Inf  -3.877  0.0051
##  47 castlemart - 52 castlemart -4.91e-01 0.1630 Inf  -3.012  0.0377
##  47 castlemart - 53 castlemart -3.42e-01 0.1624 Inf  -2.105  0.1765
##  47 castlemart - 54 castlemart -4.66e-01 0.1595 Inf  -2.918  0.0455
##  47 castlemart - 55 castlemart -3.33e-01 0.1566 Inf  -2.127  0.1700
##  47 castlemart - 56 castlemart -3.88e-01 0.1694 Inf  -2.290  0.1318
##  47 castlemart - 57 castlemart -4.58e-01 0.1637 Inf  -2.797  0.0579
##  47 castlemart - 58 castlemart -5.14e-01 0.1619 Inf  -3.174  0.0277
##  47 castlemart - 59 castlemart -1.64e-01 0.1685 Inf  -0.973  0.5999
##  47 castlemart - 60 castlemart -2.70e-01 0.1618 Inf  -1.669  0.3134
##  47 castlemart - 61 castlemart -5.33e-01 0.1637 Inf  -3.260  0.0236
##  47 castlemart - 1 def1        -1.14e-01 0.1595 Inf  -0.714  0.7189
##  47 castlemart - 2 def1        -3.56e-01 0.1609 Inf  -2.212  0.1506
##  47 castlemart - 3 def1        -3.77e-01 0.1642 Inf  -2.294  0.1309
##  47 castlemart - 4 def1        -4.96e-01 0.1659 Inf  -2.990  0.0392
##  47 castlemart - 5 def1        -5.92e-01 0.1642 Inf  -3.604  0.0110
##  47 castlemart - 6 def1        -4.20e-01 0.1646 Inf  -2.552  0.0908
##  47 castlemart - 7 def1        -4.28e-01 0.1653 Inf  -2.586  0.0856
##  47 castlemart - 8 def1        -1.21e-01 0.1677 Inf  -0.722  0.7155
##  47 castlemart - 9 def1        -5.99e-01 0.1669 Inf  -3.591  0.0113
##  47 castlemart - 10 def1       -4.15e-01 0.1723 Inf  -2.405  0.1170
##  47 castlemart - 11 def1       -5.56e-01 0.1660 Inf  -3.347  0.0187
##  47 castlemart - 12 def1       -4.73e-01 0.1606 Inf  -2.946  0.0429
##  47 castlemart - 13 def1       -3.92e-01 0.1658 Inf  -2.367  0.1237
##  47 castlemart - 14 def1       -7.41e-01 0.1612 Inf  -4.594  0.0008
##  47 castlemart - 15 def1       -3.02e-01 0.1660 Inf  -1.818  0.2599
##  47 castlemart - 16 def1       -2.58e-01 0.1584 Inf  -1.628  0.3286
##  47 castlemart - 17 def1       -3.55e-01 0.1643 Inf  -2.162  0.1607
##  47 castlemart - 18 def1       -3.32e-01 0.1676 Inf  -1.980  0.2106
##  47 castlemart - 19 def1        2.40e-01 0.1876 Inf   1.280  0.4676
##  47 castlemart - 20 def1       -2.79e-01 0.1666 Inf  -1.676  0.3112
##  47 castlemart - 22 def1       -5.03e-01 0.1632 Inf  -3.081  0.0330
##  47 castlemart - 23 def1       -5.84e-02 0.1804 Inf  -0.324  0.8848
##  47 castlemart - 24 def1       -4.19e-01 0.1687 Inf  -2.481  0.1030
##  47 castlemart - 25 def1       -3.20e-01 0.1692 Inf  -1.889  0.2368
##  47 castlemart - 26 def1       -4.23e-01 0.1649 Inf  -2.566  0.0889
##  47 castlemart - 27 def1       -5.37e-01 0.1671 Inf  -3.213  0.0260
##  47 castlemart - 28 def1       -4.34e-01 0.1666 Inf  -2.604  0.0828
##  47 castlemart - 29 def1       -2.39e-01 0.1641 Inf  -1.457  0.3927
##  47 castlemart - 30 def1       -2.66e-01 0.1661 Inf  -1.599  0.3384
##  47 castlemart - 31 def1       -6.01e-01 0.1547 Inf  -3.888  0.0050
##  47 castlemart - 32 def1       -1.52e-02 0.1695 Inf  -0.090  0.9732
##  47 castlemart - 33 def1       -9.68e-02 0.1638 Inf  -0.591  0.7727
##  47 castlemart - 34 def1       -5.72e-01 0.1626 Inf  -3.516  0.0131
##  47 castlemart - 35 def1       -3.23e-01 0.1682 Inf  -1.922  0.2276
##  47 castlemart - 36 def1       -5.80e-01 0.1668 Inf  -3.477  0.0143
##  47 castlemart - 37 def1       -1.99e-01 0.1723 Inf  -1.157  0.5199
##  47 castlemart - 38 def1       -2.90e-01 0.1658 Inf  -1.750  0.2843
##  47 castlemart - 39 def1       -3.40e-01 0.1805 Inf  -1.881  0.2389
##  47 castlemart - 41 def1       -3.43e-01 0.1646 Inf  -2.082  0.1826
##  47 castlemart - 42 def1       -4.56e-01 0.1670 Inf  -2.733  0.0647
##  47 castlemart - 43 def1       -2.25e-01 0.1644 Inf  -1.369  0.4284
##  47 castlemart - 44 def1       -7.41e-01 0.1639 Inf  -4.519  0.0010
##  47 castlemart - 45 def1       -4.09e-01 0.1609 Inf  -2.543  0.0923
##  47 castlemart - 46 def1       -5.46e-01 0.1668 Inf  -3.273  0.0227
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##  47 castlemart - 47 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  47 castlemart - 48 def1       -7.85e-01 0.1642 Inf  -4.778  0.0006
##  47 castlemart - 49 def1       -4.84e-01 0.1632 Inf  -2.964  0.0414
##  47 castlemart - 50 def1       -3.58e-01 0.1653 Inf  -2.166  0.1607
##  47 castlemart - 51 def1       -7.11e-01 0.1684 Inf  -4.221  0.0020
##  47 castlemart - 52 def1       -5.58e-01 0.1657 Inf  -3.367  0.0180
##  47 castlemart - 53 def1       -4.09e-01 0.1653 Inf  -2.472  0.1041
##  47 castlemart - 54 def1       -5.32e-01 0.1625 Inf  -3.278  0.0225
##  47 castlemart - 55 def1       -4.00e-01 0.1595 Inf  -2.508  0.0982
##  47 castlemart - 56 def1       -4.55e-01 0.1720 Inf  -2.643  0.0771
##  47 castlemart - 57 def1       -5.25e-01 0.1664 Inf  -3.154  0.0291
##  47 castlemart - 58 def1       -5.81e-01 0.1647 Inf  -3.527  0.0130
##  47 castlemart - 59 def1       -2.31e-01 0.1710 Inf  -1.350  0.4366
##  47 castlemart - 60 def1       -3.37e-01 0.1643 Inf  -2.051  0.1917
##  47 castlemart - 61 def1       -6.00e-01 0.1663 Inf  -3.611  0.0108
##  48 castlemart - 49 castlemart  3.01e-01 0.1625 Inf   1.851  0.2484
##  48 castlemart - 50 castlemart  4.27e-01 0.1611 Inf   2.648  0.0763
##  48 castlemart - 51 castlemart  7.38e-02 0.1670 Inf   0.442  0.8368
##  48 castlemart - 52 castlemart  2.27e-01 0.1648 Inf   1.375  0.4252
##  48 castlemart - 53 castlemart  3.76e-01 0.1623 Inf   2.316  0.1278
##  48 castlemart - 54 castlemart  2.52e-01 0.1606 Inf   1.570  0.3508
##  48 castlemart - 55 castlemart  3.84e-01 0.1552 Inf   2.478  0.1035
##  48 castlemart - 56 castlemart  3.30e-01 0.1697 Inf   1.944  0.2228
##  48 castlemart - 57 castlemart  2.60e-01 0.1612 Inf   1.611  0.3347
##  48 castlemart - 58 castlemart  2.04e-01 0.1640 Inf   1.241  0.4832
##  48 castlemart - 59 castlemart  5.54e-01 0.1651 Inf   3.354  0.0185
##  48 castlemart - 60 castlemart  4.48e-01 0.1633 Inf   2.741  0.0641
##  48 castlemart - 61 castlemart  1.84e-01 0.1633 Inf   1.128  0.5326
##  48 castlemart - 1 def1         6.04e-01 0.1579 Inf   3.824  0.0058
##  48 castlemart - 2 def1         3.62e-01 0.1602 Inf   2.257  0.1397
##  48 castlemart - 3 def1         3.41e-01 0.1622 Inf   2.102  0.1778
##  48 castlemart - 4 def1         2.21e-01 0.1688 Inf   1.312  0.4523
##  48 castlemart - 5 def1         1.26e-01 0.1659 Inf   0.759  0.6995
##  48 castlemart - 6 def1         2.98e-01 0.1640 Inf   1.815  0.2607
##  48 castlemart - 7 def1         2.90e-01 0.1673 Inf   1.734  0.2905
##  48 castlemart - 8 def1         5.97e-01 0.1629 Inf   3.663  0.0092
##  48 castlemart - 9 def1         1.18e-01 0.1680 Inf   0.705  0.7215
##  48 castlemart - 10 def1        3.03e-01 0.1723 Inf   1.759  0.2800
##  48 castlemart - 11 def1        1.62e-01 0.1659 Inf   0.976  0.5985
##  48 castlemart - 12 def1        2.44e-01 0.1640 Inf   1.490  0.3788
##  48 castlemart - 13 def1        3.25e-01 0.1659 Inf   1.960  0.2175
##  48 castlemart - 14 def1       -2.31e-02 0.1646 Inf  -0.141  0.9550
##  48 castlemart - 15 def1        4.16e-01 0.1658 Inf   2.508  0.0982
##  48 castlemart - 16 def1        4.60e-01 0.1613 Inf   2.850  0.0525
##  48 castlemart - 17 def1        3.63e-01 0.1609 Inf   2.254  0.1405
##  48 castlemart - 18 def1        3.86e-01 0.1678 Inf   2.299  0.1300
##  48 castlemart - 19 def1        9.58e-01 0.1857 Inf   5.159  0.0001
##  48 castlemart - 20 def1        4.38e-01 0.1688 Inf   2.598  0.0837
##  48 castlemart - 22 def1        2.15e-01 0.1643 Inf   1.307  0.4546
##  48 castlemart - 23 def1        6.59e-01 0.1802 Inf   3.658  0.0092
##  48 castlemart - 24 def1        2.99e-01 0.1699 Inf   1.761  0.2794
##  48 castlemart - 25 def1        3.98e-01 0.1701 Inf   2.340  0.1278
##  48 castlemart - 26 def1        2.95e-01 0.1665 Inf   1.770  0.2759
##  48 castlemart - 27 def1        1.81e-01 0.1700 Inf   1.064  0.5574
##  48 castlemart - 28 def1        2.84e-01 0.1690 Inf   1.679  0.3099
##  48 castlemart - 29 def1        4.79e-01 0.1640 Inf   2.918  0.0455
```

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##  48 castlemart - 30 def1        4.52e-01 0.1656 Inf   2.730  0.0649
##  48 castlemart - 31 def1        1.16e-01 0.1606 Inf   0.723  0.7148
##  48 castlemart - 32 def1        7.02e-01 0.1698 Inf   4.136  0.0026
##  48 castlemart - 33 def1        6.21e-01 0.1616 Inf   3.843  0.0056
##  48 castlemart - 34 def1        1.46e-01 0.1617 Inf   0.903  0.6332
##  48 castlemart - 35 def1        3.94e-01 0.1707 Inf   2.310  0.1286
##  48 castlemart - 36 def1        1.38e-01 0.1667 Inf   0.827  0.6677
##  48 castlemart - 37 def1        5.18e-01 0.1716 Inf   3.020  0.0371
##  48 castlemart - 38 def1        4.28e-01 0.1612 Inf   2.653  0.0755
##  48 castlemart - 39 def1        3.78e-01 0.1808 Inf   2.092  0.1798
##  48 castlemart - 41 def1        3.75e-01 0.1643 Inf   2.282  0.1338
##  48 castlemart - 42 def1        2.61e-01 0.1657 Inf   1.577  0.3480
##  48 castlemart - 43 def1        4.93e-01 0.1651 Inf   2.983  0.0396
##  48 castlemart - 44 def1       -2.29e-02 0.1689 Inf  -0.136  0.9561
##  48 castlemart - 45 def1        3.08e-01 0.1650 Inf   1.869  0.2430
##  48 castlemart - 46 def1        1.72e-01 0.1675 Inf   1.026  0.5741
##  48 castlemart - 47 def1        6.51e-01 0.1640 Inf   3.968  0.0041
##  48 castlemart - 48 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  48 castlemart - 49 def1        2.34e-01 0.1653 Inf   1.415  0.4080
##  48 castlemart - 50 def1        3.60e-01 0.1635 Inf   2.201  0.1532
##  48 castlemart - 51 def1        6.89e-03 0.1692 Inf   0.041  0.9851
##  48 castlemart - 52 def1        1.60e-01 0.1673 Inf   0.954  0.6108
##  48 castlemart - 53 def1        3.09e-01 0.1652 Inf   1.871  0.2423
##  48 castlemart - 54 def1        1.85e-01 0.1634 Inf   1.134  0.5314
##  48 castlemart - 55 def1        3.18e-01 0.1580 Inf   2.010  0.2022
##  48 castlemart - 56 def1        2.63e-01 0.1723 Inf   1.526  0.3659
##  48 castlemart - 57 def1        1.93e-01 0.1638 Inf   1.177  0.5116
##  48 castlemart - 58 def1        1.37e-01 0.1666 Inf   0.820  0.6710
##  48 castlemart - 59 def1        4.87e-01 0.1676 Inf   2.905  0.0462
##  48 castlemart - 60 def1        3.81e-01 0.1657 Inf   2.298  0.1300
##  48 castlemart - 61 def1        1.17e-01 0.1658 Inf   0.707  0.7205
##  49 castlemart - 50 castlemart  1.26e-01 0.1621 Inf   0.777  0.6894
##  49 castlemart - 51 castlemart -2.27e-01 0.1630 Inf  -1.392  0.4181
##  49 castlemart - 52 castlemart -7.41e-02 0.1628 Inf  -0.455  0.8302
##  49 castlemart - 53 castlemart  7.52e-02 0.1610 Inf   0.467  0.8276
##  49 castlemart - 54 castlemart -4.86e-02 0.1601 Inf  -0.304  0.8922
##  49 castlemart - 55 castlemart  8.38e-02 0.1590 Inf   0.527  0.8030
##  49 castlemart - 56 castlemart  2.91e-02 0.1691 Inf   0.172  0.9420
##  49 castlemart - 57 castlemart -4.10e-02 0.1615 Inf  -0.254  0.9117
##  49 castlemart - 58 castlemart -9.71e-02 0.1632 Inf  -0.595  0.7704
##  49 castlemart - 59 castlemart  2.53e-01 0.1686 Inf   1.500  0.3750
##  49 castlemart - 60 castlemart  1.47e-01 0.1593 Inf   0.922  0.6233
##  49 castlemart - 61 castlemart -1.17e-01 0.1619 Inf  -0.720  0.7165
##  49 castlemart - 1 def1         3.03e-01 0.1581 Inf   1.917  0.2290
##  49 castlemart - 2 def1         6.09e-02 0.1587 Inf   0.384  0.8615
##  49 castlemart - 3 def1         4.02e-02 0.1631 Inf   0.246  0.9146
##  49 castlemart - 4 def1        -7.93e-02 0.1682 Inf  -0.471  0.8276
##  49 castlemart - 5 def1        -1.75e-01 0.1610 Inf  -1.085  0.5484
##  49 castlemart - 6 def1        -3.14e-03 0.1637 Inf  -0.019  0.9939
##  49 castlemart - 7 def1        -1.06e-02 0.1615 Inf  -0.066  0.9784
##  49 castlemart - 8 def1         2.96e-01 0.1686 Inf   1.755  0.2818
##  49 castlemart - 9 def1        -1.82e-01 0.1686 Inf  -1.081  0.5495
##  49 castlemart - 10 def1        2.42e-03 0.1740 Inf   0.014  0.9952
##  49 castlemart - 11 def1       -1.39e-01 0.1659 Inf  -0.836  0.6632
##  49 castlemart - 12 def1       -5.63e-02 0.1602 Inf  -0.351  0.8750
##  49 castlemart - 13 def1        2.45e-02 0.1654 Inf   0.148  0.9526
```

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##  49 castlemart - 14 def1       -3.24e-01 0.1622 Inf  -1.996  0.2061
##  49 castlemart - 15 def1        1.15e-01 0.1647 Inf   0.699  0.7231
##  49 castlemart - 16 def1        1.59e-01 0.1582 Inf   1.005  0.5850
##  49 castlemart - 17 def1        6.19e-02 0.1629 Inf   0.380  0.8628
##  49 castlemart - 18 def1        8.50e-02 0.1691 Inf   0.503  0.8130
##  49 castlemart - 19 def1        6.57e-01 0.1874 Inf   3.506  0.0135
##  49 castlemart - 20 def1        1.38e-01 0.1675 Inf   0.822  0.6698
##  49 castlemart - 22 def1       -8.59e-02 0.1650 Inf  -0.521  0.8066
##  49 castlemart - 23 def1        3.59e-01 0.1802 Inf   1.990  0.2086
##  49 castlemart - 24 def1       -1.56e-03 0.1665 Inf  -0.009  0.9961
##  49 castlemart - 25 def1        9.74e-02 0.1681 Inf   0.580  0.7778
##  49 castlemart - 26 def1       -6.06e-03 0.1650 Inf  -0.037  0.9871
##  49 castlemart - 27 def1       -1.20e-01 0.1640 Inf  -0.731  0.7102
##  49 castlemart - 28 def1       -1.69e-02 0.1653 Inf  -0.102  0.9666
##  49 castlemart - 29 def1        1.78e-01 0.1624 Inf   1.095  0.5450
##  49 castlemart - 30 def1        1.51e-01 0.1673 Inf   0.905  0.6327
##  49 castlemart - 31 def1       -1.85e-01 0.1584 Inf  -1.165  0.5165
##  49 castlemart - 32 def1        4.02e-01 0.1679 Inf   2.392  0.1192
##  49 castlemart - 33 def1        3.20e-01 0.1640 Inf   1.953  0.2200
##  49 castlemart - 34 def1       -1.55e-01 0.1636 Inf  -0.946  0.6162
##  49 castlemart - 35 def1        9.36e-02 0.1690 Inf   0.554  0.7901
##  49 castlemart - 36 def1       -1.63e-01 0.1646 Inf  -0.989  0.5930
##  49 castlemart - 37 def1        2.18e-01 0.1709 Inf   1.273  0.4707
##  49 castlemart - 38 def1        1.27e-01 0.1655 Inf   0.766  0.6950
##  49 castlemart - 39 def1        7.74e-02 0.1801 Inf   0.430  0.8431
##  49 castlemart - 41 def1        7.43e-02 0.1655 Inf   0.449  0.8323
##  49 castlemart - 42 def1       -3.94e-02 0.1666 Inf  -0.236  0.9185
##  49 castlemart - 43 def1        1.92e-01 0.1648 Inf   1.165  0.5165
##  49 castlemart - 44 def1       -3.24e-01 0.1639 Inf  -1.975  0.2128
##  49 castlemart - 45 def1        7.63e-03 0.1651 Inf   0.046  0.9831
##  49 castlemart - 46 def1       -1.29e-01 0.1684 Inf  -0.765  0.6960
##  49 castlemart - 47 def1        3.50e-01 0.1626 Inf   2.153  0.1630
##  49 castlemart - 48 def1       -3.68e-01 0.1648 Inf  -2.231  0.1451
##  49 castlemart - 49 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  49 castlemart - 50 def1        5.91e-02 0.1641 Inf   0.360  0.8725
##  49 castlemart - 51 def1       -2.94e-01 0.1651 Inf  -1.780  0.2729
##  49 castlemart - 52 def1       -1.41e-01 0.1652 Inf  -0.854  0.6567
##  49 castlemart - 53 def1        8.26e-03 0.1636 Inf   0.051  0.9821
##  49 castlemart - 54 def1       -1.16e-01 0.1627 Inf  -0.710  0.7204
##  49 castlemart - 55 def1        1.69e-02 0.1615 Inf   0.105  0.9654
##  49 castlemart - 56 def1       -3.78e-02 0.1715 Inf  -0.220  0.9265
##  49 castlemart - 57 def1       -1.08e-01 0.1640 Inf  -0.658  0.7421
##  49 castlemart - 58 def1       -1.64e-01 0.1657 Inf  -0.990  0.5930
##  49 castlemart - 59 def1        1.86e-01 0.1708 Inf   1.089  0.5465
##  49 castlemart - 60 def1        8.01e-02 0.1615 Inf   0.496  0.8172
##  49 castlemart - 61 def1       -1.83e-01 0.1643 Inf  -1.117  0.5362
##  50 castlemart - 51 castlemart -3.53e-01 0.1670 Inf  -2.113  0.1743
##  50 castlemart - 52 castlemart -2.00e-01 0.1658 Inf  -1.207  0.4980
##  50 castlemart - 53 castlemart -5.08e-02 0.1631 Inf  -0.311  0.8894
##  50 castlemart - 54 castlemart -1.75e-01 0.1580 Inf  -1.105  0.5412
##  50 castlemart - 55 castlemart -4.22e-02 0.1615 Inf  -0.261  0.9085
##  50 castlemart - 56 castlemart -9.68e-02 0.1703 Inf  -0.568  0.7840
##  50 castlemart - 57 castlemart -1.67e-01 0.1616 Inf  -1.033  0.5729
##  50 castlemart - 58 castlemart -2.23e-01 0.1639 Inf  -1.361  0.4323
##  50 castlemart - 59 castlemart  1.27e-01 0.1682 Inf   0.755  0.6995
##  50 castlemart - 60 castlemart  2.10e-02 0.1633 Inf   0.129  0.9585
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##  50 castlemart - 61 castlemart -2.42e-01 0.1629 Inf  -1.489  0.3788
##  50 castlemart - 1 def1         1.77e-01 0.1635 Inf   1.083  0.5493
##  50 castlemart - 2 def1        -6.50e-02 0.1629 Inf  -0.399  0.8538
##  50 castlemart - 3 def1        -8.58e-02 0.1620 Inf  -0.530  0.8013
##  50 castlemart - 4 def1        -2.05e-01 0.1698 Inf  -1.209  0.4976
##  50 castlemart - 5 def1        -3.01e-01 0.1655 Inf  -1.817  0.2603
##  50 castlemart - 6 def1        -1.29e-01 0.1654 Inf  -0.780  0.6883
##  50 castlemart - 7 def1        -1.37e-01 0.1656 Inf  -0.825  0.6685
##  50 castlemart - 8 def1         1.70e-01 0.1700 Inf   1.000  0.5881
##  50 castlemart - 9 def1        -3.08e-01 0.1704 Inf  -1.809  0.2626
##  50 castlemart - 10 def1       -1.24e-01 0.1759 Inf  -0.702  0.7218
##  50 castlemart - 11 def1       -2.65e-01 0.1655 Inf  -1.599  0.3384
##  50 castlemart - 12 def1       -1.82e-01 0.1641 Inf  -1.111  0.5391
##  50 castlemart - 13 def1       -1.01e-01 0.1655 Inf  -0.613  0.7640
##  50 castlemart - 14 def1       -4.50e-01 0.1671 Inf  -2.692  0.0691
##  50 castlemart - 15 def1       -1.08e-02 0.1681 Inf  -0.064  0.9784
##  50 castlemart - 16 def1        3.31e-02 0.1606 Inf   0.206  0.9308
##  50 castlemart - 17 def1       -6.41e-02 0.1651 Inf  -0.388  0.8593
##  50 castlemart - 18 def1       -4.09e-02 0.1711 Inf  -0.239  0.9170
##  50 castlemart - 19 def1        5.31e-01 0.1886 Inf   2.816  0.0560
##  50 castlemart - 20 def1        1.18e-02 0.1698 Inf   0.069  0.9777
##  50 castlemart - 22 def1       -2.12e-01 0.1645 Inf  -1.288  0.4638
##  50 castlemart - 23 def1        2.33e-01 0.1770 Inf   1.314  0.4515
##  50 castlemart - 24 def1       -1.28e-01 0.1699 Inf  -0.751  0.7006
##  50 castlemart - 25 def1       -2.86e-02 0.1714 Inf  -0.167  0.9448
##  50 castlemart - 26 def1       -1.32e-01 0.1679 Inf  -0.786  0.6856
##  50 castlemart - 27 def1       -2.46e-01 0.1695 Inf  -1.450  0.3929
##  50 castlemart - 28 def1       -1.43e-01 0.1686 Inf  -0.847  0.6582
##  50 castlemart - 29 def1        5.19e-02 0.1664 Inf   0.312  0.8893
##  50 castlemart - 30 def1        2.54e-02 0.1692 Inf   0.150  0.9523
##  50 castlemart - 31 def1       -3.10e-01 0.1611 Inf  -1.927  0.2272
##  50 castlemart - 32 def1        2.76e-01 0.1710 Inf   1.613  0.3342
##  50 castlemart - 33 def1        1.94e-01 0.1624 Inf   1.196  0.5025
##  50 castlemart - 34 def1       -2.81e-01 0.1622 Inf  -1.731  0.2908
##  50 castlemart - 35 def1       -3.24e-02 0.1718 Inf  -0.189  0.9369
##  50 castlemart - 36 def1       -2.89e-01 0.1674 Inf  -1.725  0.2919
##  50 castlemart - 37 def1        9.16e-02 0.1747 Inf   0.524  0.8051
##  50 castlemart - 38 def1        9.27e-04 0.1630 Inf   0.006  0.9971
##  50 castlemart - 39 def1       -4.85e-02 0.1833 Inf  -0.265  0.9076
##  50 castlemart - 41 def1       -5.17e-02 0.1621 Inf  -0.319  0.8861
##  50 castlemart - 42 def1       -1.65e-01 0.1658 Inf  -0.997  0.5896
##  50 castlemart - 43 def1        6.60e-02 0.1679 Inf   0.393  0.8564
##  50 castlemart - 44 def1       -4.50e-01 0.1677 Inf  -2.680  0.0710
##  50 castlemart - 45 def1       -1.18e-01 0.1639 Inf  -0.722  0.7155
##  50 castlemart - 46 def1       -2.55e-01 0.1702 Inf  -1.498  0.3764
##  50 castlemart - 47 def1        2.24e-01 0.1656 Inf   1.354  0.4354
##  50 castlemart - 48 def1       -4.94e-01 0.1639 Inf  -3.010  0.0378
##  50 castlemart - 49 def1       -1.93e-01 0.1651 Inf  -1.168  0.5153
##  50 castlemart - 50 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  50 castlemart - 51 def1       -4.20e-01 0.1695 Inf  -2.477  0.1036
##  50 castlemart - 52 def1       -2.67e-01 0.1686 Inf  -1.584  0.3445
##  50 castlemart - 53 def1       -1.18e-01 0.1662 Inf  -0.708  0.7205
##  50 castlemart - 54 def1       -2.41e-01 0.1611 Inf  -1.499  0.3757
##  50 castlemart - 55 def1       -1.09e-01 0.1644 Inf  -0.663  0.7404
##  50 castlemart - 56 def1       -1.64e-01 0.1731 Inf  -0.946  0.6162
##  50 castlemart - 57 def1       -2.34e-01 0.1645 Inf  -1.422  0.4051
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##  50 castlemart - 58 def1       -2.90e-01 0.1668 Inf  -1.739  0.2883
##  50 castlemart - 59 def1        6.01e-02 0.1709 Inf   0.352  0.8750
##  50 castlemart - 60 def1       -4.59e-02 0.1659 Inf  -0.277  0.9035
##  50 castlemart - 61 def1       -3.09e-01 0.1656 Inf  -1.868  0.2432
##  51 castlemart - 52 castlemart  1.53e-01 0.1691 Inf   0.904  0.6327
##  51 castlemart - 53 castlemart  3.02e-01 0.1661 Inf   1.819  0.2599
##  51 castlemart - 54 castlemart  1.78e-01 0.1608 Inf   1.108  0.5391
##  51 castlemart - 55 castlemart  3.11e-01 0.1642 Inf   1.892  0.2366
##  51 castlemart - 56 castlemart  2.56e-01 0.1683 Inf   1.521  0.3679
##  51 castlemart - 57 castlemart  1.86e-01 0.1677 Inf   1.109  0.5391
##  51 castlemart - 58 castlemart  1.30e-01 0.1663 Inf   0.780  0.6883
##  51 castlemart - 59 castlemart  4.80e-01 0.1723 Inf   2.786  0.0594
##  51 castlemart - 60 castlemart  3.74e-01 0.1665 Inf   2.245  0.1416
##  51 castlemart - 61 castlemart  1.10e-01 0.1654 Inf   0.667  0.7388
##  51 castlemart - 1 def1         5.30e-01 0.1620 Inf   3.271  0.0228
##  51 castlemart - 2 def1         2.88e-01 0.1645 Inf   1.749  0.2843
##  51 castlemart - 3 def1         2.67e-01 0.1660 Inf   1.609  0.3347
##  51 castlemart - 4 def1         1.48e-01 0.1706 Inf   0.866  0.6523
##  51 castlemart - 5 def1         5.21e-02 0.1692 Inf   0.308  0.8898
##  51 castlemart - 6 def1         2.24e-01 0.1704 Inf   1.313  0.4519
##  51 castlemart - 7 def1         2.16e-01 0.1685 Inf   1.283  0.4666
##  51 castlemart - 8 def1         5.23e-01 0.1722 Inf   3.037  0.0356
##  51 castlemart - 9 def1         4.47e-02 0.1717 Inf   0.260  0.9089
##  51 castlemart - 10 def1        2.29e-01 0.1789 Inf   1.282  0.4667
##  51 castlemart - 11 def1        8.82e-02 0.1695 Inf   0.521  0.8066
##  51 castlemart - 12 def1        1.71e-01 0.1660 Inf   1.028  0.5741
##  51 castlemart - 13 def1        2.51e-01 0.1684 Inf   1.493  0.3783
##  51 castlemart - 14 def1       -9.69e-02 0.1693 Inf  -0.573  0.7819
##  51 castlemart - 15 def1        3.42e-01 0.1707 Inf   2.004  0.2037
##  51 castlemart - 16 def1        3.86e-01 0.1620 Inf   2.382  0.1209
##  51 castlemart - 17 def1        2.89e-01 0.1693 Inf   1.706  0.2993
##  51 castlemart - 18 def1        3.12e-01 0.1733 Inf   1.800  0.2657
##  51 castlemart - 19 def1        8.84e-01 0.1871 Inf   4.725  0.0006
##  51 castlemart - 20 def1        3.65e-01 0.1708 Inf   2.135  0.1679
##  51 castlemart - 22 def1        1.41e-01 0.1685 Inf   0.836  0.6630
##  51 castlemart - 23 def1        5.85e-01 0.1844 Inf   3.176  0.0277
##  51 castlemart - 24 def1        2.25e-01 0.1733 Inf   1.300  0.4577
##  51 castlemart - 25 def1        3.24e-01 0.1722 Inf   1.883  0.2381
##  51 castlemart - 26 def1        2.21e-01 0.1705 Inf   1.296  0.4605
##  51 castlemart - 27 def1        1.07e-01 0.1687 Inf   0.635  0.7542
##  51 castlemart - 28 def1        2.10e-01 0.1714 Inf   1.225  0.4901
##  51 castlemart - 29 def1        4.05e-01 0.1602 Inf   2.526  0.0952
##  51 castlemart - 30 def1        3.78e-01 0.1703 Inf   2.222  0.1480
##  51 castlemart - 31 def1        4.24e-02 0.1636 Inf   0.259  0.9097
##  51 castlemart - 32 def1        6.29e-01 0.1714 Inf   3.669  0.0091
##  51 castlemart - 33 def1        5.47e-01 0.1695 Inf   3.227  0.0256
##  51 castlemart - 34 def1        7.22e-02 0.1667 Inf   0.433  0.8423
##  51 castlemart - 35 def1        3.20e-01 0.1652 Inf   1.940  0.2238
##  51 castlemart - 36 def1        6.40e-02 0.1698 Inf   0.377  0.8645
##  51 castlemart - 37 def1        4.44e-01 0.1769 Inf   2.513  0.0976
##  51 castlemart - 38 def1        3.54e-01 0.1698 Inf   2.084  0.1823
##  51 castlemart - 39 def1        3.04e-01 0.1848 Inf   1.647  0.3220
##  51 castlemart - 41 def1        3.01e-01 0.1692 Inf   1.780  0.2727
##  51 castlemart - 42 def1        1.88e-01 0.1691 Inf   1.109  0.5391
##  51 castlemart - 43 def1        4.19e-01 0.1693 Inf   2.474  0.1041
##  51 castlemart - 44 def1       -9.67e-02 0.1679 Inf  -0.576  0.7805
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##  51 castlemart - 45 def1        2.35e-01 0.1688 Inf   1.389  0.4191
##  51 castlemart - 46 def1        9.81e-02 0.1717 Inf   0.571  0.7828
##  51 castlemart - 47 def1        5.77e-01 0.1687 Inf   3.420  0.0160
##  51 castlemart - 48 def1       -1.41e-01 0.1698 Inf  -0.829  0.6664
##  51 castlemart - 49 def1        1.60e-01 0.1661 Inf   0.964  0.6052
##  51 castlemart - 50 def1        2.86e-01 0.1695 Inf   1.687  0.3068
##  51 castlemart - 51 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  51 castlemart - 52 def1        8.59e-02 0.1718 Inf   0.500  0.8146
##  51 castlemart - 53 def1        2.35e-01 0.1691 Inf   1.390  0.4189
##  51 castlemart - 54 def1        1.11e-01 0.1639 Inf   0.680  0.7326
##  51 castlemart - 55 def1        2.44e-01 0.1672 Inf   1.459  0.3923
##  51 castlemart - 56 def1        1.89e-01 0.1712 Inf   1.105  0.5412
##  51 castlemart - 57 def1        1.19e-01 0.1705 Inf   0.698  0.7237
##  51 castlemart - 58 def1        6.29e-02 0.1692 Inf   0.372  0.8677
##  51 castlemart - 59 def1        4.13e-01 0.1749 Inf   2.361  0.1248
##  51 castlemart - 60 def1        3.07e-01 0.1691 Inf   1.815  0.2607
##  51 castlemart - 61 def1        4.35e-02 0.1682 Inf   0.259  0.9097
##  52 castlemart - 53 castlemart  1.49e-01 0.1599 Inf   0.934  0.6201
##  52 castlemart - 54 castlemart  2.55e-02 0.1620 Inf   0.157  0.9496
##  52 castlemart - 55 castlemart  1.58e-01 0.1603 Inf   0.985  0.5949
##  52 castlemart - 56 castlemart  1.03e-01 0.1712 Inf   0.603  0.7681
##  52 castlemart - 57 castlemart  3.31e-02 0.1596 Inf   0.208  0.9301
##  52 castlemart - 58 castlemart -2.30e-02 0.1587 Inf  -0.145  0.9535
##  52 castlemart - 59 castlemart  3.27e-01 0.1685 Inf   1.941  0.2237
##  52 castlemart - 60 castlemart  2.21e-01 0.1616 Inf   1.368  0.4284
##  52 castlemart - 61 castlemart -4.24e-02 0.1625 Inf  -0.261  0.9085
##  52 castlemart - 1 def1         3.77e-01 0.1635 Inf   2.306  0.1286
##  52 castlemart - 2 def1         1.35e-01 0.1618 Inf   0.835  0.6643
##  52 castlemart - 3 def1         1.14e-01 0.1671 Inf   0.684  0.7306
##  52 castlemart - 4 def1        -5.13e-03 0.1696 Inf  -0.030  0.9895
##  52 castlemart - 5 def1        -1.01e-01 0.1641 Inf  -0.613  0.7640
##  52 castlemart - 6 def1         7.10e-02 0.1584 Inf   0.448  0.8327
##  52 castlemart - 7 def1         6.35e-02 0.1673 Inf   0.380  0.8628
##  52 castlemart - 8 def1         3.70e-01 0.1708 Inf   2.166  0.1607
##  52 castlemart - 9 def1        -1.08e-01 0.1679 Inf  -0.644  0.7495
##  52 castlemart - 10 def1        7.66e-02 0.1682 Inf   0.455  0.8302
##  52 castlemart - 11 def1       -6.46e-02 0.1669 Inf  -0.387  0.8603
##  52 castlemart - 12 def1        1.79e-02 0.1659 Inf   0.108  0.9646
##  52 castlemart - 13 def1        9.86e-02 0.1661 Inf   0.594  0.7714
##  52 castlemart - 14 def1       -2.50e-01 0.1650 Inf  -1.514  0.3704
##  52 castlemart - 15 def1        1.89e-01 0.1613 Inf   1.174  0.5128
##  52 castlemart - 16 def1        2.33e-01 0.1620 Inf   1.439  0.3967
##  52 castlemart - 17 def1        1.36e-01 0.1640 Inf   0.829  0.6661
##  52 castlemart - 18 def1        1.59e-01 0.1692 Inf   0.941  0.6183
##  52 castlemart - 19 def1        7.31e-01 0.1894 Inf   3.862  0.0053
##  52 castlemart - 20 def1        2.12e-01 0.1707 Inf   1.241  0.4832
##  52 castlemart - 22 def1       -1.18e-02 0.1653 Inf  -0.071  0.9766
##  52 castlemart - 23 def1        4.33e-01 0.1802 Inf   2.401  0.1181
##  52 castlemart - 24 def1        7.26e-02 0.1682 Inf   0.432  0.8429
##  52 castlemart - 25 def1        1.72e-01 0.1719 Inf   0.998  0.5893
##  52 castlemart - 26 def1        6.81e-02 0.1709 Inf   0.398  0.8541
##  52 castlemart - 27 def1       -4.57e-02 0.1687 Inf  -0.271  0.9056
##  52 castlemart - 28 def1        5.73e-02 0.1668 Inf   0.343  0.8775
##  52 castlemart - 29 def1        2.52e-01 0.1684 Inf   1.496  0.3771
##  52 castlemart - 30 def1        2.26e-01 0.1696 Inf   1.329  0.4454
##  52 castlemart - 31 def1       -1.10e-01 0.1622 Inf  -0.680  0.7324
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##  52 castlemart - 32 def1        4.76e-01 0.1715 Inf   2.775  0.0607
##  52 castlemart - 33 def1        3.94e-01 0.1655 Inf   2.383  0.1207
##  52 castlemart - 34 def1       -8.06e-02 0.1654 Inf  -0.487  0.8223
##  52 castlemart - 35 def1        1.68e-01 0.1728 Inf   0.970  0.6015
##  52 castlemart - 36 def1       -8.88e-02 0.1668 Inf  -0.532  0.8013
##  52 castlemart - 37 def1        2.92e-01 0.1732 Inf   1.684  0.3083
##  52 castlemart - 38 def1        2.01e-01 0.1675 Inf   1.200  0.5012
##  52 castlemart - 39 def1        1.52e-01 0.1837 Inf   0.825  0.6685
##  52 castlemart - 41 def1        1.48e-01 0.1659 Inf   0.895  0.6365
##  52 castlemart - 42 def1        3.47e-02 0.1687 Inf   0.206  0.9308
##  52 castlemart - 43 def1        2.66e-01 0.1683 Inf   1.581  0.3453
##  52 castlemart - 44 def1       -2.49e-01 0.1706 Inf  -1.462  0.3910
##  52 castlemart - 45 def1        8.18e-02 0.1670 Inf   0.490  0.8208
##  52 castlemart - 46 def1       -5.47e-02 0.1706 Inf  -0.321  0.8852
##  52 castlemart - 47 def1        4.24e-01 0.1654 Inf   2.565  0.0890
##  52 castlemart - 48 def1       -2.93e-01 0.1672 Inf  -1.755  0.2818
##  52 castlemart - 49 def1        7.24e-03 0.1655 Inf   0.044  0.9836
##  52 castlemart - 50 def1        1.33e-01 0.1680 Inf   0.793  0.6822
##  52 castlemart - 51 def1       -2.20e-01 0.1712 Inf  -1.283  0.4667
##  52 castlemart - 52 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  52 castlemart - 53 def1        8.24e-02 0.1627 Inf   0.506  0.8104
##  52 castlemart - 54 def1       -4.14e-02 0.1647 Inf  -0.251  0.9130
##  52 castlemart - 55 def1        9.10e-02 0.1629 Inf   0.559  0.7891
##  52 castlemart - 56 def1        3.64e-02 0.1737 Inf   0.209  0.9301
##  52 castlemart - 57 def1       -3.37e-02 0.1622 Inf  -0.208  0.9301
##  52 castlemart - 58 def1       -8.99e-02 0.1614 Inf  -0.557  0.7896
##  52 castlemart - 59 def1        2.60e-01 0.1709 Inf   1.522  0.3674
##  52 castlemart - 60 def1        1.54e-01 0.1639 Inf   0.941  0.6183
##  52 castlemart - 61 def1       -1.09e-01 0.1650 Inf  -0.662  0.7408
##  53 castlemart - 54 castlemart -1.24e-01 0.1587 Inf  -0.780  0.6883
##  53 castlemart - 55 castlemart  8.63e-03 0.1600 Inf   0.054  0.9814
##  53 castlemart - 56 castlemart -4.60e-02 0.1687 Inf  -0.273  0.9051
##  53 castlemart - 57 castlemart -1.16e-01 0.1623 Inf  -0.716  0.7187
##  53 castlemart - 58 castlemart -1.72e-01 0.1575 Inf  -1.094  0.5452
##  53 castlemart - 59 castlemart  1.78e-01 0.1646 Inf   1.081  0.5495
##  53 castlemart - 60 castlemart  7.18e-02 0.1595 Inf   0.450  0.8316
##  53 castlemart - 61 castlemart -1.92e-01 0.1634 Inf  -1.173  0.5128
##  53 castlemart - 1 def1         2.28e-01 0.1606 Inf   1.418  0.4066
##  53 castlemart - 2 def1        -1.42e-02 0.1604 Inf  -0.089  0.9734
##  53 castlemart - 3 def1        -3.50e-02 0.1648 Inf  -0.212  0.9288
##  53 castlemart - 4 def1        -1.54e-01 0.1671 Inf  -0.924  0.6229
##  53 castlemart - 5 def1        -2.50e-01 0.1638 Inf  -1.526  0.3659
##  53 castlemart - 6 def1        -7.83e-02 0.1632 Inf  -0.480  0.8236
##  53 castlemart - 7 def1        -8.57e-02 0.1647 Inf  -0.521  0.8066
##  53 castlemart - 8 def1         2.21e-01 0.1684 Inf   1.311  0.4524
##  53 castlemart - 9 def1        -2.57e-01 0.1664 Inf  -1.547  0.3588
##  53 castlemart - 10 def1       -7.27e-02 0.1699 Inf  -0.428  0.8436
##  53 castlemart - 11 def1       -2.14e-01 0.1657 Inf  -1.291  0.4626
##  53 castlemart - 12 def1       -1.31e-01 0.1628 Inf  -0.807  0.6760
##  53 castlemart - 13 def1       -5.07e-02 0.1621 Inf  -0.312  0.8891
##  53 castlemart - 14 def1       -3.99e-01 0.1630 Inf  -2.448  0.1093
##  53 castlemart - 15 def1        4.00e-02 0.1609 Inf   0.249  0.9136
##  53 castlemart - 16 def1        8.39e-02 0.1591 Inf   0.527  0.8030
##  53 castlemart - 17 def1       -1.33e-02 0.1635 Inf  -0.081  0.9745
##  53 castlemart - 18 def1        9.89e-03 0.1651 Inf   0.060  0.9801
##  53 castlemart - 19 def1        5.82e-01 0.1851 Inf   3.145  0.0293
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##  53 castlemart - 20 def1        6.26e-02 0.1691 Inf   0.370  0.8685
##  53 castlemart - 22 def1       -1.61e-01 0.1648 Inf  -0.977  0.5978
##  53 castlemart - 23 def1        2.83e-01 0.1788 Inf   1.585  0.3438
##  53 castlemart - 24 def1       -7.67e-02 0.1682 Inf  -0.456  0.8302
##  53 castlemart - 25 def1        2.22e-02 0.1689 Inf   0.132  0.9575
##  53 castlemart - 26 def1       -8.12e-02 0.1680 Inf  -0.483  0.8236
##  53 castlemart - 27 def1       -1.95e-01 0.1677 Inf  -1.163  0.5174
##  53 castlemart - 28 def1       -9.20e-02 0.1667 Inf  -0.552  0.7908
##  53 castlemart - 29 def1        1.03e-01 0.1648 Inf   0.623  0.7605
##  53 castlemart - 30 def1        7.62e-02 0.1652 Inf   0.461  0.8291
##  53 castlemart - 31 def1       -2.60e-01 0.1581 Inf  -1.643  0.3233
##  53 castlemart - 32 def1        3.27e-01 0.1692 Inf   1.930  0.2261
##  53 castlemart - 33 def1        2.45e-01 0.1645 Inf   1.489  0.3788
##  53 castlemart - 34 def1       -2.30e-01 0.1633 Inf  -1.408  0.4104
##  53 castlemart - 35 def1        1.84e-02 0.1702 Inf   0.108  0.9644
##  53 castlemart - 36 def1       -2.38e-01 0.1640 Inf  -1.451  0.3929
##  53 castlemart - 37 def1        1.42e-01 0.1717 Inf   0.829  0.6661
##  53 castlemart - 38 def1        5.17e-02 0.1635 Inf   0.316  0.8870
##  53 castlemart - 39 def1        2.27e-03 0.1814 Inf   0.013  0.9956
##  53 castlemart - 41 def1       -8.53e-04 0.1647 Inf  -0.005  0.9973
##  53 castlemart - 42 def1       -1.15e-01 0.1652 Inf  -0.693  0.7259
##  53 castlemart - 43 def1        1.17e-01 0.1617 Inf   0.722  0.7155
##  53 castlemart - 44 def1       -3.99e-01 0.1651 Inf  -2.416  0.1147
##  53 castlemart - 45 def1       -6.75e-02 0.1629 Inf  -0.415  0.8495
##  53 castlemart - 46 def1       -2.04e-01 0.1676 Inf  -1.217  0.4930
##  53 castlemart - 47 def1        2.75e-01 0.1645 Inf   1.671  0.3124
##  53 castlemart - 48 def1       -4.43e-01 0.1646 Inf  -2.691  0.0693
##  53 castlemart - 49 def1       -1.42e-01 0.1635 Inf  -0.869  0.6505
##  53 castlemart - 50 def1       -1.61e-02 0.1651 Inf  -0.097  0.9685
##  53 castlemart - 51 def1       -3.69e-01 0.1680 Inf  -2.196  0.1540
##  53 castlemart - 52 def1       -2.16e-01 0.1622 Inf  -1.333  0.4448
##  53 castlemart - 53 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  53 castlemart - 54 def1       -1.91e-01 0.1612 Inf  -1.183  0.5091
##  53 castlemart - 55 def1       -5.83e-02 0.1624 Inf  -0.359  0.8735
##  53 castlemart - 56 def1       -1.13e-01 0.1710 Inf  -0.660  0.7410
##  53 castlemart - 57 def1       -1.83e-01 0.1646 Inf  -1.112  0.5389
##  53 castlemart - 58 def1       -2.39e-01 0.1600 Inf  -1.495  0.3774
##  53 castlemart - 59 def1        1.11e-01 0.1668 Inf   0.665  0.7396
##  53 castlemart - 60 def1        4.90e-03 0.1616 Inf   0.030  0.9895
##  53 castlemart - 61 def1       -2.59e-01 0.1656 Inf  -1.562  0.3537
##  54 castlemart - 55 castlemart  1.32e-01 0.1580 Inf   0.838  0.6628
##  54 castlemart - 56 castlemart  7.78e-02 0.1618 Inf   0.480  0.8236
##  54 castlemart - 57 castlemart  7.63e-03 0.1596 Inf   0.048  0.9821
##  54 castlemart - 58 castlemart -4.85e-02 0.1573 Inf  -0.308  0.8898
##  54 castlemart - 59 castlemart  3.02e-01 0.1668 Inf   1.808  0.2628
##  54 castlemart - 60 castlemart  1.96e-01 0.1577 Inf   1.240  0.4832
##  54 castlemart - 61 castlemart -6.79e-02 0.1600 Inf  -0.425  0.8458
##  54 castlemart - 1 def1         3.52e-01 0.1590 Inf   2.212  0.1506
##  54 castlemart - 2 def1         1.10e-01 0.1588 Inf   0.690  0.7279
##  54 castlemart - 3 def1         8.88e-02 0.1590 Inf   0.558  0.7891
##  54 castlemart - 4 def1        -3.06e-02 0.1635 Inf  -0.187  0.9369
##  54 castlemart - 5 def1        -1.26e-01 0.1601 Inf  -0.788  0.6847
##  54 castlemart - 6 def1         4.55e-02 0.1630 Inf   0.279  0.9021
##  54 castlemart - 7 def1         3.80e-02 0.1621 Inf   0.235  0.9196
##  54 castlemart - 8 def1         3.45e-01 0.1645 Inf   2.094  0.1792
##  54 castlemart - 9 def1        -1.34e-01 0.1629 Inf  -0.820  0.6710
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##  54 castlemart - 10 def1        5.10e-02 0.1720 Inf   0.297  0.8955
##  54 castlemart - 11 def1       -9.01e-02 0.1611 Inf  -0.559  0.7890
##  54 castlemart - 12 def1       -7.66e-03 0.1580 Inf  -0.048  0.9821
##  54 castlemart - 13 def1        7.31e-02 0.1584 Inf   0.462  0.8291
##  54 castlemart - 14 def1       -2.75e-01 0.1608 Inf  -1.711  0.2977
##  54 castlemart - 15 def1        1.64e-01 0.1630 Inf   1.005  0.5855
##  54 castlemart - 16 def1        2.08e-01 0.1566 Inf   1.326  0.4465
##  54 castlemart - 17 def1        1.11e-01 0.1609 Inf   0.687  0.7297
##  54 castlemart - 18 def1        1.34e-01 0.1658 Inf   0.806  0.6767
##  54 castlemart - 19 def1        7.06e-01 0.1795 Inf   3.932  0.0046
##  54 castlemart - 20 def1        1.86e-01 0.1651 Inf   1.129  0.5326
##  54 castlemart - 22 def1       -3.73e-02 0.1602 Inf  -0.233  0.9208
##  54 castlemart - 23 def1        4.07e-01 0.1723 Inf   2.363  0.1245
##  54 castlemart - 24 def1        4.71e-02 0.1648 Inf   0.285  0.8984
##  54 castlemart - 25 def1        1.46e-01 0.1640 Inf   0.890  0.6391
##  54 castlemart - 26 def1        4.26e-02 0.1658 Inf   0.257  0.9105
##  54 castlemart - 27 def1       -7.12e-02 0.1664 Inf  -0.428  0.8438
##  54 castlemart - 28 def1        3.17e-02 0.1653 Inf   0.192  0.9352
##  54 castlemart - 29 def1        2.26e-01 0.1632 Inf   1.388  0.4196
##  54 castlemart - 30 def1        2.00e-01 0.1620 Inf   1.234  0.4858
##  54 castlemart - 31 def1       -1.36e-01 0.1567 Inf  -0.867  0.6519
##  54 castlemart - 32 def1        4.50e-01 0.1645 Inf   2.739  0.0645
##  54 castlemart - 33 def1        3.69e-01 0.1627 Inf   2.266  0.1376
##  54 castlemart - 34 def1       -1.06e-01 0.1596 Inf  -0.665  0.7396
##  54 castlemart - 35 def1        1.42e-01 0.1671 Inf   0.851  0.6575
##  54 castlemart - 36 def1       -1.14e-01 0.1634 Inf  -0.699  0.7231
##  54 castlemart - 37 def1        2.66e-01 0.1704 Inf   1.562  0.3537
##  54 castlemart - 38 def1        1.76e-01 0.1602 Inf   1.096  0.5450
##  54 castlemart - 39 def1        1.26e-01 0.1793 Inf   0.703  0.7218
##  54 castlemart - 41 def1        1.23e-01 0.1585 Inf   0.776  0.6900
##  54 castlemart - 42 def1        9.23e-03 0.1606 Inf   0.058  0.9801
##  54 castlemart - 43 def1        2.41e-01 0.1638 Inf   1.469  0.3878
##  54 castlemart - 44 def1       -2.75e-01 0.1653 Inf  -1.663  0.3158
##  54 castlemart - 45 def1        5.63e-02 0.1581 Inf   0.356  0.8747
##  54 castlemart - 46 def1       -8.02e-02 0.1664 Inf  -0.482  0.8236
##  54 castlemart - 47 def1        3.99e-01 0.1618 Inf   2.464  0.1059
##  54 castlemart - 48 def1       -3.19e-01 0.1629 Inf  -1.958  0.2185
##  54 castlemart - 49 def1       -1.83e-02 0.1627 Inf  -0.112  0.9631
##  54 castlemart - 50 def1        1.08e-01 0.1601 Inf   0.672  0.7364
##  54 castlemart - 51 def1       -2.45e-01 0.1629 Inf  -1.505  0.3732
##  54 castlemart - 52 def1       -9.24e-02 0.1644 Inf  -0.562  0.7870
##  54 castlemart - 53 def1        5.69e-02 0.1614 Inf   0.353  0.8750
##  54 castlemart - 54 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  54 castlemart - 55 def1        6.55e-02 0.1605 Inf   0.408  0.8508
##  54 castlemart - 56 def1        1.09e-02 0.1643 Inf   0.066  0.9784
##  54 castlemart - 57 def1       -5.93e-02 0.1620 Inf  -0.366  0.8698
##  54 castlemart - 58 def1       -1.15e-01 0.1598 Inf  -0.722  0.7155
##  54 castlemart - 59 def1        2.35e-01 0.1690 Inf   1.388  0.4195
##  54 castlemart - 60 def1        1.29e-01 0.1599 Inf   0.805  0.6776
##  54 castlemart - 61 def1       -1.35e-01 0.1623 Inf  -0.830  0.6658
##  55 castlemart - 56 castlemart -5.47e-02 0.1668 Inf  -0.328  0.8829
##  55 castlemart - 57 castlemart -1.25e-01 0.1613 Inf  -0.773  0.6909
##  55 castlemart - 58 castlemart -1.81e-01 0.1612 Inf  -1.122  0.5347
##  55 castlemart - 59 castlemart  1.69e-01 0.1641 Inf   1.031  0.5735
##  55 castlemart - 60 castlemart  6.32e-02 0.1580 Inf   0.400  0.8538
##  55 castlemart - 61 castlemart -2.00e-01 0.1613 Inf  -1.242  0.4832
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##  55 castlemart - 1 def1         2.19e-01 0.1557 Inf   1.408  0.4104
##  55 castlemart - 2 def1        -2.29e-02 0.1597 Inf  -0.143  0.9536
##  55 castlemart - 3 def1        -4.36e-02 0.1603 Inf  -0.272  0.9051
##  55 castlemart - 4 def1        -1.63e-01 0.1654 Inf  -0.986  0.5949
##  55 castlemart - 5 def1        -2.59e-01 0.1623 Inf  -1.593  0.3407
##  55 castlemart - 6 def1        -8.69e-02 0.1606 Inf  -0.541  0.7970
##  55 castlemart - 7 def1        -9.44e-02 0.1625 Inf  -0.581  0.7769
##  55 castlemart - 8 def1         2.12e-01 0.1630 Inf   1.301  0.4574
##  55 castlemart - 9 def1        -2.66e-01 0.1656 Inf  -1.607  0.3353
##  55 castlemart - 10 def1       -8.14e-02 0.1701 Inf  -0.478  0.8242
##  55 castlemart - 11 def1       -2.22e-01 0.1610 Inf  -1.382  0.4226
##  55 castlemart - 12 def1       -1.40e-01 0.1599 Inf  -0.876  0.6471
##  55 castlemart - 13 def1       -5.93e-02 0.1612 Inf  -0.368  0.8693
##  55 castlemart - 14 def1       -4.08e-01 0.1617 Inf  -2.520  0.0965
##  55 castlemart - 15 def1        3.14e-02 0.1632 Inf   0.192  0.9352
##  55 castlemart - 16 def1        7.52e-02 0.1576 Inf   0.477  0.8243
##  55 castlemart - 17 def1       -2.19e-02 0.1601 Inf  -0.137  0.9561
##  55 castlemart - 18 def1        1.25e-03 0.1671 Inf   0.008  0.9969
##  55 castlemart - 19 def1        5.73e-01 0.1854 Inf   3.092  0.0321
##  55 castlemart - 20 def1        5.39e-02 0.1669 Inf   0.323  0.8848
##  55 castlemart - 22 def1       -1.70e-01 0.1593 Inf  -1.065  0.5566
##  55 castlemart - 23 def1        2.75e-01 0.1779 Inf   1.545  0.3596
##  55 castlemart - 24 def1       -8.54e-02 0.1665 Inf  -0.513  0.8076
##  55 castlemart - 25 def1        1.36e-02 0.1670 Inf   0.081  0.9744
##  55 castlemart - 26 def1       -8.98e-02 0.1615 Inf  -0.556  0.7898
##  55 castlemart - 27 def1       -2.04e-01 0.1672 Inf  -1.218  0.4929
##  55 castlemart - 28 def1       -1.01e-01 0.1651 Inf  -0.610  0.7655
##  55 castlemart - 29 def1        9.41e-02 0.1608 Inf   0.585  0.7742
##  55 castlemart - 30 def1        6.76e-02 0.1650 Inf   0.410  0.8504
##  55 castlemart - 31 def1       -2.68e-01 0.1565 Inf  -1.715  0.2964
##  55 castlemart - 32 def1        3.18e-01 0.1674 Inf   1.899  0.2340
##  55 castlemart - 33 def1        2.36e-01 0.1598 Inf   1.479  0.3821
##  55 castlemart - 34 def1       -2.39e-01 0.1595 Inf  -1.495  0.3774
##  55 castlemart - 35 def1        9.78e-03 0.1665 Inf   0.059  0.9801
##  55 castlemart - 36 def1       -2.47e-01 0.1612 Inf  -1.530  0.3649
##  55 castlemart - 37 def1        1.34e-01 0.1690 Inf   0.792  0.6830
##  55 castlemart - 38 def1        4.31e-02 0.1624 Inf   0.265  0.9072
##  55 castlemart - 39 def1       -6.36e-03 0.1797 Inf  -0.035  0.9871
##  55 castlemart - 41 def1       -9.49e-03 0.1631 Inf  -0.058  0.9801
##  55 castlemart - 42 def1       -1.23e-01 0.1624 Inf  -0.759  0.6995
##  55 castlemart - 43 def1        1.08e-01 0.1630 Inf   0.664  0.7404
##  55 castlemart - 44 def1       -4.07e-01 0.1648 Inf  -2.472  0.1041
##  55 castlemart - 45 def1       -7.62e-02 0.1630 Inf  -0.467  0.8276
##  55 castlemart - 46 def1       -2.13e-01 0.1638 Inf  -1.298  0.4591
##  55 castlemart - 47 def1        2.66e-01 0.1590 Inf   1.674  0.3115
##  55 castlemart - 48 def1       -4.51e-01 0.1577 Inf  -2.862  0.0514
##  55 castlemart - 49 def1       -1.51e-01 0.1617 Inf  -0.932  0.6201
##  55 castlemart - 50 def1       -2.47e-02 0.1637 Inf  -0.151  0.9521
##  55 castlemart - 51 def1       -3.78e-01 0.1664 Inf  -2.269  0.1370
##  55 castlemart - 52 def1       -2.25e-01 0.1628 Inf  -1.381  0.4230
##  55 castlemart - 53 def1       -7.55e-02 0.1628 Inf  -0.464  0.8285
##  55 castlemart - 54 def1       -1.99e-01 0.1608 Inf  -1.240  0.4832
##  55 castlemart - 55 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  55 castlemart - 56 def1       -1.22e-01 0.1693 Inf  -0.718  0.7171
##  55 castlemart - 57 def1       -1.92e-01 0.1639 Inf  -1.170  0.5147
##  55 castlemart - 58 def1       -2.48e-01 0.1638 Inf  -1.513  0.3707
```

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##  55 castlemart - 59 def1        1.02e-01 0.1665 Inf   0.614  0.7635
##  55 castlemart - 60 def1       -3.73e-03 0.1603 Inf  -0.023  0.9919
##  55 castlemart - 61 def1       -2.67e-01 0.1637 Inf  -1.632  0.3272
##  56 castlemart - 57 castlemart -7.01e-02 0.1701 Inf  -0.412  0.8496
##  56 castlemart - 58 castlemart -1.26e-01 0.1674 Inf  -0.754  0.6998
##  56 castlemart - 59 castlemart  2.24e-01 0.1756 Inf   1.275  0.4697
##  56 castlemart - 60 castlemart  1.18e-01 0.1678 Inf   0.702  0.7218
##  56 castlemart - 61 castlemart -1.46e-01 0.1660 Inf  -0.877  0.6463
##  56 castlemart - 1 def1         2.74e-01 0.1680 Inf   1.630  0.3280
##  56 castlemart - 2 def1         3.18e-02 0.1668 Inf   0.190  0.9360
##  56 castlemart - 3 def1         1.10e-02 0.1682 Inf   0.066  0.9784
##  56 castlemart - 4 def1        -1.08e-01 0.1700 Inf  -0.638  0.7532
##  56 castlemart - 5 def1        -2.04e-01 0.1688 Inf  -1.208  0.4977
##  56 castlemart - 6 def1        -3.23e-02 0.1722 Inf  -0.187  0.9369
##  56 castlemart - 7 def1        -3.97e-02 0.1700 Inf  -0.234  0.9202
##  56 castlemart - 8 def1         2.67e-01 0.1701 Inf   1.569  0.3517
##  56 castlemart - 9 def1        -2.11e-01 0.1726 Inf  -1.224  0.4901
##  56 castlemart - 10 def1       -2.67e-02 0.1809 Inf  -0.148  0.9526
##  56 castlemart - 11 def1       -1.68e-01 0.1678 Inf  -1.000  0.5879
##  56 castlemart - 12 def1       -8.54e-02 0.1703 Inf  -0.502  0.8131
##  56 castlemart - 13 def1       -4.64e-03 0.1679 Inf  -0.028  0.9904
##  56 castlemart - 14 def1       -3.53e-01 0.1722 Inf  -2.050  0.1921
##  56 castlemart - 15 def1        8.60e-02 0.1727 Inf   0.498  0.8156
##  56 castlemart - 16 def1        1.30e-01 0.1644 Inf   0.790  0.6837
##  56 castlemart - 17 def1        3.27e-02 0.1722 Inf   0.190  0.9362
##  56 castlemart - 18 def1        5.59e-02 0.1725 Inf   0.324  0.8848
##  56 castlemart - 19 def1        6.28e-01 0.1861 Inf   3.374  0.0177
##  56 castlemart - 20 def1        1.09e-01 0.1755 Inf   0.619  0.7615
##  56 castlemart - 22 def1       -1.15e-01 0.1713 Inf  -0.672  0.7368
##  56 castlemart - 23 def1        3.29e-01 0.1858 Inf   1.773  0.2749
##  56 castlemart - 24 def1       -3.07e-02 0.1706 Inf  -0.180  0.9384
##  56 castlemart - 25 def1        6.83e-02 0.1683 Inf   0.406  0.8522
##  56 castlemart - 26 def1       -3.52e-02 0.1752 Inf  -0.201  0.9314
##  56 castlemart - 27 def1       -1.49e-01 0.1741 Inf  -0.855  0.6560
##  56 castlemart - 28 def1       -4.60e-02 0.1743 Inf  -0.264  0.9078
##  56 castlemart - 29 def1        1.49e-01 0.1708 Inf   0.871  0.6498
##  56 castlemart - 30 def1        1.22e-01 0.1713 Inf   0.714  0.7193
##  56 castlemart - 31 def1       -2.14e-01 0.1643 Inf  -1.301  0.4577
##  56 castlemart - 32 def1        3.73e-01 0.1708 Inf   2.181  0.1569
##  56 castlemart - 33 def1        2.91e-01 0.1714 Inf   1.698  0.3028
##  56 castlemart - 34 def1       -1.84e-01 0.1678 Inf  -1.096  0.5450
##  56 castlemart - 35 def1        6.44e-02 0.1757 Inf   0.367  0.8698
##  56 castlemart - 36 def1       -1.92e-01 0.1698 Inf  -1.131  0.5320
##  56 castlemart - 37 def1        1.88e-01 0.1783 Inf   1.056  0.5605
##  56 castlemart - 38 def1        9.77e-02 0.1702 Inf   0.574  0.7813
##  56 castlemart - 39 def1        4.83e-02 0.1872 Inf   0.258  0.9100
##  56 castlemart - 41 def1        4.52e-02 0.1718 Inf   0.263  0.9083
##  56 castlemart - 42 def1       -6.85e-02 0.1660 Inf  -0.413  0.8495
##  56 castlemart - 43 def1        1.63e-01 0.1725 Inf   0.944  0.6169
##  56 castlemart - 44 def1       -3.53e-01 0.1747 Inf  -2.019  0.2006
##  56 castlemart - 45 def1       -2.15e-02 0.1712 Inf  -0.126  0.9592
##  56 castlemart - 46 def1       -1.58e-01 0.1747 Inf  -0.904  0.6327
##  56 castlemart - 47 def1        3.21e-01 0.1716 Inf   1.871  0.2423
##  56 castlemart - 48 def1       -3.97e-01 0.1720 Inf  -2.307  0.1286
##  56 castlemart - 49 def1       -9.60e-02 0.1716 Inf  -0.560  0.7887
##  56 castlemart - 50 def1        2.99e-02 0.1723 Inf   0.174  0.9418
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##  56 castlemart - 51 def1       -3.23e-01 0.1703 Inf  -1.896  0.2350
##  56 castlemart - 52 def1       -1.70e-01 0.1735 Inf  -0.981  0.5973
##  56 castlemart - 53 def1       -2.09e-02 0.1713 Inf  -0.122  0.9601
##  56 castlemart - 54 def1       -1.45e-01 0.1645 Inf  -0.879  0.6457
##  56 castlemart - 55 def1       -1.22e-02 0.1692 Inf  -0.072  0.9766
##  56 castlemart - 56 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  56 castlemart - 57 def1       -1.37e-01 0.1725 Inf  -0.794  0.6821
##  56 castlemart - 58 def1       -1.93e-01 0.1698 Inf  -1.137  0.5300
##  56 castlemart - 59 def1        1.57e-01 0.1778 Inf   0.883  0.6437
##  56 castlemart - 60 def1        5.09e-02 0.1699 Inf   0.300  0.8942
##  56 castlemart - 61 def1       -2.13e-01 0.1683 Inf  -1.263  0.4758
##  57 castlemart - 58 castlemart -5.62e-02 0.1637 Inf  -0.343  0.8775
##  57 castlemart - 59 castlemart  2.94e-01 0.1664 Inf   1.767  0.2766
##  57 castlemart - 60 castlemart  1.88e-01 0.1623 Inf   1.158  0.5199
##  57 castlemart - 61 castlemart -7.55e-02 0.1611 Inf  -0.469  0.8276
##  57 castlemart - 1 def1         3.44e-01 0.1616 Inf   2.129  0.1695
##  57 castlemart - 2 def1         1.02e-01 0.1588 Inf   0.642  0.7506
##  57 castlemart - 3 def1         8.12e-02 0.1644 Inf   0.494  0.8185
##  57 castlemart - 4 def1        -3.83e-02 0.1683 Inf  -0.227  0.9234
##  57 castlemart - 5 def1        -1.34e-01 0.1643 Inf  -0.814  0.6730
##  57 castlemart - 6 def1         3.79e-02 0.1612 Inf   0.235  0.9195
##  57 castlemart - 7 def1         3.04e-02 0.1679 Inf   0.181  0.9384
##  57 castlemart - 8 def1         3.37e-01 0.1695 Inf   1.987  0.2093
##  57 castlemart - 9 def1        -1.41e-01 0.1668 Inf  -0.847  0.6583
##  57 castlemart - 10 def1        4.34e-02 0.1718 Inf   0.253  0.9120
##  57 castlemart - 11 def1       -9.77e-02 0.1668 Inf  -0.586  0.7739
##  57 castlemart - 12 def1       -1.53e-02 0.1628 Inf  -0.094  0.9703
##  57 castlemart - 13 def1        6.55e-02 0.1662 Inf   0.394  0.8561
##  57 castlemart - 14 def1       -2.83e-01 0.1649 Inf  -1.715  0.2964
##  57 castlemart - 15 def1        1.56e-01 0.1649 Inf   0.947  0.6159
##  57 castlemart - 16 def1        2.00e-01 0.1617 Inf   1.237  0.4845
##  57 castlemart - 17 def1        1.03e-01 0.1626 Inf   0.633  0.7555
##  57 castlemart - 18 def1        1.26e-01 0.1680 Inf   0.750  0.7006
##  57 castlemart - 19 def1        6.98e-01 0.1859 Inf   3.755  0.0070
##  57 castlemart - 20 def1        1.79e-01 0.1688 Inf   1.059  0.5599
##  57 castlemart - 22 def1       -4.49e-02 0.1663 Inf  -0.270  0.9057
##  57 castlemart - 23 def1        4.00e-01 0.1812 Inf   2.205  0.1520
##  57 castlemart - 24 def1        3.94e-02 0.1667 Inf   0.237  0.9185
##  57 castlemart - 25 def1        1.38e-01 0.1708 Inf   0.810  0.6750
##  57 castlemart - 26 def1        3.49e-02 0.1700 Inf   0.205  0.9308
##  57 castlemart - 27 def1       -7.88e-02 0.1703 Inf  -0.463  0.8288
##  57 castlemart - 28 def1        2.41e-02 0.1673 Inf   0.144  0.9536
##  57 castlemart - 29 def1        2.19e-01 0.1677 Inf   1.305  0.4559
##  57 castlemart - 30 def1        1.92e-01 0.1688 Inf   1.140  0.5297
##  57 castlemart - 31 def1       -1.44e-01 0.1615 Inf  -0.889  0.6397
##  57 castlemart - 32 def1        4.43e-01 0.1695 Inf   2.613  0.0817
##  57 castlemart - 33 def1        3.61e-01 0.1620 Inf   2.230  0.1453
##  57 castlemart - 34 def1       -1.14e-01 0.1645 Inf  -0.692  0.7268
##  57 castlemart - 35 def1        1.35e-01 0.1718 Inf   0.783  0.6870
##  57 castlemart - 36 def1       -1.22e-01 0.1672 Inf  -0.729  0.7113
##  57 castlemart - 37 def1        2.59e-01 0.1716 Inf   1.507  0.3727
##  57 castlemart - 38 def1        1.68e-01 0.1638 Inf   1.025  0.5748
##  57 castlemart - 39 def1        1.18e-01 0.1828 Inf   0.648  0.7466
##  57 castlemart - 41 def1        1.15e-01 0.1624 Inf   0.710  0.7204
##  57 castlemart - 42 def1        1.60e-03 0.1663 Inf   0.010  0.9961
##  57 castlemart - 43 def1        2.33e-01 0.1658 Inf   1.405  0.4116
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##  57 castlemart - 44 def1       -2.83e-01 0.1698 Inf  -1.665  0.3154
##  57 castlemart - 45 def1        4.86e-02 0.1652 Inf   0.294  0.8963
##  57 castlemart - 46 def1       -8.79e-02 0.1696 Inf  -0.518  0.8066
##  57 castlemart - 47 def1        3.91e-01 0.1661 Inf   2.355  0.1259
##  57 castlemart - 48 def1       -3.27e-01 0.1637 Inf  -1.995  0.2064
##  57 castlemart - 49 def1       -2.59e-02 0.1643 Inf  -0.158  0.9496
##  57 castlemart - 50 def1        1.00e-01 0.1638 Inf   0.611  0.7650
##  57 castlemart - 51 def1       -2.53e-01 0.1698 Inf  -1.489  0.3788
##  57 castlemart - 52 def1       -1.00e-01 0.1622 Inf  -0.617  0.7625
##  57 castlemart - 53 def1        4.93e-02 0.1650 Inf   0.298  0.8950
##  57 castlemart - 54 def1       -7.45e-02 0.1623 Inf  -0.459  0.8291
##  57 castlemart - 55 def1        5.79e-02 0.1639 Inf   0.353  0.8750
##  57 castlemart - 56 def1        3.24e-03 0.1726 Inf   0.019  0.9939
##  57 castlemart - 57 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  57 castlemart - 58 def1       -1.23e-01 0.1663 Inf  -0.740  0.7064
##  57 castlemart - 59 def1        2.27e-01 0.1688 Inf   1.345  0.4389
##  57 castlemart - 60 def1        1.21e-01 0.1646 Inf   0.735  0.7078
##  57 castlemart - 61 def1       -1.42e-01 0.1636 Inf  -0.871  0.6498
##  58 castlemart - 59 castlemart  3.50e-01 0.1694 Inf   2.067  0.1871
##  58 castlemart - 60 castlemart  2.44e-01 0.1600 Inf   1.526  0.3659
##  58 castlemart - 61 castlemart -1.94e-02 0.1602 Inf  -0.121  0.9601
##  58 castlemart - 1 def1         4.00e-01 0.1613 Inf   2.481  0.1030
##  58 castlemart - 2 def1         1.58e-01 0.1614 Inf   0.979  0.5974
##  58 castlemart - 3 def1         1.37e-01 0.1656 Inf   0.829  0.6661
##  58 castlemart - 4 def1         1.79e-02 0.1667 Inf   0.107  0.9647
##  58 castlemart - 5 def1        -7.76e-02 0.1631 Inf  -0.476  0.8252
##  58 castlemart - 6 def1         9.40e-02 0.1628 Inf   0.578  0.7792
##  58 castlemart - 7 def1         8.66e-02 0.1663 Inf   0.520  0.8066
##  58 castlemart - 8 def1         3.93e-01 0.1685 Inf   2.332  0.1278
##  58 castlemart - 9 def1        -8.51e-02 0.1661 Inf  -0.512  0.8076
##  58 castlemart - 10 def1        9.96e-02 0.1704 Inf   0.584  0.7743
##  58 castlemart - 11 def1       -4.15e-02 0.1652 Inf  -0.251  0.9130
##  58 castlemart - 12 def1        4.09e-02 0.1646 Inf   0.248  0.9136
##  58 castlemart - 13 def1        1.22e-01 0.1630 Inf   0.746  0.7028
##  58 castlemart - 14 def1       -2.27e-01 0.1632 Inf  -1.389  0.4191
##  58 castlemart - 15 def1        2.12e-01 0.1601 Inf   1.326  0.4465
##  58 castlemart - 16 def1        2.56e-01 0.1598 Inf   1.603  0.3368
##  58 castlemart - 17 def1        1.59e-01 0.1641 Inf   0.969  0.6016
##  58 castlemart - 18 def1        1.82e-01 0.1680 Inf   1.084  0.5486
##  58 castlemart - 19 def1        7.54e-01 0.1876 Inf   4.021  0.0035
##  58 castlemart - 20 def1        2.35e-01 0.1700 Inf   1.382  0.4230
##  58 castlemart - 22 def1        1.12e-02 0.1651 Inf   0.068  0.9784
##  58 castlemart - 23 def1        4.56e-01 0.1770 Inf   2.575  0.0869
##  58 castlemart - 24 def1        9.56e-02 0.1694 Inf   0.564  0.7862
##  58 castlemart - 25 def1        1.95e-01 0.1701 Inf   1.144  0.5275
##  58 castlemart - 26 def1        9.11e-02 0.1697 Inf   0.537  0.7996
##  58 castlemart - 27 def1       -2.27e-02 0.1671 Inf  -0.136  0.9561
##  58 castlemart - 28 def1        8.03e-02 0.1673 Inf   0.480  0.8236
##  58 castlemart - 29 def1        2.75e-01 0.1671 Inf   1.646  0.3222
##  58 castlemart - 30 def1        2.49e-01 0.1656 Inf   1.500  0.3750
##  58 castlemart - 31 def1       -8.74e-02 0.1608 Inf  -0.543  0.7959
##  58 castlemart - 32 def1        4.99e-01 0.1685 Inf   2.961  0.0415
##  58 castlemart - 33 def1        4.17e-01 0.1659 Inf   2.515  0.0972
##  58 castlemart - 34 def1       -5.76e-02 0.1629 Inf  -0.354  0.8750
##  58 castlemart - 35 def1        1.91e-01 0.1712 Inf   1.114  0.5381
##  58 castlemart - 36 def1       -6.57e-02 0.1666 Inf  -0.395  0.8558
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##  58 castlemart - 37 def1        3.15e-01 0.1733 Inf   1.815  0.2607
##  58 castlemart - 38 def1        2.24e-01 0.1650 Inf   1.357  0.4341
##  58 castlemart - 39 def1        1.75e-01 0.1823 Inf   0.957  0.6097
##  58 castlemart - 41 def1        1.71e-01 0.1638 Inf   1.047  0.5649
##  58 castlemart - 42 def1        5.78e-02 0.1670 Inf   0.346  0.8771
##  58 castlemart - 43 def1        2.89e-01 0.1670 Inf   1.731  0.2908
##  58 castlemart - 44 def1       -2.26e-01 0.1693 Inf  -1.337  0.4428
##  58 castlemart - 45 def1        1.05e-01 0.1631 Inf   0.642  0.7504
##  58 castlemart - 46 def1       -3.17e-02 0.1681 Inf  -0.189  0.9369
##  58 castlemart - 47 def1        4.47e-01 0.1643 Inf   2.722  0.0658
##  58 castlemart - 48 def1       -2.70e-01 0.1663 Inf  -1.626  0.3296
##  58 castlemart - 49 def1        3.03e-02 0.1659 Inf   0.182  0.9378
##  58 castlemart - 50 def1        1.56e-01 0.1660 Inf   0.941  0.6183
##  58 castlemart - 51 def1       -1.97e-01 0.1684 Inf  -1.168  0.5155
##  58 castlemart - 52 def1       -4.39e-02 0.1613 Inf  -0.272  0.9051
##  58 castlemart - 53 def1        1.05e-01 0.1603 Inf   0.658  0.7422
##  58 castlemart - 54 def1       -1.84e-02 0.1600 Inf  -0.115  0.9626
##  58 castlemart - 55 def1        1.14e-01 0.1638 Inf   0.696  0.7247
##  58 castlemart - 56 def1        5.94e-02 0.1699 Inf   0.350  0.8755
##  58 castlemart - 57 def1       -1.07e-02 0.1662 Inf  -0.065  0.9784
##  58 castlemart - 58 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  58 castlemart - 59 def1        2.83e-01 0.1717 Inf   1.649  0.3210
##  58 castlemart - 60 def1        1.77e-01 0.1623 Inf   1.092  0.5457
##  58 castlemart - 61 def1       -8.63e-02 0.1627 Inf  -0.530  0.8013
##  59 castlemart - 60 castlemart -1.06e-01 0.1691 Inf  -0.627  0.7586
##  59 castlemart - 61 castlemart -3.70e-01 0.1690 Inf  -2.187  0.1557
##  59 castlemart - 1 def1         5.00e-02 0.1679 Inf   0.298  0.8950
##  59 castlemart - 2 def1        -1.92e-01 0.1682 Inf  -1.142  0.5289
##  59 castlemart - 3 def1        -2.13e-01 0.1705 Inf  -1.248  0.4817
##  59 castlemart - 4 def1        -3.32e-01 0.1745 Inf  -1.903  0.2328
##  59 castlemart - 5 def1        -4.28e-01 0.1718 Inf  -2.490  0.1010
##  59 castlemart - 6 def1        -2.56e-01 0.1694 Inf  -1.512  0.3712
##  59 castlemart - 7 def1        -2.64e-01 0.1729 Inf  -1.524  0.3664
##  59 castlemart - 8 def1         4.29e-02 0.1748 Inf   0.246  0.9149
##  59 castlemart - 9 def1        -4.35e-01 0.1717 Inf  -2.535  0.0939
##  59 castlemart - 10 def1       -2.51e-01 0.1746 Inf  -1.435  0.3986
##  59 castlemart - 11 def1       -3.92e-01 0.1723 Inf  -2.273  0.1358
##  59 castlemart - 12 def1       -3.09e-01 0.1704 Inf  -1.815  0.2607
##  59 castlemart - 13 def1       -2.28e-01 0.1718 Inf  -1.330  0.4454
##  59 castlemart - 14 def1       -5.77e-01 0.1694 Inf  -3.404  0.0163
##  59 castlemart - 15 def1       -1.38e-01 0.1709 Inf  -0.807  0.6766
##  59 castlemart - 16 def1       -9.39e-02 0.1647 Inf  -0.570  0.7829
##  59 castlemart - 17 def1       -1.91e-01 0.1710 Inf  -1.117  0.5360
##  59 castlemart - 18 def1       -1.68e-01 0.1713 Inf  -0.980  0.5973
##  59 castlemart - 19 def1        4.04e-01 0.1928 Inf   2.096  0.1789
##  59 castlemart - 20 def1       -1.15e-01 0.1751 Inf  -0.658  0.7421
##  59 castlemart - 22 def1       -3.39e-01 0.1691 Inf  -2.004  0.2037
##  59 castlemart - 23 def1        1.06e-01 0.1851 Inf   0.571  0.7829
##  59 castlemart - 24 def1       -2.55e-01 0.1741 Inf  -1.462  0.3910
##  59 castlemart - 25 def1       -1.56e-01 0.1762 Inf  -0.883  0.6436
##  59 castlemart - 26 def1       -2.59e-01 0.1747 Inf  -1.483  0.3813
##  59 castlemart - 27 def1       -3.73e-01 0.1754 Inf  -2.125  0.1705
##  59 castlemart - 28 def1       -2.70e-01 0.1746 Inf  -1.545  0.3595
##  59 castlemart - 29 def1       -7.51e-02 0.1700 Inf  -0.442  0.8368
##  59 castlemart - 30 def1       -1.02e-01 0.1738 Inf  -0.584  0.7743
##  59 castlemart - 31 def1       -4.37e-01 0.1633 Inf  -2.679  0.0710
```

```
##  59 castlemart - 32 def1        1.49e-01 0.1757 Inf   0.847  0.6583
##  59 castlemart - 33 def1        6.72e-02 0.1666 Inf   0.403  0.8524
##  59 castlemart - 34 def1       -4.08e-01 0.1661 Inf  -2.455  0.1077
##  59 castlemart - 35 def1       -1.59e-01 0.1762 Inf  -0.904  0.6327
##  59 castlemart - 36 def1       -4.16e-01 0.1731 Inf  -2.402  0.1178
##  59 castlemart - 37 def1       -3.54e-02 0.1772 Inf  -0.200  0.9321
##  59 castlemart - 38 def1       -1.26e-01 0.1707 Inf  -0.738  0.7067
##  59 castlemart - 39 def1       -1.76e-01 0.1872 Inf  -0.938  0.6194
##  59 castlemart - 41 def1       -1.79e-01 0.1711 Inf  -1.044  0.5665
##  59 castlemart - 42 def1       -2.92e-01 0.1724 Inf  -1.696  0.3036
##  59 castlemart - 43 def1       -6.11e-02 0.1659 Inf  -0.368  0.8693
##  59 castlemart - 44 def1       -5.77e-01 0.1704 Inf  -3.384  0.0174
##  59 castlemart - 45 def1       -2.45e-01 0.1712 Inf  -1.433  0.3991
##  59 castlemart - 46 def1       -3.82e-01 0.1725 Inf  -2.213  0.1505
##  59 castlemart - 47 def1        9.71e-02 0.1708 Inf   0.568  0.7841
##  59 castlemart - 48 def1       -6.21e-01 0.1676 Inf  -3.703  0.0082
##  59 castlemart - 49 def1       -3.20e-01 0.1713 Inf  -1.867  0.2433
##  59 castlemart - 50 def1       -1.94e-01 0.1704 Inf  -1.138  0.5300
##  59 castlemart - 51 def1       -5.47e-01 0.1744 Inf  -3.135  0.0300
##  59 castlemart - 52 def1       -3.94e-01 0.1710 Inf  -2.303  0.1291
##  59 castlemart - 53 def1       -2.45e-01 0.1674 Inf  -1.462  0.3910
##  59 castlemart - 54 def1       -3.68e-01 0.1695 Inf  -2.174  0.1585
##  59 castlemart - 55 def1       -2.36e-01 0.1667 Inf  -1.416  0.4080
##  59 castlemart - 56 def1       -2.91e-01 0.1781 Inf  -1.632  0.3272
##  59 castlemart - 57 def1       -3.61e-01 0.1689 Inf  -2.136  0.1676
##  59 castlemart - 58 def1       -4.17e-01 0.1720 Inf  -2.425  0.1132
##  59 castlemart - 59 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  59 castlemart - 60 def1       -1.73e-01 0.1714 Inf  -1.009  0.5824
##  59 castlemart - 61 def1       -4.36e-01 0.1714 Inf  -2.546  0.0918
##  60 castlemart - 61 castlemart -2.63e-01 0.1627 Inf  -1.620  0.3308
##  60 castlemart - 1 def1         1.56e-01 0.1611 Inf   0.969  0.6016
##  60 castlemart - 2 def1        -8.60e-02 0.1598 Inf  -0.539  0.7995
##  60 castlemart - 3 def1        -1.07e-01 0.1636 Inf  -0.653  0.7444
##  60 castlemart - 4 def1        -2.26e-01 0.1666 Inf  -1.358  0.4341
##  60 castlemart - 5 def1        -3.22e-01 0.1600 Inf  -2.011  0.2022
##  60 castlemart - 6 def1        -1.50e-01 0.1635 Inf  -0.918  0.6253
##  60 castlemart - 7 def1        -1.58e-01 0.1635 Inf  -0.963  0.6052
##  60 castlemart - 8 def1         1.49e-01 0.1685 Inf   0.884  0.6428
##  60 castlemart - 9 def1        -3.29e-01 0.1667 Inf  -1.974  0.2129
##  60 castlemart - 10 def1       -1.45e-01 0.1745 Inf  -0.828  0.6664
##  60 castlemart - 11 def1       -2.86e-01 0.1648 Inf  -1.733  0.2907
##  60 castlemart - 12 def1       -2.03e-01 0.1644 Inf  -1.236  0.4850
##  60 castlemart - 13 def1       -1.22e-01 0.1602 Inf  -0.765  0.6964
##  60 castlemart - 14 def1       -4.71e-01 0.1647 Inf  -2.858  0.0516
##  60 castlemart - 15 def1       -3.18e-02 0.1637 Inf  -0.194  0.9344
##  60 castlemart - 16 def1        1.21e-02 0.1574 Inf   0.077  0.9760
##  60 castlemart - 17 def1       -8.51e-02 0.1652 Inf  -0.515  0.8066
##  60 castlemart - 18 def1       -6.19e-02 0.1692 Inf  -0.366  0.8698
##  60 castlemart - 19 def1        5.10e-01 0.1870 Inf   2.728  0.0651
##  60 castlemart - 20 def1       -9.24e-03 0.1688 Inf  -0.055  0.9814
##  60 castlemart - 22 def1       -2.33e-01 0.1624 Inf  -1.434  0.3990
##  60 castlemart - 23 def1        2.12e-01 0.1801 Inf   1.175  0.5122
##  60 castlemart - 24 def1       -1.49e-01 0.1654 Inf  -0.898  0.6345
##  60 castlemart - 25 def1       -4.95e-02 0.1671 Inf  -0.297  0.8955
##  60 castlemart - 26 def1       -1.53e-01 0.1691 Inf  -0.905  0.6327
##  60 castlemart - 27 def1       -2.67e-01 0.1672 Inf  -1.595  0.3400
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##  60 castlemart - 28 def1       -1.64e-01 0.1673 Inf  -0.979  0.5974
##  60 castlemart - 29 def1        3.09e-02 0.1664 Inf   0.186  0.9373
##  60 castlemart - 30 def1        4.42e-03 0.1650 Inf   0.027  0.9904
##  60 castlemart - 31 def1       -3.31e-01 0.1595 Inf  -2.078  0.1843
##  60 castlemart - 32 def1        2.55e-01 0.1682 Inf   1.515  0.3698
##  60 castlemart - 33 def1        1.73e-01 0.1651 Inf   1.050  0.5647
##  60 castlemart - 34 def1       -3.02e-01 0.1639 Inf  -1.840  0.2525
##  60 castlemart - 35 def1       -5.34e-02 0.1707 Inf  -0.313  0.8891
##  60 castlemart - 36 def1       -3.10e-01 0.1639 Inf  -1.891  0.2366
##  60 castlemart - 37 def1        7.06e-02 0.1713 Inf   0.412  0.8496
##  60 castlemart - 38 def1       -2.01e-02 0.1641 Inf  -0.122  0.9601
##  60 castlemart - 39 def1       -6.95e-02 0.1818 Inf  -0.382  0.8616
##  60 castlemart - 41 def1       -7.26e-02 0.1650 Inf  -0.440  0.8373
##  60 castlemart - 42 def1       -1.86e-01 0.1643 Inf  -1.134  0.5314
##  60 castlemart - 43 def1        4.50e-02 0.1666 Inf   0.270  0.9057
##  60 castlemart - 44 def1       -4.71e-01 0.1679 Inf  -2.802  0.0576
##  60 castlemart - 45 def1       -1.39e-01 0.1629 Inf  -0.855  0.6560
##  60 castlemart - 46 def1       -2.76e-01 0.1693 Inf  -1.629  0.3286
##  60 castlemart - 47 def1        2.03e-01 0.1644 Inf   1.235  0.4854
##  60 castlemart - 48 def1       -5.15e-01 0.1660 Inf  -3.099  0.0321
##  60 castlemart - 49 def1       -2.14e-01 0.1623 Inf  -1.317  0.4501
##  60 castlemart - 50 def1       -8.79e-02 0.1657 Inf  -0.530  0.8013
##  60 castlemart - 51 def1       -4.41e-01 0.1689 Inf  -2.609  0.0821
##  60 castlemart - 52 def1       -2.88e-01 0.1644 Inf  -1.752  0.2834
##  60 castlemart - 53 def1       -1.39e-01 0.1626 Inf  -0.853  0.6569
##  60 castlemart - 54 def1       -2.62e-01 0.1608 Inf  -1.632  0.3272
##  60 castlemart - 55 def1       -1.30e-01 0.1609 Inf  -0.808  0.6757
##  60 castlemart - 56 def1       -1.85e-01 0.1706 Inf  -1.083  0.5493
##  60 castlemart - 57 def1       -2.55e-01 0.1651 Inf  -1.543  0.3598
##  60 castlemart - 58 def1       -3.11e-01 0.1629 Inf  -1.909  0.2309
##  60 castlemart - 59 def1        3.91e-02 0.1718 Inf   0.228  0.9234
##  60 castlemart - 60 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  60 castlemart - 61 def1       -3.30e-01 0.1654 Inf  -1.998  0.2060
##  61 castlemart - 1 def1         4.20e-01 0.1589 Inf   2.640  0.0772
##  61 castlemart - 2 def1         1.77e-01 0.1589 Inf   1.117  0.5362
##  61 castlemart - 3 def1         1.57e-01 0.1642 Inf   0.955  0.6107
##  61 castlemart - 4 def1         3.73e-02 0.1668 Inf   0.223  0.9256
##  61 castlemart - 5 def1        -5.82e-02 0.1650 Inf  -0.353  0.8750
##  61 castlemart - 6 def1         1.13e-01 0.1639 Inf   0.692  0.7268
##  61 castlemart - 7 def1         1.06e-01 0.1678 Inf   0.631  0.7563
##  61 castlemart - 8 def1         4.12e-01 0.1677 Inf   2.459  0.1070
##  61 castlemart - 9 def1        -6.57e-02 0.1671 Inf  -0.393  0.8564
##  61 castlemart - 10 def1        1.19e-01 0.1736 Inf   0.685  0.7300
##  61 castlemart - 11 def1       -2.21e-02 0.1623 Inf  -0.136  0.9561
##  61 castlemart - 12 def1        6.03e-02 0.1647 Inf   0.366  0.8698
##  61 castlemart - 13 def1        1.41e-01 0.1649 Inf   0.855  0.6560
##  61 castlemart - 14 def1       -2.07e-01 0.1654 Inf  -1.253  0.4794
##  61 castlemart - 15 def1        2.32e-01 0.1630 Inf   1.422  0.4051
##  61 castlemart - 16 def1        2.76e-01 0.1593 Inf   1.730  0.2908
##  61 castlemart - 17 def1        1.78e-01 0.1642 Inf   1.086  0.5478
##  61 castlemart - 18 def1        2.02e-01 0.1702 Inf   1.184  0.5082
##  61 castlemart - 19 def1        7.74e-01 0.1880 Inf   4.116  0.0026
##  61 castlemart - 20 def1        2.54e-01 0.1691 Inf   1.503  0.3740
##  61 castlemart - 22 def1        3.06e-02 0.1663 Inf   0.184  0.9373
##  61 castlemart - 23 def1        4.75e-01 0.1794 Inf   2.648  0.0763
##  61 castlemart - 24 def1        1.15e-01 0.1685 Inf   0.682  0.7317
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##  61 castlemart - 25 def1        2.14e-01 0.1704 Inf   1.256  0.4785
##  61 castlemart - 26 def1        1.10e-01 0.1687 Inf   0.655  0.7438
##  61 castlemart - 27 def1       -3.26e-03 0.1693 Inf  -0.019  0.9939
##  61 castlemart - 28 def1        9.97e-02 0.1664 Inf   0.599  0.7691
##  61 castlemart - 29 def1        2.94e-01 0.1674 Inf   1.759  0.2800
##  61 castlemart - 30 def1        2.68e-01 0.1685 Inf   1.590  0.3420
##  61 castlemart - 31 def1       -6.80e-02 0.1615 Inf  -0.421  0.8468
##  61 castlemart - 32 def1        5.18e-01 0.1677 Inf   3.091  0.0321
##  61 castlemart - 33 def1        4.37e-01 0.1652 Inf   2.643  0.0771
##  61 castlemart - 34 def1       -3.82e-02 0.1599 Inf  -0.239  0.9170
##  61 castlemart - 35 def1        2.10e-01 0.1712 Inf   1.227  0.4890
##  61 castlemart - 36 def1       -4.63e-02 0.1681 Inf  -0.276  0.9039
##  61 castlemart - 37 def1        3.34e-01 0.1722 Inf   1.941  0.2237
##  61 castlemart - 38 def1        2.43e-01 0.1664 Inf   1.463  0.3910
##  61 castlemart - 39 def1        1.94e-01 0.1815 Inf   1.069  0.5566
##  61 castlemart - 41 def1        1.91e-01 0.1653 Inf   1.154  0.5214
##  61 castlemart - 42 def1        7.72e-02 0.1672 Inf   0.461  0.8291
##  61 castlemart - 43 def1        3.08e-01 0.1673 Inf   1.844  0.2511
##  61 castlemart - 44 def1       -2.07e-01 0.1698 Inf  -1.219  0.4928
##  61 castlemart - 45 def1        1.24e-01 0.1662 Inf   0.747  0.7025
##  61 castlemart - 46 def1       -1.23e-02 0.1661 Inf  -0.074  0.9766
##  61 castlemart - 47 def1        4.67e-01 0.1661 Inf   2.809  0.0567
##  61 castlemart - 48 def1       -2.51e-01 0.1658 Inf  -1.514  0.3701
##  61 castlemart - 49 def1        4.97e-02 0.1647 Inf   0.301  0.8939
##  61 castlemart - 50 def1        1.76e-01 0.1652 Inf   1.063  0.5579
##  61 castlemart - 51 def1       -1.77e-01 0.1677 Inf  -1.057  0.5605
##  61 castlemart - 52 def1       -2.45e-02 0.1651 Inf  -0.148  0.9526
##  61 castlemart - 53 def1        1.25e-01 0.1662 Inf   0.751  0.7006
##  61 castlemart - 54 def1        1.03e-03 0.1628 Inf   0.006  0.9969
##  61 castlemart - 55 def1        1.33e-01 0.1640 Inf   0.814  0.6734
##  61 castlemart - 56 def1        7.88e-02 0.1687 Inf   0.467  0.8276
##  61 castlemart - 57 def1        8.66e-03 0.1638 Inf   0.053  0.9814
##  61 castlemart - 58 def1       -4.75e-02 0.1630 Inf  -0.291  0.8976
##  61 castlemart - 59 def1        3.03e-01 0.1714 Inf   1.765  0.2774
##  61 castlemart - 60 def1        1.97e-01 0.1650 Inf   1.191  0.5043
##  61 castlemart - 61 def1       -6.69e-02 0.0289 Inf  -2.318  0.1278
##  1 def1 - 2 def1               -2.42e-01 0.1530 Inf  -1.582  0.3449
##  1 def1 - 3 def1               -2.63e-01 0.1565 Inf  -1.680  0.3099
##  1 def1 - 4 def1               -3.82e-01 0.1629 Inf  -2.347  0.1278
##  1 def1 - 5 def1               -4.78e-01 0.1584 Inf  -3.017  0.0372
##  1 def1 - 6 def1               -3.06e-01 0.1581 Inf  -1.937  0.2245
##  1 def1 - 7 def1               -3.14e-01 0.1595 Inf  -1.966  0.2151
##  1 def1 - 8 def1               -7.11e-03 0.1600 Inf  -0.044  0.9832
##  1 def1 - 9 def1               -4.85e-01 0.1616 Inf  -3.003  0.0382
##  1 def1 - 10 def1              -3.01e-01 0.1690 Inf  -1.778  0.2735
##  1 def1 - 11 def1              -4.42e-01 0.1579 Inf  -2.798  0.0579
##  1 def1 - 12 def1              -3.59e-01 0.1558 Inf  -2.306  0.1286
##  1 def1 - 13 def1              -2.79e-01 0.1595 Inf  -1.746  0.2855
##  1 def1 - 14 def1              -6.27e-01 0.1561 Inf  -4.014  0.0035
##  1 def1 - 15 def1              -1.88e-01 0.1576 Inf  -1.192  0.5039
##  1 def1 - 16 def1              -1.44e-01 0.1530 Inf  -0.941  0.6183
##  1 def1 - 17 def1              -2.41e-01 0.1551 Inf  -1.555  0.3564
##  1 def1 - 18 def1              -2.18e-01 0.1614 Inf  -1.351  0.4366
##  1 def1 - 19 def1               3.54e-01 0.1796 Inf   1.972  0.2136
##  1 def1 - 20 def1              -1.65e-01 0.1610 Inf  -1.027  0.5741
##  1 def1 - 22 def1              -3.89e-01 0.1590 Inf  -2.446  0.1095
```

```
##  1 def1 - 23 def1              5.55e-02 0.1746 Inf   0.318  0.8861
##  1 def1 - 24 def1             -3.05e-01 0.1625 Inf  -1.874  0.2412
##  1 def1 - 25 def1             -2.06e-01 0.1628 Inf  -1.263  0.4754
##  1 def1 - 26 def1             -3.09e-01 0.1594 Inf  -1.938  0.2244
##  1 def1 - 27 def1             -4.23e-01 0.1617 Inf  -2.616  0.0812
##  1 def1 - 28 def1             -3.20e-01 0.1612 Inf  -1.984  0.2100
##  1 def1 - 29 def1             -1.25e-01 0.1573 Inf  -0.796  0.6812
##  1 def1 - 30 def1             -1.52e-01 0.1612 Inf  -0.941  0.6183
##  1 def1 - 31 def1             -4.88e-01 0.1528 Inf  -3.190  0.0271
##  1 def1 - 32 def1              9.87e-02 0.1626 Inf   0.607  0.7661
##  1 def1 - 33 def1              1.72e-02 0.1585 Inf   0.108  0.9644
##  1 def1 - 34 def1             -4.58e-01 0.1576 Inf  -2.905  0.0462
##  1 def1 - 35 def1             -2.09e-01 0.1625 Inf  -1.289  0.4636
##  1 def1 - 36 def1             -4.66e-01 0.1596 Inf  -2.919  0.0455
##  1 def1 - 37 def1             -8.55e-02 0.1657 Inf  -0.516  0.8066
##  1 def1 - 38 def1             -1.76e-01 0.1589 Inf  -1.109  0.5391
##  1 def1 - 39 def1             -2.26e-01 0.1744 Inf  -1.294  0.4611
##  1 def1 - 41 def1             -2.29e-01 0.1598 Inf  -1.431  0.3991
##  1 def1 - 42 def1             -3.42e-01 0.1602 Inf  -2.138  0.1674
##  1 def1 - 43 def1             -1.11e-01 0.1579 Inf  -0.704  0.7218
##  1 def1 - 44 def1             -6.27e-01 0.1609 Inf  -3.895  0.0050
##  1 def1 - 45 def1             -2.95e-01 0.1586 Inf  -1.862  0.2449
##  1 def1 - 46 def1             -4.32e-01 0.1580 Inf  -2.734  0.0647
##  1 def1 - 47 def1              4.70e-02 0.1567 Inf   0.300  0.8942
##  1 def1 - 48 def1             -6.71e-01 0.1551 Inf  -4.323  0.0015
##  1 def1 - 49 def1             -3.70e-01 0.1556 Inf  -2.378  0.1218
##  1 def1 - 50 def1             -2.44e-01 0.1606 Inf  -1.519  0.3683
##  1 def1 - 51 def1             -5.97e-01 0.1590 Inf  -3.753  0.0070
##  1 def1 - 52 def1             -4.44e-01 0.1609 Inf  -2.759  0.0622
##  1 def1 - 53 def1             -2.95e-01 0.1583 Inf  -1.862  0.2449
##  1 def1 - 54 def1             -4.19e-01 0.1565 Inf  -2.674  0.0718
##  1 def1 - 55 def1             -2.86e-01 0.1530 Inf  -1.870  0.2426
##  1 def1 - 56 def1             -3.41e-01 0.1656 Inf  -2.058  0.1894
##  1 def1 - 57 def1             -4.11e-01 0.1590 Inf  -2.585  0.0856
##  1 def1 - 58 def1             -4.67e-01 0.1587 Inf  -2.943  0.0432
##  1 def1 - 59 def1             -1.17e-01 0.1653 Inf  -0.707  0.7205
##  1 def1 - 60 def1             -2.23e-01 0.1582 Inf  -1.409  0.4102
##  1 def1 - 61 def1             -4.86e-01 0.1562 Inf  -3.115  0.0310
##  2 def1 - 3 def1              -2.07e-02 0.1583 Inf  -0.131  0.9576
##  2 def1 - 4 def1              -1.40e-01 0.1625 Inf  -0.862  0.6530
##  2 def1 - 5 def1              -2.36e-01 0.1572 Inf  -1.499  0.3755
##  2 def1 - 6 def1              -6.40e-02 0.1586 Inf  -0.404  0.8524
##  2 def1 - 7 def1              -7.15e-02 0.1610 Inf  -0.444  0.8351
##  2 def1 - 8 def1               2.35e-01 0.1638 Inf   1.434  0.3987
##  2 def1 - 9 def1              -2.43e-01 0.1634 Inf  -1.488  0.3792
##  2 def1 - 10 def1             -5.85e-02 0.1696 Inf  -0.345  0.8775
##  2 def1 - 11 def1             -2.00e-01 0.1609 Inf  -1.240  0.4832
##  2 def1 - 12 def1             -1.17e-01 0.1576 Inf  -0.744  0.7042
##  2 def1 - 13 def1             -3.64e-02 0.1601 Inf  -0.227  0.9234
##  2 def1 - 14 def1             -3.85e-01 0.1578 Inf  -2.438  0.1107
##  2 def1 - 15 def1              5.42e-02 0.1577 Inf   0.344  0.8775
##  2 def1 - 16 def1              9.81e-02 0.1511 Inf   0.649  0.7458
##  2 def1 - 17 def1              9.68e-04 0.1563 Inf   0.006  0.9969
##  2 def1 - 18 def1              2.41e-02 0.1613 Inf   0.150  0.9523
##  2 def1 - 19 def1              5.96e-01 0.1795 Inf   3.321  0.0201
##  2 def1 - 20 def1              7.68e-02 0.1594 Inf   0.482  0.8236
```

```
##  2 def1 - 22 def1             -1.47e-01 0.1576 Inf  -0.932  0.6201
##  2 def1 - 23 def1              2.98e-01 0.1749 Inf   1.702  0.3012
##  2 def1 - 24 def1             -6.25e-02 0.1633 Inf  -0.383  0.8615
##  2 def1 - 25 def1              3.65e-02 0.1642 Inf   0.222  0.9261
##  2 def1 - 26 def1             -6.70e-02 0.1622 Inf  -0.413  0.8495
##  2 def1 - 27 def1             -1.81e-01 0.1634 Inf  -1.106  0.5409
##  2 def1 - 28 def1             -7.78e-02 0.1584 Inf  -0.491  0.8204
##  2 def1 - 29 def1              1.17e-01 0.1611 Inf   0.726  0.7138
##  2 def1 - 30 def1              9.05e-02 0.1622 Inf   0.558  0.7894
##  2 def1 - 31 def1             -2.45e-01 0.1536 Inf  -1.598  0.3384
##  2 def1 - 32 def1              3.41e-01 0.1627 Inf   2.095  0.1791
##  2 def1 - 33 def1              2.59e-01 0.1602 Inf   1.618  0.3313
##  2 def1 - 34 def1             -2.16e-01 0.1576 Inf  -1.369  0.4284
##  2 def1 - 35 def1              3.27e-02 0.1643 Inf   0.199  0.9322
##  2 def1 - 36 def1             -2.24e-01 0.1604 Inf  -1.395  0.4159
##  2 def1 - 37 def1              1.57e-01 0.1639 Inf   0.956  0.6105
##  2 def1 - 38 def1              6.60e-02 0.1591 Inf   0.415  0.8495
##  2 def1 - 39 def1              1.65e-02 0.1749 Inf   0.094  0.9701
##  2 def1 - 41 def1              1.34e-02 0.1606 Inf   0.083  0.9741
##  2 def1 - 42 def1             -1.00e-01 0.1612 Inf  -0.622  0.7605
##  2 def1 - 43 def1              1.31e-01 0.1578 Inf   0.830  0.6658
##  2 def1 - 44 def1             -3.84e-01 0.1622 Inf  -2.371  0.1228
##  2 def1 - 45 def1             -5.33e-02 0.1570 Inf  -0.339  0.8797
##  2 def1 - 46 def1             -1.90e-01 0.1623 Inf  -1.169  0.5151
##  2 def1 - 47 def1              2.89e-01 0.1587 Inf   1.822  0.2593
##  2 def1 - 48 def1             -4.28e-01 0.1581 Inf  -2.711  0.0669
##  2 def1 - 49 def1             -1.28e-01 0.1568 Inf  -0.815  0.6730
##  2 def1 - 50 def1             -1.85e-03 0.1605 Inf  -0.012  0.9958
##  2 def1 - 51 def1             -3.55e-01 0.1622 Inf  -2.187  0.1557
##  2 def1 - 52 def1             -2.02e-01 0.1597 Inf  -1.264  0.4751
##  2 def1 - 53 def1             -5.26e-02 0.1585 Inf  -0.332  0.8816
##  2 def1 - 54 def1             -1.76e-01 0.1568 Inf  -1.125  0.5335
##  2 def1 - 55 def1             -4.40e-02 0.1577 Inf  -0.279  0.9021
##  2 def1 - 56 def1             -9.87e-02 0.1649 Inf  -0.598  0.7691
##  2 def1 - 57 def1             -1.69e-01 0.1567 Inf  -1.077  0.5519
##  2 def1 - 58 def1             -2.25e-01 0.1594 Inf  -1.411  0.4094
##  2 def1 - 59 def1              1.25e-01 0.1662 Inf   0.753  0.7001
##  2 def1 - 60 def1              1.91e-02 0.1574 Inf   0.122  0.9601
##  2 def1 - 61 def1             -2.44e-01 0.1567 Inf  -1.559  0.3542
##  3 def1 - 4 def1              -1.19e-01 0.1655 Inf  -0.722  0.7155
##  3 def1 - 5 def1              -2.15e-01 0.1608 Inf  -1.336  0.4429
##  3 def1 - 6 def1              -4.33e-02 0.1621 Inf  -0.267  0.9066
##  3 def1 - 7 def1              -5.08e-02 0.1624 Inf  -0.313  0.8891
##  3 def1 - 8 def1               2.56e-01 0.1644 Inf   1.555  0.3564
##  3 def1 - 9 def1              -2.22e-01 0.1639 Inf  -1.357  0.4341
##  3 def1 - 10 def1             -3.78e-02 0.1722 Inf  -0.219  0.9267
##  3 def1 - 11 def1             -1.79e-01 0.1613 Inf  -1.109  0.5391
##  3 def1 - 12 def1             -9.65e-02 0.1601 Inf  -0.602  0.7683
##  3 def1 - 13 def1             -1.57e-02 0.1595 Inf  -0.098  0.9684
##  3 def1 - 14 def1             -3.64e-01 0.1624 Inf  -2.241  0.1425
##  3 def1 - 15 def1              7.50e-02 0.1633 Inf   0.459  0.8291
##  3 def1 - 16 def1              1.19e-01 0.1541 Inf   0.771  0.6918
##  3 def1 - 17 def1              2.17e-02 0.1603 Inf   0.135  0.9561
##  3 def1 - 18 def1              4.49e-02 0.1665 Inf   0.270  0.9057
##  3 def1 - 19 def1              6.17e-01 0.1795 Inf   3.438  0.0151
##  3 def1 - 20 def1              9.75e-02 0.1634 Inf   0.597  0.7693
```

```
##  3 def1 - 22 def1             -1.26e-01 0.1605 Inf  -0.786  0.6856
##  3 def1 - 23 def1              3.18e-01 0.1753 Inf   1.817  0.2603
##  3 def1 - 24 def1             -4.17e-02 0.1645 Inf  -0.254  0.9117
##  3 def1 - 25 def1              5.72e-02 0.1639 Inf   0.349  0.8757
##  3 def1 - 26 def1             -4.62e-02 0.1615 Inf  -0.286  0.8984
##  3 def1 - 27 def1             -1.60e-01 0.1650 Inf  -0.969  0.6016
##  3 def1 - 28 def1             -5.70e-02 0.1624 Inf  -0.351  0.8750
##  3 def1 - 29 def1              1.38e-01 0.1623 Inf   0.848  0.6578
##  3 def1 - 30 def1              1.11e-01 0.1634 Inf   0.680  0.7324
##  3 def1 - 31 def1             -2.25e-01 0.1569 Inf  -1.432  0.3991
##  3 def1 - 32 def1              3.62e-01 0.1652 Inf   2.189  0.1553
##  3 def1 - 33 def1              2.80e-01 0.1602 Inf   1.748  0.2848
##  3 def1 - 34 def1             -1.95e-01 0.1584 Inf  -1.230  0.4878
##  3 def1 - 35 def1              5.34e-02 0.1655 Inf   0.323  0.8848
##  3 def1 - 36 def1             -2.03e-01 0.1637 Inf  -1.241  0.4832
##  3 def1 - 37 def1              1.77e-01 0.1691 Inf   1.049  0.5647
##  3 def1 - 38 def1              8.67e-02 0.1613 Inf   0.538  0.7995
##  3 def1 - 39 def1              3.73e-02 0.1790 Inf   0.208  0.9301
##  3 def1 - 41 def1              3.41e-02 0.1602 Inf   0.213  0.9288
##  3 def1 - 42 def1             -7.96e-02 0.1599 Inf  -0.497  0.8159
##  3 def1 - 43 def1              1.52e-01 0.1622 Inf   0.936  0.6201
##  3 def1 - 44 def1             -3.64e-01 0.1655 Inf  -2.198  0.1540
##  3 def1 - 45 def1             -3.25e-02 0.1617 Inf  -0.201  0.9314
##  3 def1 - 46 def1             -1.69e-01 0.1633 Inf  -1.035  0.5718
##  3 def1 - 47 def1              3.10e-01 0.1614 Inf   1.920  0.2279
##  3 def1 - 48 def1             -4.08e-01 0.1594 Inf  -2.558  0.0901
##  3 def1 - 49 def1             -1.07e-01 0.1606 Inf  -0.667  0.7388
##  3 def1 - 50 def1              1.89e-02 0.1589 Inf   0.119  0.9609
##  3 def1 - 51 def1             -3.34e-01 0.1630 Inf  -2.049  0.1921
##  3 def1 - 52 def1             -1.81e-01 0.1644 Inf  -1.102  0.5420
##  3 def1 - 53 def1             -3.19e-02 0.1624 Inf  -0.196  0.9332
##  3 def1 - 54 def1             -1.56e-01 0.1564 Inf  -0.995  0.5899
##  3 def1 - 55 def1             -2.33e-02 0.1576 Inf  -0.148  0.9526
##  3 def1 - 56 def1             -7.79e-02 0.1657 Inf  -0.470  0.8276
##  3 def1 - 57 def1             -1.48e-01 0.1618 Inf  -0.915  0.6274
##  3 def1 - 58 def1             -2.04e-01 0.1630 Inf  -1.253  0.4794
##  3 def1 - 59 def1              1.46e-01 0.1679 Inf   0.869  0.6505
##  3 def1 - 60 def1              3.99e-02 0.1606 Inf   0.248  0.9136
##  3 def1 - 61 def1             -2.24e-01 0.1614 Inf  -1.385  0.4214
##  4 def1 - 5 def1              -9.55e-02 0.1637 Inf  -0.583  0.7748
##  4 def1 - 6 def1               7.61e-02 0.1664 Inf   0.457  0.8295
##  4 def1 - 7 def1               6.87e-02 0.1672 Inf   0.411  0.8501
##  4 def1 - 8 def1               3.75e-01 0.1671 Inf   2.245  0.1416
##  4 def1 - 9 def1              -1.03e-01 0.1670 Inf  -0.617  0.7625
##  4 def1 - 10 def1              8.17e-02 0.1737 Inf   0.470  0.8276
##  4 def1 - 11 def1             -5.94e-02 0.1649 Inf  -0.360  0.8724
##  4 def1 - 12 def1              2.30e-02 0.1608 Inf   0.143  0.9536
##  4 def1 - 13 def1              1.04e-01 0.1633 Inf   0.636  0.7540
##  4 def1 - 14 def1             -2.45e-01 0.1648 Inf  -1.484  0.3806
##  4 def1 - 15 def1              1.94e-01 0.1671 Inf   1.164  0.5168
##  4 def1 - 16 def1              2.38e-01 0.1597 Inf   1.492  0.3785
##  4 def1 - 17 def1              1.41e-01 0.1655 Inf   0.853  0.6569
##  4 def1 - 18 def1              1.64e-01 0.1679 Inf   0.978  0.5974
##  4 def1 - 19 def1              7.36e-01 0.1857 Inf   3.965  0.0041
##  4 def1 - 20 def1              2.17e-01 0.1692 Inf   1.283  0.4667
##  4 def1 - 22 def1             -6.68e-03 0.1650 Inf  -0.040  0.9851
```

```
##  4 def1 - 23 def1              4.38e-01 0.1807 Inf   2.423  0.1135
##  4 def1 - 24 def1              7.77e-02 0.1677 Inf   0.463  0.8288
##  4 def1 - 25 def1              1.77e-01 0.1657 Inf   1.066  0.5566
##  4 def1 - 26 def1              7.32e-02 0.1701 Inf   0.430  0.8431
##  4 def1 - 27 def1             -4.05e-02 0.1686 Inf  -0.240  0.9165
##  4 def1 - 28 def1              6.24e-02 0.1695 Inf   0.368  0.8693
##  4 def1 - 29 def1              2.57e-01 0.1674 Inf   1.536  0.3631
##  4 def1 - 30 def1              2.31e-01 0.1651 Inf   1.397  0.4153
##  4 def1 - 31 def1             -1.05e-01 0.1584 Inf  -0.665  0.7396
##  4 def1 - 32 def1              4.81e-01 0.1646 Inf   2.923  0.0453
##  4 def1 - 33 def1              3.99e-01 0.1651 Inf   2.420  0.1141
##  4 def1 - 34 def1             -7.55e-02 0.1621 Inf  -0.466  0.8277
##  4 def1 - 35 def1              1.73e-01 0.1702 Inf   1.015  0.5793
##  4 def1 - 36 def1             -8.36e-02 0.1676 Inf  -0.499  0.8151
##  4 def1 - 37 def1              2.97e-01 0.1714 Inf   1.731  0.2908
##  4 def1 - 38 def1              2.06e-01 0.1643 Inf   1.255  0.4792
##  4 def1 - 39 def1              1.57e-01 0.1822 Inf   0.860  0.6538
##  4 def1 - 41 def1              1.54e-01 0.1642 Inf   0.935  0.6201
##  4 def1 - 42 def1              3.99e-02 0.1620 Inf   0.246  0.9146
##  4 def1 - 43 def1              2.71e-01 0.1672 Inf   1.622  0.3307
##  4 def1 - 44 def1             -2.44e-01 0.1696 Inf  -1.440  0.3964
##  4 def1 - 45 def1              8.69e-02 0.1641 Inf   0.529  0.8013
##  4 def1 - 46 def1             -4.96e-02 0.1680 Inf  -0.295  0.8960
##  4 def1 - 47 def1              4.29e-01 0.1637 Inf   2.622  0.0804
##  4 def1 - 48 def1             -2.88e-01 0.1667 Inf  -1.730  0.2908
##  4 def1 - 49 def1              1.24e-02 0.1663 Inf   0.074  0.9766
##  4 def1 - 50 def1              1.38e-01 0.1675 Inf   0.826  0.6680
##  4 def1 - 51 def1             -2.15e-01 0.1683 Inf  -1.275  0.4697
##  4 def1 - 52 def1             -6.18e-02 0.1676 Inf  -0.369  0.8693
##  4 def1 - 53 def1              8.75e-02 0.1653 Inf   0.530  0.8013
##  4 def1 - 54 def1             -3.62e-02 0.1616 Inf  -0.224  0.9252
##  4 def1 - 55 def1              9.62e-02 0.1634 Inf   0.589  0.7728
##  4 def1 - 56 def1              4.15e-02 0.1681 Inf   0.247  0.9145
##  4 def1 - 57 def1             -2.86e-02 0.1663 Inf  -0.172  0.9420
##  4 def1 - 58 def1             -8.48e-02 0.1647 Inf  -0.515  0.8066
##  4 def1 - 59 def1              2.65e-01 0.1726 Inf   1.538  0.3623
##  4 def1 - 60 def1              1.59e-01 0.1643 Inf   0.970  0.6016
##  4 def1 - 61 def1             -1.04e-01 0.1647 Inf  -0.632  0.7555
##  5 def1 - 6 def1               1.72e-01 0.1619 Inf   1.060  0.5591
##  5 def1 - 7 def1               1.64e-01 0.1592 Inf   1.031  0.5734
##  5 def1 - 8 def1               4.71e-01 0.1665 Inf   2.826  0.0551
##  5 def1 - 9 def1              -7.48e-03 0.1662 Inf  -0.045  0.9832
##  5 def1 - 10 def1              1.77e-01 0.1725 Inf   1.027  0.5741
##  5 def1 - 11 def1              3.61e-02 0.1635 Inf   0.221  0.9263
##  5 def1 - 12 def1              1.18e-01 0.1610 Inf   0.736  0.7075
##  5 def1 - 13 def1              1.99e-01 0.1604 Inf   1.242  0.4832
##  5 def1 - 14 def1             -1.49e-01 0.1614 Inf  -0.923  0.6229
##  5 def1 - 15 def1              2.90e-01 0.1616 Inf   1.794  0.2680
##  5 def1 - 16 def1              3.34e-01 0.1556 Inf   2.146  0.1648
##  5 def1 - 17 def1              2.37e-01 0.1623 Inf   1.458  0.3923
##  5 def1 - 18 def1              2.60e-01 0.1654 Inf   1.571  0.3508
##  5 def1 - 19 def1              8.32e-01 0.1846 Inf   4.506  0.0010
##  5 def1 - 20 def1              3.12e-01 0.1664 Inf   1.878  0.2399
##  5 def1 - 22 def1              8.88e-02 0.1615 Inf   0.550  0.7918
##  5 def1 - 23 def1              5.33e-01 0.1743 Inf   3.060  0.0340
##  5 def1 - 24 def1              1.73e-01 0.1626 Inf   1.065  0.5566
```

```
##  5 def1 - 25 def1              2.72e-01 0.1639 Inf   1.660  0.3172
##  5 def1 - 26 def1              1.69e-01 0.1664 Inf   1.014  0.5801
##  5 def1 - 27 def1              5.50e-02 0.1626 Inf   0.338  0.8797
##  5 def1 - 28 def1              1.58e-01 0.1637 Inf   0.964  0.6047
##  5 def1 - 29 def1              3.53e-01 0.1631 Inf   2.163  0.1607
##  5 def1 - 30 def1              3.26e-01 0.1647 Inf   1.980  0.2106
##  5 def1 - 31 def1             -9.76e-03 0.1558 Inf  -0.063  0.9790
##  5 def1 - 32 def1              5.77e-01 0.1652 Inf   3.491  0.0137
##  5 def1 - 33 def1              4.95e-01 0.1623 Inf   3.050  0.0344
##  5 def1 - 34 def1              2.00e-02 0.1614 Inf   0.124  0.9596
##  5 def1 - 35 def1              2.68e-01 0.1682 Inf   1.595  0.3400
##  5 def1 - 36 def1              1.19e-02 0.1617 Inf   0.073  0.9766
##  5 def1 - 37 def1              3.92e-01 0.1680 Inf   2.335  0.1278
##  5 def1 - 38 def1              3.02e-01 0.1603 Inf   1.882  0.2384
##  5 def1 - 39 def1              2.52e-01 0.1794 Inf   1.405  0.4114
##  5 def1 - 41 def1              2.49e-01 0.1623 Inf   1.535  0.3632
##  5 def1 - 42 def1              1.35e-01 0.1608 Inf   0.842  0.6612
##  5 def1 - 43 def1              3.67e-01 0.1640 Inf   2.236  0.1437
##  5 def1 - 44 def1             -1.49e-01 0.1661 Inf  -0.896  0.6357
##  5 def1 - 45 def1              1.82e-01 0.1614 Inf   1.130  0.5320
##  5 def1 - 46 def1              4.59e-02 0.1663 Inf   0.276  0.9037
##  5 def1 - 47 def1              5.25e-01 0.1617 Inf   3.246  0.0243
##  5 def1 - 48 def1             -1.93e-01 0.1636 Inf  -1.179  0.5106
##  5 def1 - 49 def1              1.08e-01 0.1588 Inf   0.679  0.7326
##  5 def1 - 50 def1              2.34e-01 0.1629 Inf   1.436  0.3981
##  5 def1 - 51 def1             -1.19e-01 0.1666 Inf  -0.715  0.7189
##  5 def1 - 52 def1              3.37e-02 0.1617 Inf   0.209  0.9301
##  5 def1 - 53 def1              1.83e-01 0.1617 Inf   1.132  0.5317
##  5 def1 - 54 def1              5.93e-02 0.1579 Inf   0.375  0.8652
##  5 def1 - 55 def1              1.92e-01 0.1600 Inf   1.198  0.5015
##  5 def1 - 56 def1              1.37e-01 0.1667 Inf   0.822  0.6698
##  5 def1 - 57 def1              6.69e-02 0.1619 Inf   0.413  0.8495
##  5 def1 - 58 def1              1.07e-02 0.1608 Inf   0.067  0.9784
##  5 def1 - 59 def1              3.61e-01 0.1695 Inf   2.129  0.1695
##  5 def1 - 60 def1              2.55e-01 0.1573 Inf   1.620  0.3308
##  5 def1 - 61 def1             -8.67e-03 0.1626 Inf  -0.053  0.9814
##  6 def1 - 7 def1              -7.46e-03 0.1628 Inf  -0.046  0.9831
##  6 def1 - 8 def1               2.99e-01 0.1674 Inf   1.787  0.2711
##  6 def1 - 9 def1              -1.79e-01 0.1642 Inf  -1.091  0.5457
##  6 def1 - 10 def1              5.56e-03 0.1677 Inf   0.033  0.9879
##  6 def1 - 11 def1             -1.36e-01 0.1629 Inf  -0.832  0.6657
##  6 def1 - 12 def1             -5.31e-02 0.1606 Inf  -0.331  0.8818
##  6 def1 - 13 def1              2.76e-02 0.1619 Inf   0.171  0.9429
##  6 def1 - 14 def1             -3.21e-01 0.1595 Inf  -2.011  0.2022
##  6 def1 - 15 def1              1.18e-01 0.1611 Inf   0.734  0.7083
##  6 def1 - 16 def1              1.62e-01 0.1576 Inf   1.029  0.5737
##  6 def1 - 17 def1              6.50e-02 0.1590 Inf   0.409  0.8504
##  6 def1 - 18 def1              8.82e-02 0.1660 Inf   0.531  0.8013
##  6 def1 - 19 def1              6.60e-01 0.1857 Inf   3.556  0.0123
##  6 def1 - 20 def1              1.41e-01 0.1648 Inf   0.855  0.6560
##  6 def1 - 22 def1             -8.28e-02 0.1606 Inf  -0.516  0.8066
##  6 def1 - 23 def1              3.62e-01 0.1771 Inf   2.043  0.1933
##  6 def1 - 24 def1              1.57e-03 0.1644 Inf   0.010  0.9961
##  6 def1 - 25 def1              1.01e-01 0.1678 Inf   0.599  0.7691
##  6 def1 - 26 def1             -2.92e-03 0.1669 Inf  -0.018  0.9939
##  6 def1 - 27 def1             -1.17e-01 0.1654 Inf  -0.705  0.7214
```

```
##  6 def1 - 28 def1             -1.37e-02 0.1651 Inf  -0.083  0.9741
##  6 def1 - 29 def1              1.81e-01 0.1646 Inf   1.100  0.5430
##  6 def1 - 30 def1              1.55e-01 0.1658 Inf   0.932  0.6201
##  6 def1 - 31 def1             -1.81e-01 0.1580 Inf  -1.148  0.5248
##  6 def1 - 32 def1              4.05e-01 0.1675 Inf   2.418  0.1142
##  6 def1 - 33 def1              3.23e-01 0.1605 Inf   2.014  0.2015
##  6 def1 - 34 def1             -1.52e-01 0.1616 Inf  -0.938  0.6194
##  6 def1 - 35 def1              9.67e-02 0.1688 Inf   0.573  0.7819
##  6 def1 - 36 def1             -1.60e-01 0.1620 Inf  -0.986  0.5949
##  6 def1 - 37 def1              2.21e-01 0.1709 Inf   1.291  0.4626
##  6 def1 - 38 def1              1.30e-01 0.1631 Inf   0.797  0.6812
##  6 def1 - 39 def1              8.06e-02 0.1785 Inf   0.451  0.8311
##  6 def1 - 41 def1              7.74e-02 0.1612 Inf   0.480  0.8236
##  6 def1 - 42 def1             -3.63e-02 0.1637 Inf  -0.221  0.9261
##  6 def1 - 43 def1              1.95e-01 0.1643 Inf   1.187  0.5071
##  6 def1 - 44 def1             -3.20e-01 0.1668 Inf  -1.922  0.2276
##  6 def1 - 45 def1              1.08e-02 0.1635 Inf   0.066  0.9784
##  6 def1 - 46 def1             -1.26e-01 0.1661 Inf  -0.757  0.6995
##  6 def1 - 47 def1              3.53e-01 0.1619 Inf   2.181  0.1569
##  6 def1 - 48 def1             -3.64e-01 0.1614 Inf  -2.259  0.1395
##  6 def1 - 49 def1             -6.38e-02 0.1613 Inf  -0.395  0.8558
##  6 def1 - 50 def1              6.22e-02 0.1626 Inf   0.383  0.8615
##  6 def1 - 51 def1             -2.91e-01 0.1676 Inf  -1.734  0.2905
##  6 def1 - 52 def1             -1.38e-01 0.1557 Inf  -0.885  0.6420
##  6 def1 - 53 def1              1.14e-02 0.1609 Inf   0.071  0.9766
##  6 def1 - 54 def1             -1.12e-01 0.1606 Inf  -0.700  0.7227
##  6 def1 - 55 def1              2.00e-02 0.1580 Inf   0.127  0.9590
##  6 def1 - 56 def1             -3.46e-02 0.1699 Inf  -0.204  0.9312
##  6 def1 - 57 def1             -1.05e-01 0.1586 Inf  -0.661  0.7410
##  6 def1 - 58 def1             -1.61e-01 0.1603 Inf  -1.004  0.5858
##  6 def1 - 59 def1              1.89e-01 0.1669 Inf   1.134  0.5314
##  6 def1 - 60 def1              8.32e-02 0.1607 Inf   0.518  0.8066
##  6 def1 - 61 def1             -1.80e-01 0.1613 Inf  -1.118  0.5359
##  7 def1 - 8 def1               3.07e-01 0.1675 Inf   1.830  0.2562
##  7 def1 - 9 def1              -1.72e-01 0.1673 Inf  -1.026  0.5741
##  7 def1 - 10 def1              1.30e-02 0.1737 Inf   0.075  0.9766
##  7 def1 - 11 def1             -1.28e-01 0.1637 Inf  -0.782  0.6874
##  7 def1 - 12 def1             -4.57e-02 0.1597 Inf  -0.286  0.8984
##  7 def1 - 13 def1              3.51e-02 0.1628 Inf   0.216  0.9278
##  7 def1 - 14 def1             -3.13e-01 0.1638 Inf  -1.913  0.2300
##  7 def1 - 15 def1              1.26e-01 0.1639 Inf   0.767  0.6945
##  7 def1 - 16 def1              1.70e-01 0.1566 Inf   1.083  0.5492
##  7 def1 - 17 def1              7.25e-02 0.1643 Inf   0.441  0.8371
##  7 def1 - 18 def1              9.56e-02 0.1680 Inf   0.569  0.7836
##  7 def1 - 19 def1              6.68e-01 0.1857 Inf   3.595  0.0112
##  7 def1 - 20 def1              1.48e-01 0.1650 Inf   0.899  0.6345
##  7 def1 - 22 def1             -7.53e-02 0.1609 Inf  -0.468  0.8276
##  7 def1 - 23 def1              3.69e-01 0.1760 Inf   2.097  0.1788
##  7 def1 - 24 def1              9.03e-03 0.1661 Inf   0.054  0.9814
##  7 def1 - 25 def1              1.08e-01 0.1651 Inf   0.654  0.7441
##  7 def1 - 26 def1              4.53e-03 0.1656 Inf   0.027  0.9904
##  7 def1 - 27 def1             -1.09e-01 0.1639 Inf  -0.666  0.7388
##  7 def1 - 28 def1             -6.28e-03 0.1670 Inf  -0.038  0.9868
##  7 def1 - 29 def1              1.88e-01 0.1580 Inf   1.193  0.5037
##  7 def1 - 30 def1              1.62e-01 0.1627 Inf   0.995  0.5899
##  7 def1 - 31 def1             -1.74e-01 0.1530 Inf  -1.137  0.5302
```

```
##  7 def1 - 32 def1              4.12e-01 0.1668 Inf   2.472  0.1041
##  7 def1 - 33 def1              3.31e-01 0.1643 Inf   2.013  0.2016
##  7 def1 - 34 def1             -1.44e-01 0.1624 Inf  -0.888  0.6404
##  7 def1 - 35 def1              1.04e-01 0.1662 Inf   0.627  0.7586
##  7 def1 - 36 def1             -1.52e-01 0.1570 Inf  -0.970  0.6015
##  7 def1 - 37 def1              2.28e-01 0.1715 Inf   1.330  0.4454
##  7 def1 - 38 def1              1.37e-01 0.1635 Inf   0.841  0.6614
##  7 def1 - 39 def1              8.80e-02 0.1780 Inf   0.495  0.8180
##  7 def1 - 41 def1              8.49e-02 0.1646 Inf   0.516  0.8066
##  7 def1 - 42 def1             -2.88e-02 0.1645 Inf  -0.175  0.9409
##  7 def1 - 43 def1              2.03e-01 0.1647 Inf   1.230  0.4880
##  7 def1 - 44 def1             -3.13e-01 0.1628 Inf  -1.923  0.2276
##  7 def1 - 45 def1              1.82e-02 0.1625 Inf   0.112  0.9631
##  7 def1 - 46 def1             -1.18e-01 0.1670 Inf  -0.708  0.7205
##  7 def1 - 47 def1              3.61e-01 0.1624 Inf   2.221  0.1481
##  7 def1 - 48 def1             -3.57e-01 0.1645 Inf  -2.170  0.1598
##  7 def1 - 49 def1             -5.63e-02 0.1589 Inf  -0.354  0.8750
##  7 def1 - 50 def1              6.97e-02 0.1625 Inf   0.429  0.8436
##  7 def1 - 51 def1             -2.83e-01 0.1655 Inf  -1.711  0.2977
##  7 def1 - 52 def1             -1.30e-01 0.1646 Inf  -0.793  0.6822
##  7 def1 - 53 def1              1.89e-02 0.1622 Inf   0.116  0.9621
##  7 def1 - 54 def1             -1.05e-01 0.1594 Inf  -0.658  0.7421
##  7 def1 - 55 def1              2.75e-02 0.1597 Inf   0.172  0.9420
##  7 def1 - 56 def1             -2.72e-02 0.1674 Inf  -0.162  0.9470
##  7 def1 - 57 def1             -9.73e-02 0.1652 Inf  -0.589  0.7728
##  7 def1 - 58 def1             -1.53e-01 0.1637 Inf  -0.938  0.6194
##  7 def1 - 59 def1              1.97e-01 0.1702 Inf   1.155  0.5208
##  7 def1 - 60 def1              9.07e-02 0.1605 Inf   0.565  0.7861
##  7 def1 - 61 def1             -1.73e-01 0.1650 Inf  -1.047  0.5649
##  8 def1 - 9 def1              -4.78e-01 0.1690 Inf  -2.829  0.0551
##  8 def1 - 10 def1             -2.93e-01 0.1763 Inf  -1.665  0.3154
##  8 def1 - 11 def1             -4.35e-01 0.1603 Inf  -2.711  0.0669
##  8 def1 - 12 def1             -3.52e-01 0.1635 Inf  -2.154  0.1628
##  8 def1 - 13 def1             -2.71e-01 0.1659 Inf  -1.636  0.3257
##  8 def1 - 14 def1             -6.20e-01 0.1669 Inf  -3.714  0.0080
##  8 def1 - 15 def1             -1.81e-01 0.1662 Inf  -1.087  0.5473
##  8 def1 - 16 def1             -1.37e-01 0.1617 Inf  -0.846  0.6583
##  8 def1 - 17 def1             -2.34e-01 0.1654 Inf  -1.415  0.4080
##  8 def1 - 18 def1             -2.11e-01 0.1673 Inf  -1.260  0.4768
##  8 def1 - 19 def1              3.61e-01 0.1857 Inf   1.945  0.2223
##  8 def1 - 20 def1             -1.58e-01 0.1700 Inf  -0.930  0.6208
##  8 def1 - 22 def1             -3.82e-01 0.1654 Inf  -2.309  0.1286
##  8 def1 - 23 def1              6.27e-02 0.1811 Inf   0.346  0.8771
##  8 def1 - 24 def1             -2.97e-01 0.1680 Inf  -1.771  0.2757
##  8 def1 - 25 def1             -1.99e-01 0.1644 Inf  -1.208  0.4977
##  8 def1 - 26 def1             -3.02e-01 0.1683 Inf  -1.794  0.2681
##  8 def1 - 27 def1             -4.16e-01 0.1706 Inf  -2.437  0.1108
##  8 def1 - 28 def1             -3.13e-01 0.1695 Inf  -1.846  0.2506
##  8 def1 - 29 def1             -1.18e-01 0.1664 Inf  -0.709  0.7205
##  8 def1 - 30 def1             -1.45e-01 0.1599 Inf  -0.904  0.6327
##  8 def1 - 31 def1             -4.80e-01 0.1601 Inf  -3.001  0.0382
##  8 def1 - 32 def1              1.06e-01 0.1669 Inf   0.634  0.7545
##  8 def1 - 33 def1              2.43e-02 0.1655 Inf   0.147  0.9531
##  8 def1 - 34 def1             -4.51e-01 0.1647 Inf  -2.736  0.0646
##  8 def1 - 35 def1             -2.02e-01 0.1689 Inf  -1.198  0.5015
##  8 def1 - 36 def1             -4.59e-01 0.1667 Inf  -2.752  0.0628
```

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##  8 def1 - 37 def1             -7.84e-02 0.1707 Inf  -0.459  0.8291
##  8 def1 - 38 def1             -1.69e-01 0.1614 Inf  -1.047  0.5649
##  8 def1 - 39 def1             -2.18e-01 0.1824 Inf  -1.198  0.5015
##  8 def1 - 41 def1             -2.22e-01 0.1663 Inf  -1.333  0.4448
##  8 def1 - 42 def1             -3.35e-01 0.1624 Inf  -2.064  0.1878
##  8 def1 - 43 def1             -1.04e-01 0.1675 Inf  -0.621  0.7610
##  8 def1 - 44 def1             -6.19e-01 0.1700 Inf  -3.645  0.0096
##  8 def1 - 45 def1             -2.88e-01 0.1669 Inf  -1.727  0.2916
##  8 def1 - 46 def1             -4.25e-01 0.1653 Inf  -2.569  0.0881
##  8 def1 - 47 def1              5.41e-02 0.1656 Inf   0.327  0.8829
##  8 def1 - 48 def1             -6.63e-01 0.1608 Inf  -4.127  0.0026
##  8 def1 - 49 def1             -3.63e-01 0.1668 Inf  -2.174  0.1585
##  8 def1 - 50 def1             -2.37e-01 0.1678 Inf  -1.411  0.4094
##  8 def1 - 51 def1             -5.90e-01 0.1699 Inf  -3.470  0.0144
##  8 def1 - 52 def1             -4.37e-01 0.1689 Inf  -2.587  0.0856
##  8 def1 - 53 def1             -2.88e-01 0.1667 Inf  -1.726  0.2919
##  8 def1 - 54 def1             -4.11e-01 0.1627 Inf  -2.529  0.0948
##  8 def1 - 55 def1             -2.79e-01 0.1610 Inf  -1.733  0.2907
##  8 def1 - 56 def1             -3.34e-01 0.1683 Inf  -1.983  0.2104
##  8 def1 - 57 def1             -4.04e-01 0.1676 Inf  -2.409  0.1162
##  8 def1 - 58 def1             -4.60e-01 0.1666 Inf  -2.760  0.0622
##  8 def1 - 59 def1             -1.10e-01 0.1729 Inf  -0.635  0.7540
##  8 def1 - 60 def1             -2.16e-01 0.1663 Inf  -1.298  0.4591
##  8 def1 - 61 def1             -4.79e-01 0.1657 Inf  -2.893  0.0475
##  9 def1 - 10 def1              1.85e-01 0.1691 Inf   1.092  0.5457
##  9 def1 - 11 def1              4.36e-02 0.1657 Inf   0.263  0.9083
##  9 def1 - 12 def1              1.26e-01 0.1624 Inf   0.776  0.6900
##  9 def1 - 13 def1              2.07e-01 0.1624 Inf   1.273  0.4707
##  9 def1 - 14 def1             -1.42e-01 0.1654 Inf  -0.856  0.6560
##  9 def1 - 15 def1              2.97e-01 0.1636 Inf   1.818  0.2599
##  9 def1 - 16 def1              3.41e-01 0.1611 Inf   2.119  0.1725
##  9 def1 - 17 def1              2.44e-01 0.1662 Inf   1.469  0.3878
##  9 def1 - 18 def1              2.67e-01 0.1701 Inf   1.572  0.3504
##  9 def1 - 19 def1              8.39e-01 0.1837 Inf   4.569  0.0009
##  9 def1 - 20 def1              3.20e-01 0.1692 Inf   1.891  0.2366
##  9 def1 - 22 def1              9.63e-02 0.1647 Inf   0.585  0.7742
##  9 def1 - 23 def1              5.41e-01 0.1797 Inf   3.009  0.0378
##  9 def1 - 24 def1              1.81e-01 0.1679 Inf   1.076  0.5522
##  9 def1 - 25 def1              2.80e-01 0.1690 Inf   1.655  0.3188
##  9 def1 - 26 def1              1.76e-01 0.1699 Inf   1.037  0.5706
##  9 def1 - 27 def1              6.24e-02 0.1703 Inf   0.367  0.8698
##  9 def1 - 28 def1              1.65e-01 0.1691 Inf   0.978  0.5974
##  9 def1 - 29 def1              3.60e-01 0.1664 Inf   2.164  0.1607
##  9 def1 - 30 def1              3.34e-01 0.1654 Inf   2.017  0.2009
##  9 def1 - 31 def1             -2.28e-03 0.1590 Inf  -0.014  0.9952
##  9 def1 - 32 def1              5.84e-01 0.1699 Inf   3.438  0.0151
##  9 def1 - 33 def1              5.02e-01 0.1638 Inf   3.067  0.0338
##  9 def1 - 34 def1              2.75e-02 0.1614 Inf   0.170  0.9430
##  9 def1 - 35 def1              2.76e-01 0.1702 Inf   1.620  0.3308
##  9 def1 - 36 def1              1.94e-02 0.1667 Inf   0.116  0.9621
##  9 def1 - 37 def1              4.00e-01 0.1739 Inf   2.299  0.1300
##  9 def1 - 38 def1              3.09e-01 0.1666 Inf   1.856  0.2462
##  9 def1 - 39 def1              2.60e-01 0.1828 Inf   1.420  0.4058
##  9 def1 - 41 def1              2.57e-01 0.1656 Inf   1.549  0.3582
##  9 def1 - 42 def1              1.43e-01 0.1651 Inf   0.865  0.6523
##  9 def1 - 43 def1              3.74e-01 0.1672 Inf   2.238  0.1434
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##  9 def1 - 44 def1             -1.41e-01 0.1695 Inf  -0.834  0.6646
##  9 def1 - 45 def1              1.90e-01 0.1626 Inf   1.168  0.5153
##  9 def1 - 46 def1              5.34e-02 0.1662 Inf   0.321  0.8852
##  9 def1 - 47 def1              5.32e-01 0.1638 Inf   3.249  0.0243
##  9 def1 - 48 def1             -1.85e-01 0.1651 Inf  -1.122  0.5347
##  9 def1 - 49 def1              1.15e-01 0.1660 Inf   0.695  0.7253
##  9 def1 - 50 def1              2.41e-01 0.1673 Inf   1.443  0.3962
##  9 def1 - 51 def1             -1.12e-01 0.1686 Inf  -0.662  0.7410
##  9 def1 - 52 def1              4.12e-02 0.1651 Inf   0.250  0.9131
##  9 def1 - 53 def1              1.91e-01 0.1638 Inf   1.163  0.5168
##  9 def1 - 54 def1              6.67e-02 0.1601 Inf   0.417  0.8487
##  9 def1 - 55 def1              1.99e-01 0.1627 Inf   1.224  0.4901
##  9 def1 - 56 def1              1.44e-01 0.1700 Inf   0.850  0.6576
##  9 def1 - 57 def1              7.44e-02 0.1640 Inf   0.453  0.8311
##  9 def1 - 58 def1              1.82e-02 0.1633 Inf   0.112  0.9631
##  9 def1 - 59 def1              3.68e-01 0.1689 Inf   2.181  0.1569
##  9 def1 - 60 def1              2.62e-01 0.1636 Inf   1.603  0.3368
##  9 def1 - 61 def1             -1.19e-03 0.1642 Inf  -0.007  0.9969
##  10 def1 - 11 def1            -1.41e-01 0.1732 Inf  -0.815  0.6730
##  10 def1 - 12 def1            -5.87e-02 0.1690 Inf  -0.347  0.8764
##  10 def1 - 13 def1             2.21e-02 0.1724 Inf   0.128  0.9585
##  10 def1 - 14 def1            -3.26e-01 0.1721 Inf  -1.896  0.2350
##  10 def1 - 15 def1             1.13e-01 0.1663 Inf   0.678  0.7333
##  10 def1 - 16 def1             1.57e-01 0.1676 Inf   0.935  0.6201
##  10 def1 - 17 def1             5.95e-02 0.1700 Inf   0.350  0.8755
##  10 def1 - 18 def1             8.26e-02 0.1764 Inf   0.468  0.8276
##  10 def1 - 19 def1             6.55e-01 0.1939 Inf   3.376  0.0176
##  10 def1 - 20 def1             1.35e-01 0.1754 Inf   0.771  0.6918
##  10 def1 - 22 def1            -8.84e-02 0.1700 Inf  -0.520  0.8066
##  10 def1 - 23 def1             3.56e-01 0.1833 Inf   1.942  0.2232
##  10 def1 - 24 def1            -3.99e-03 0.1741 Inf  -0.023  0.9919
##  10 def1 - 25 def1             9.50e-02 0.1770 Inf   0.537  0.7996
##  10 def1 - 26 def1            -8.48e-03 0.1758 Inf  -0.048  0.9821
##  10 def1 - 27 def1            -1.22e-01 0.1764 Inf  -0.693  0.7263
##  10 def1 - 28 def1            -1.93e-02 0.1731 Inf  -0.112  0.9631
##  10 def1 - 29 def1             1.75e-01 0.1720 Inf   1.020  0.5769
##  10 def1 - 30 def1             1.49e-01 0.1746 Inf   0.853  0.6569
##  10 def1 - 31 def1            -1.87e-01 0.1657 Inf  -1.128  0.5326
##  10 def1 - 32 def1             3.99e-01 0.1767 Inf   2.260  0.1392
##  10 def1 - 33 def1             3.18e-01 0.1687 Inf   1.884  0.2381
##  10 def1 - 34 def1            -1.57e-01 0.1663 Inf  -0.945  0.6162
##  10 def1 - 35 def1             9.11e-02 0.1768 Inf   0.516  0.8066
##  10 def1 - 36 def1            -1.65e-01 0.1739 Inf  -0.951  0.6131
##  10 def1 - 37 def1             2.15e-01 0.1798 Inf   1.196  0.5021
##  10 def1 - 38 def1             1.24e-01 0.1732 Inf   0.719  0.7166
##  10 def1 - 39 def1             7.50e-02 0.1886 Inf   0.398  0.8541
##  10 def1 - 41 def1             7.19e-02 0.1727 Inf   0.416  0.8487
##  10 def1 - 42 def1            -4.18e-02 0.1737 Inf  -0.241  0.9165
##  10 def1 - 43 def1             1.89e-01 0.1733 Inf   1.093  0.5452
##  10 def1 - 44 def1            -3.26e-01 0.1756 Inf  -1.857  0.2462
##  10 def1 - 45 def1             5.21e-03 0.1700 Inf   0.031  0.9895
##  10 def1 - 46 def1            -1.31e-01 0.1734 Inf  -0.757  0.6995
##  10 def1 - 47 def1             3.48e-01 0.1699 Inf   2.046  0.1931
##  10 def1 - 48 def1            -3.70e-01 0.1700 Inf  -2.176  0.1583
##  10 def1 - 49 def1            -6.93e-02 0.1720 Inf  -0.403  0.8524
##  10 def1 - 50 def1             5.66e-02 0.1734 Inf   0.327  0.8829
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##  10 def1 - 51 def1            -2.96e-01 0.1765 Inf  -1.679  0.3100
##  10 def1 - 52 def1            -1.43e-01 0.1659 Inf  -0.865  0.6523
##  10 def1 - 53 def1             5.84e-03 0.1678 Inf   0.035  0.9871
##  10 def1 - 54 def1            -1.18e-01 0.1699 Inf  -0.694  0.7256
##  10 def1 - 55 def1             1.45e-02 0.1679 Inf   0.086  0.9740
##  10 def1 - 56 def1            -4.02e-02 0.1789 Inf  -0.225  0.9252
##  10 def1 - 57 def1            -1.10e-01 0.1696 Inf  -0.651  0.7458
##  10 def1 - 58 def1            -1.66e-01 0.1682 Inf  -0.990  0.5930
##  10 def1 - 59 def1             1.84e-01 0.1723 Inf   1.066  0.5566
##  10 def1 - 60 def1             7.76e-02 0.1720 Inf   0.451  0.8311
##  10 def1 - 61 def1            -1.86e-01 0.1713 Inf  -1.085  0.5485
##  11 def1 - 12 def1             8.24e-02 0.1591 Inf   0.518  0.8066
##  11 def1 - 13 def1             1.63e-01 0.1612 Inf   1.012  0.5801
##  11 def1 - 14 def1            -1.85e-01 0.1640 Inf  -1.129  0.5326
##  11 def1 - 15 def1             2.54e-01 0.1625 Inf   1.562  0.3537
##  11 def1 - 16 def1             2.98e-01 0.1581 Inf   1.883  0.2381
##  11 def1 - 17 def1             2.01e-01 0.1638 Inf   1.224  0.4901
##  11 def1 - 18 def1             2.24e-01 0.1655 Inf   1.352  0.4361
##  11 def1 - 19 def1             7.96e-01 0.1840 Inf   4.325  0.0015
##  11 def1 - 20 def1             2.76e-01 0.1672 Inf   1.653  0.3192
##  11 def1 - 22 def1             5.27e-02 0.1615 Inf   0.327  0.8829
##  11 def1 - 23 def1             4.97e-01 0.1768 Inf   2.813  0.0561
##  11 def1 - 24 def1             1.37e-01 0.1652 Inf   0.830  0.6658
##  11 def1 - 25 def1             2.36e-01 0.1629 Inf   1.449  0.3929
##  11 def1 - 26 def1             1.33e-01 0.1660 Inf   0.799  0.6804
##  11 def1 - 27 def1             1.89e-02 0.1677 Inf   0.113  0.9631
##  11 def1 - 28 def1             1.22e-01 0.1650 Inf   0.738  0.7067
##  11 def1 - 29 def1             3.17e-01 0.1646 Inf   1.924  0.2276
##  11 def1 - 30 def1             2.90e-01 0.1633 Inf   1.777  0.2737
##  11 def1 - 31 def1            -4.58e-02 0.1575 Inf  -0.291  0.8976
##  11 def1 - 32 def1             5.40e-01 0.1649 Inf   3.277  0.0225
##  11 def1 - 33 def1             4.59e-01 0.1623 Inf   2.827  0.0551
##  11 def1 - 34 def1            -1.61e-02 0.1594 Inf  -0.101  0.9669
##  11 def1 - 35 def1             2.32e-01 0.1642 Inf   1.414  0.4080
##  11 def1 - 36 def1            -2.42e-02 0.1614 Inf  -0.150  0.9523
##  11 def1 - 37 def1             3.56e-01 0.1697 Inf   2.099  0.1787
##  11 def1 - 38 def1             2.66e-01 0.1636 Inf   1.623  0.3305
##  11 def1 - 39 def1             2.16e-01 0.1803 Inf   1.199  0.5015
##  11 def1 - 41 def1             2.13e-01 0.1615 Inf   1.319  0.4498
##  11 def1 - 42 def1             9.93e-02 0.1590 Inf   0.625  0.7598
##  11 def1 - 43 def1             3.31e-01 0.1649 Inf   2.005  0.2035
##  11 def1 - 44 def1            -1.85e-01 0.1672 Inf  -1.106  0.5409
##  11 def1 - 45 def1             1.46e-01 0.1639 Inf   0.893  0.6371
##  11 def1 - 46 def1             9.83e-03 0.1611 Inf   0.061  0.9797
##  11 def1 - 47 def1             4.89e-01 0.1636 Inf   2.988  0.0393
##  11 def1 - 48 def1            -2.29e-01 0.1636 Inf  -1.399  0.4147
##  11 def1 - 49 def1             7.18e-02 0.1638 Inf   0.438  0.8379
##  11 def1 - 50 def1             1.98e-01 0.1630 Inf   1.213  0.4944
##  11 def1 - 51 def1            -1.55e-01 0.1670 Inf  -0.929  0.6209
##  11 def1 - 52 def1            -2.33e-03 0.1647 Inf  -0.014  0.9952
##  11 def1 - 53 def1             1.47e-01 0.1637 Inf   0.898  0.6345
##  11 def1 - 54 def1             2.32e-02 0.1589 Inf   0.146  0.9534
##  11 def1 - 55 def1             1.56e-01 0.1587 Inf   0.980  0.5973
##  11 def1 - 56 def1             1.01e-01 0.1657 Inf   0.609  0.7658
##  11 def1 - 57 def1             3.08e-02 0.1646 Inf   0.187  0.9369
##  11 def1 - 58 def1            -2.53e-02 0.1631 Inf  -0.155  0.9504
```

```
##  11 def1 - 59 def1             3.25e-01 0.1701 Inf   1.910  0.2309
##  11 def1 - 60 def1             2.19e-01 0.1623 Inf   1.347  0.4377
##  11 def1 - 61 def1            -4.47e-02 0.1599 Inf  -0.280  0.9020
##  12 def1 - 13 def1             8.08e-02 0.1610 Inf   0.502  0.8131
##  12 def1 - 14 def1            -2.68e-01 0.1560 Inf  -1.715  0.2964
##  12 def1 - 15 def1             1.71e-01 0.1618 Inf   1.060  0.5591
##  12 def1 - 16 def1             2.15e-01 0.1555 Inf   1.385  0.4216
##  12 def1 - 17 def1             1.18e-01 0.1568 Inf   0.753  0.7001
##  12 def1 - 18 def1             1.41e-01 0.1651 Inf   0.856  0.6560
##  12 def1 - 19 def1             7.13e-01 0.1833 Inf   3.892  0.0050
##  12 def1 - 20 def1             1.94e-01 0.1616 Inf   1.200  0.5012
##  12 def1 - 22 def1            -2.97e-02 0.1606 Inf  -0.185  0.9373
##  12 def1 - 23 def1             4.15e-01 0.1758 Inf   2.360  0.1248
##  12 def1 - 24 def1             5.47e-02 0.1650 Inf   0.332  0.8816
##  12 def1 - 25 def1             1.54e-01 0.1649 Inf   0.932  0.6201
##  12 def1 - 26 def1             5.02e-02 0.1617 Inf   0.311  0.8898
##  12 def1 - 27 def1            -6.35e-02 0.1630 Inf  -0.390  0.8585
##  12 def1 - 28 def1             3.94e-02 0.1629 Inf   0.242  0.9159
##  12 def1 - 29 def1             2.34e-01 0.1598 Inf   1.465  0.3900
##  12 def1 - 30 def1             2.08e-01 0.1628 Inf   1.276  0.4697
##  12 def1 - 31 def1            -1.28e-01 0.1528 Inf  -0.839  0.6618
##  12 def1 - 32 def1             4.58e-01 0.1625 Inf   2.819  0.0557
##  12 def1 - 33 def1             3.76e-01 0.1591 Inf   2.367  0.1237
##  12 def1 - 34 def1            -9.85e-02 0.1583 Inf  -0.622  0.7605
##  12 def1 - 35 def1             1.50e-01 0.1616 Inf   0.927  0.6215
##  12 def1 - 36 def1            -1.07e-01 0.1593 Inf  -0.669  0.7377
##  12 def1 - 37 def1             2.74e-01 0.1688 Inf   1.622  0.3307
##  12 def1 - 38 def1             1.83e-01 0.1617 Inf   1.133  0.5317
##  12 def1 - 39 def1             1.34e-01 0.1770 Inf   0.755  0.6995
##  12 def1 - 41 def1             1.31e-01 0.1550 Inf   0.842  0.6612
##  12 def1 - 42 def1             1.69e-02 0.1599 Inf   0.106  0.9649
##  12 def1 - 43 def1             2.48e-01 0.1610 Inf   1.541  0.3604
##  12 def1 - 44 def1            -2.67e-01 0.1611 Inf  -1.659  0.3177
##  12 def1 - 45 def1             6.39e-02 0.1592 Inf   0.401  0.8531
##  12 def1 - 46 def1            -7.26e-02 0.1605 Inf  -0.452  0.8311
##  12 def1 - 47 def1             4.06e-01 0.1571 Inf   2.586  0.0856
##  12 def1 - 48 def1            -3.11e-01 0.1607 Inf  -1.937  0.2245
##  12 def1 - 49 def1            -1.06e-02 0.1570 Inf  -0.068  0.9784
##  12 def1 - 50 def1             1.15e-01 0.1605 Inf   0.719  0.7166
##  12 def1 - 51 def1            -2.38e-01 0.1624 Inf  -1.462  0.3910
##  12 def1 - 52 def1            -8.47e-02 0.1627 Inf  -0.521  0.8066
##  12 def1 - 53 def1             6.45e-02 0.1598 Inf   0.404  0.8524
##  12 def1 - 54 def1            -5.92e-02 0.1548 Inf  -0.383  0.8615
##  12 def1 - 55 def1             7.32e-02 0.1566 Inf   0.467  0.8276
##  12 def1 - 56 def1             1.85e-02 0.1672 Inf   0.111  0.9633
##  12 def1 - 57 def1            -5.16e-02 0.1596 Inf  -0.323  0.8848
##  12 def1 - 58 def1            -1.08e-01 0.1614 Inf  -0.668  0.7387
##  12 def1 - 59 def1             2.42e-01 0.1672 Inf   1.450  0.3929
##  12 def1 - 60 def1             1.36e-01 0.1609 Inf   0.847  0.6582
##  12 def1 - 61 def1            -1.27e-01 0.1614 Inf  -0.788  0.6847
##  13 def1 - 14 def1            -3.48e-01 0.1622 Inf  -2.147  0.1645
##  13 def1 - 15 def1             9.07e-02 0.1623 Inf   0.558  0.7891
##  13 def1 - 16 def1             1.35e-01 0.1573 Inf   0.855  0.6560
##  13 def1 - 17 def1             3.74e-02 0.1632 Inf   0.229  0.9232
##  13 def1 - 18 def1             6.05e-02 0.1667 Inf   0.363  0.8707
##  13 def1 - 19 def1             6.33e-01 0.1806 Inf   3.503  0.0135
```

```
##  13 def1 - 20 def1             1.13e-01 0.1666 Inf   0.680  0.7326
##  13 def1 - 22 def1            -1.10e-01 0.1612 Inf  -0.685  0.7300
##  13 def1 - 23 def1             3.34e-01 0.1761 Inf   1.897  0.2350
##  13 def1 - 24 def1            -2.61e-02 0.1644 Inf  -0.158  0.9491
##  13 def1 - 25 def1             7.29e-02 0.1638 Inf   0.445  0.8348
##  13 def1 - 26 def1            -3.06e-02 0.1662 Inf  -0.184  0.9373
##  13 def1 - 27 def1            -1.44e-01 0.1651 Inf  -0.874  0.6481
##  13 def1 - 28 def1            -4.14e-02 0.1652 Inf  -0.250  0.9131
##  13 def1 - 29 def1             1.53e-01 0.1641 Inf   0.935  0.6201
##  13 def1 - 30 def1             1.27e-01 0.1615 Inf   0.786  0.6856
##  13 def1 - 31 def1            -2.09e-01 0.1574 Inf  -1.328  0.4459
##  13 def1 - 32 def1             3.77e-01 0.1641 Inf   2.299  0.1300
##  13 def1 - 33 def1             2.96e-01 0.1620 Inf   1.826  0.2579
##  13 def1 - 34 def1            -1.79e-01 0.1574 Inf  -1.139  0.5297
##  13 def1 - 35 def1             6.91e-02 0.1678 Inf   0.412  0.8497
##  13 def1 - 36 def1            -1.87e-01 0.1619 Inf  -1.157  0.5199
##  13 def1 - 37 def1             1.93e-01 0.1687 Inf   1.144  0.5272
##  13 def1 - 38 def1             1.02e-01 0.1594 Inf   0.642  0.7504
##  13 def1 - 39 def1             5.29e-02 0.1759 Inf   0.301  0.8941
##  13 def1 - 41 def1             4.98e-02 0.1615 Inf   0.308  0.8898
##  13 def1 - 42 def1            -6.39e-02 0.1583 Inf  -0.404  0.8524
##  13 def1 - 43 def1             1.67e-01 0.1626 Inf   1.030  0.5736
##  13 def1 - 44 def1            -3.48e-01 0.1666 Inf  -2.090  0.1803
##  13 def1 - 45 def1            -1.69e-02 0.1617 Inf  -0.104  0.9654
##  13 def1 - 46 def1            -1.53e-01 0.1660 Inf  -0.924  0.6229
##  13 def1 - 47 def1             3.26e-01 0.1630 Inf   1.997  0.2061
##  13 def1 - 48 def1            -3.92e-01 0.1632 Inf  -2.402  0.1178
##  13 def1 - 49 def1            -9.14e-02 0.1630 Inf  -0.561  0.7880
##  13 def1 - 50 def1             3.46e-02 0.1626 Inf   0.213  0.9288
##  13 def1 - 51 def1            -3.18e-01 0.1655 Inf  -1.923  0.2276
##  13 def1 - 52 def1            -1.66e-01 0.1635 Inf  -1.012  0.5801
##  13 def1 - 53 def1            -1.62e-02 0.1597 Inf  -0.102  0.9666
##  13 def1 - 54 def1            -1.40e-01 0.1558 Inf  -0.898  0.6345
##  13 def1 - 55 def1            -7.60e-03 0.1586 Inf  -0.048  0.9821
##  13 def1 - 56 def1            -6.22e-02 0.1654 Inf  -0.376  0.8648
##  13 def1 - 57 def1            -1.32e-01 0.1637 Inf  -0.809  0.6755
##  13 def1 - 58 def1            -1.89e-01 0.1605 Inf  -1.175  0.5122
##  13 def1 - 59 def1             1.62e-01 0.1692 Inf   0.955  0.6106
##  13 def1 - 60 def1             5.56e-02 0.1572 Inf   0.353  0.8750
##  13 def1 - 61 def1            -2.08e-01 0.1622 Inf  -1.282  0.4667
##  14 def1 - 15 def1             4.39e-01 0.1628 Inf   2.696  0.0684
##  14 def1 - 16 def1             4.83e-01 0.1569 Inf   3.078  0.0332
##  14 def1 - 17 def1             3.86e-01 0.1581 Inf   2.440  0.1105
##  14 def1 - 18 def1             4.09e-01 0.1636 Inf   2.500  0.0995
##  14 def1 - 19 def1             9.81e-01 0.1851 Inf   5.298  0.0001
##  14 def1 - 20 def1             4.62e-01 0.1633 Inf   2.827  0.0551
##  14 def1 - 22 def1             2.38e-01 0.1627 Inf   1.462  0.3910
##  14 def1 - 23 def1             6.82e-01 0.1778 Inf   3.838  0.0057
##  14 def1 - 24 def1             3.22e-01 0.1670 Inf   1.930  0.2261
##  14 def1 - 25 def1             4.21e-01 0.1673 Inf   2.518  0.0969
##  14 def1 - 26 def1             3.18e-01 0.1642 Inf   1.935  0.2246
##  14 def1 - 27 def1             2.04e-01 0.1637 Inf   1.246  0.4821
##  14 def1 - 28 def1             3.07e-01 0.1641 Inf   1.871  0.2423
##  14 def1 - 29 def1             5.02e-01 0.1638 Inf   3.063  0.0340
##  14 def1 - 30 def1             4.75e-01 0.1642 Inf   2.893  0.0475
##  14 def1 - 31 def1             1.39e-01 0.1550 Inf   0.899  0.6345
```

```
##  14 def1 - 32 def1             7.26e-01 0.1655 Inf   4.383  0.0013
##  14 def1 - 33 def1             6.44e-01 0.1617 Inf   3.982  0.0040
##  14 def1 - 34 def1             1.69e-01 0.1613 Inf   1.048  0.5647
##  14 def1 - 35 def1             4.17e-01 0.1678 Inf   2.487  0.1015
##  14 def1 - 36 def1             1.61e-01 0.1639 Inf   0.982  0.5971
##  14 def1 - 37 def1             5.41e-01 0.1699 Inf   3.187  0.0272
##  14 def1 - 38 def1             4.51e-01 0.1636 Inf   2.755  0.0625
##  14 def1 - 39 def1             4.01e-01 0.1771 Inf   2.266  0.1376
##  14 def1 - 41 def1             3.98e-01 0.1586 Inf   2.510  0.0979
##  14 def1 - 42 def1             2.84e-01 0.1641 Inf   1.733  0.2907
##  14 def1 - 43 def1             5.16e-01 0.1604 Inf   3.216  0.0260
##  14 def1 - 44 def1             2.49e-04 0.1630 Inf   0.002  0.9994
##  14 def1 - 45 def1             3.31e-01 0.1625 Inf   2.040  0.1939
##  14 def1 - 46 def1             1.95e-01 0.1650 Inf   1.182  0.5091
##  14 def1 - 47 def1             6.74e-01 0.1582 Inf   4.259  0.0018
##  14 def1 - 48 def1            -4.38e-02 0.1617 Inf  -0.271  0.9056
##  14 def1 - 49 def1             2.57e-01 0.1596 Inf   1.610  0.3347
##  14 def1 - 50 def1             3.83e-01 0.1640 Inf   2.334  0.1278
##  14 def1 - 51 def1             3.00e-02 0.1662 Inf   0.181  0.9384
##  14 def1 - 52 def1             1.83e-01 0.1622 Inf   1.127  0.5328
##  14 def1 - 53 def1             3.32e-01 0.1604 Inf   2.070  0.1860
##  14 def1 - 54 def1             2.08e-01 0.1582 Inf   1.317  0.4501
##  14 def1 - 55 def1             3.41e-01 0.1590 Inf   2.143  0.1655
##  14 def1 - 56 def1             2.86e-01 0.1696 Inf   1.686  0.3068
##  14 def1 - 57 def1             2.16e-01 0.1622 Inf   1.332  0.4450
##  14 def1 - 58 def1             1.60e-01 0.1604 Inf   0.996  0.5899
##  14 def1 - 59 def1             5.10e-01 0.1667 Inf   3.059  0.0340
##  14 def1 - 60 def1             4.04e-01 0.1617 Inf   2.498  0.0998
##  14 def1 - 61 def1             1.40e-01 0.1626 Inf   0.864  0.6529
##  15 def1 - 16 def1             4.39e-02 0.1585 Inf   0.277  0.9035
##  15 def1 - 17 def1            -5.33e-02 0.1604 Inf  -0.332  0.8816
##  15 def1 - 18 def1            -3.01e-02 0.1678 Inf  -0.180  0.9384
##  15 def1 - 19 def1             5.42e-01 0.1859 Inf   2.916  0.0455
##  15 def1 - 20 def1             2.26e-02 0.1662 Inf   0.136  0.9561
##  15 def1 - 22 def1            -2.01e-01 0.1626 Inf  -1.237  0.4845
##  15 def1 - 23 def1             2.43e-01 0.1761 Inf   1.382  0.4226
##  15 def1 - 24 def1            -1.17e-01 0.1673 Inf  -0.698  0.7239
##  15 def1 - 25 def1            -1.78e-02 0.1674 Inf  -0.106  0.9649
##  15 def1 - 26 def1            -1.21e-01 0.1672 Inf  -0.725  0.7138
##  15 def1 - 27 def1            -2.35e-01 0.1676 Inf  -1.402  0.4130
##  15 def1 - 28 def1            -1.32e-01 0.1620 Inf  -0.815  0.6730
##  15 def1 - 29 def1             6.27e-02 0.1634 Inf   0.384  0.8615
##  15 def1 - 30 def1             3.62e-02 0.1633 Inf   0.222  0.9261
##  15 def1 - 31 def1            -3.00e-01 0.1576 Inf  -1.902  0.2332
##  15 def1 - 32 def1             2.87e-01 0.1677 Inf   1.709  0.2982
##  15 def1 - 33 def1             2.05e-01 0.1627 Inf   1.260  0.4768
##  15 def1 - 34 def1            -2.70e-01 0.1607 Inf  -1.679  0.3099
##  15 def1 - 35 def1            -2.16e-02 0.1680 Inf  -0.129  0.9585
##  15 def1 - 36 def1            -2.78e-01 0.1646 Inf  -1.689  0.3059
##  15 def1 - 37 def1             1.02e-01 0.1686 Inf   0.607  0.7661
##  15 def1 - 38 def1             1.17e-02 0.1644 Inf   0.071  0.9766
##  15 def1 - 39 def1            -3.77e-02 0.1793 Inf  -0.210  0.9297
##  15 def1 - 41 def1            -4.09e-02 0.1637 Inf  -0.250  0.9131
##  15 def1 - 42 def1            -1.55e-01 0.1648 Inf  -0.938  0.6194
##  15 def1 - 43 def1             7.68e-02 0.1647 Inf   0.466  0.8277
##  15 def1 - 44 def1            -4.39e-01 0.1665 Inf  -2.635  0.0781
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```
##  15 def1 - 45 def1            -1.08e-01 0.1631 Inf  -0.659  0.7417
##  15 def1 - 46 def1            -2.44e-01 0.1635 Inf  -1.492  0.3785
##  15 def1 - 47 def1             2.35e-01 0.1630 Inf   1.441  0.3964
##  15 def1 - 48 def1            -4.83e-01 0.1630 Inf  -2.962  0.0415
##  15 def1 - 49 def1            -1.82e-01 0.1620 Inf  -1.123  0.5343
##  15 def1 - 50 def1            -5.61e-02 0.1651 Inf  -0.340  0.8796
##  15 def1 - 51 def1            -4.09e-01 0.1676 Inf  -2.440  0.1105
##  15 def1 - 52 def1            -2.56e-01 0.1584 Inf  -1.617  0.3314
##  15 def1 - 53 def1            -1.07e-01 0.1582 Inf  -0.676  0.7348
##  15 def1 - 54 def1            -2.31e-01 0.1603 Inf  -1.439  0.3967
##  15 def1 - 55 def1            -9.83e-02 0.1604 Inf  -0.612  0.7640
##  15 def1 - 56 def1            -1.53e-01 0.1701 Inf  -0.899  0.6345
##  15 def1 - 57 def1            -2.23e-01 0.1621 Inf  -1.376  0.4252
##  15 def1 - 58 def1            -2.79e-01 0.1572 Inf  -1.776  0.2737
##  15 def1 - 59 def1             7.09e-02 0.1681 Inf   0.422  0.8468
##  15 def1 - 60 def1            -3.51e-02 0.1606 Inf  -0.219  0.9267
##  15 def1 - 61 def1            -2.99e-01 0.1600 Inf  -1.866  0.2438
##  16 def1 - 17 def1            -9.72e-02 0.1581 Inf  -0.615  0.7635
##  16 def1 - 18 def1            -7.40e-02 0.1607 Inf  -0.461  0.8291
##  16 def1 - 19 def1             4.98e-01 0.1802 Inf   2.764  0.0622
##  16 def1 - 20 def1            -2.13e-02 0.1565 Inf  -0.136  0.9561
##  16 def1 - 22 def1            -2.45e-01 0.1522 Inf  -1.610  0.3347
##  16 def1 - 23 def1             2.00e-01 0.1674 Inf   1.192  0.5039
##  16 def1 - 24 def1            -1.61e-01 0.1571 Inf  -1.022  0.5757
##  16 def1 - 25 def1            -6.16e-02 0.1604 Inf  -0.384  0.8615
##  16 def1 - 26 def1            -1.65e-01 0.1575 Inf  -1.048  0.5647
##  16 def1 - 27 def1            -2.79e-01 0.1594 Inf  -1.749  0.2843
##  16 def1 - 28 def1            -1.76e-01 0.1584 Inf  -1.110  0.5391
##  16 def1 - 29 def1             1.88e-02 0.1583 Inf   0.119  0.9609
##  16 def1 - 30 def1            -7.66e-03 0.1597 Inf  -0.048  0.9821
##  16 def1 - 31 def1            -3.44e-01 0.1491 Inf  -2.305  0.1289
##  16 def1 - 32 def1             2.43e-01 0.1591 Inf   1.525  0.3659
##  16 def1 - 33 def1             1.61e-01 0.1576 Inf   1.022  0.5757
##  16 def1 - 34 def1            -3.14e-01 0.1546 Inf  -2.030  0.1968
##  16 def1 - 35 def1            -6.55e-02 0.1608 Inf  -0.407  0.8514
##  16 def1 - 36 def1            -3.22e-01 0.1583 Inf  -2.033  0.1956
##  16 def1 - 37 def1             5.85e-02 0.1650 Inf   0.355  0.8750
##  16 def1 - 38 def1            -3.22e-02 0.1583 Inf  -0.203  0.9312
##  16 def1 - 39 def1            -8.16e-02 0.1747 Inf  -0.467  0.8276
##  16 def1 - 41 def1            -8.47e-02 0.1585 Inf  -0.535  0.8004
##  16 def1 - 42 def1            -1.98e-01 0.1586 Inf  -1.251  0.4802
##  16 def1 - 43 def1             3.29e-02 0.1552 Inf   0.212  0.9288
##  16 def1 - 44 def1            -4.83e-01 0.1574 Inf  -3.066  0.0338
##  16 def1 - 45 def1            -1.51e-01 0.1540 Inf  -0.983  0.5964
##  16 def1 - 46 def1            -2.88e-01 0.1588 Inf  -1.813  0.2608
##  16 def1 - 47 def1             1.91e-01 0.1552 Inf   1.231  0.4877
##  16 def1 - 48 def1            -5.27e-01 0.1583 Inf  -3.327  0.0198
##  16 def1 - 49 def1            -2.26e-01 0.1553 Inf  -1.455  0.3928
##  16 def1 - 50 def1            -1.00e-01 0.1572 Inf  -0.636  0.7540
##  16 def1 - 51 def1            -4.53e-01 0.1587 Inf  -2.853  0.0522
##  16 def1 - 52 def1            -3.00e-01 0.1590 Inf  -1.887  0.2374
##  16 def1 - 53 def1            -1.51e-01 0.1563 Inf  -0.964  0.6047
##  16 def1 - 54 def1            -2.75e-01 0.1537 Inf  -1.786  0.2712
##  16 def1 - 55 def1            -1.42e-01 0.1546 Inf  -0.919  0.6242
##  16 def1 - 56 def1            -1.97e-01 0.1615 Inf  -1.218  0.4928
##  16 def1 - 57 def1            -2.67e-01 0.1587 Inf  -1.681  0.3096
```

```
##  16 def1 - 58 def1            -3.23e-01 0.1569 Inf  -2.060  0.1892
##  16 def1 - 59 def1             2.70e-02 0.1617 Inf   0.167  0.9448
##  16 def1 - 60 def1            -7.90e-02 0.1541 Inf  -0.512  0.8076
##  16 def1 - 61 def1            -3.42e-01 0.1562 Inf  -2.192  0.1550
##  17 def1 - 18 def1             2.32e-02 0.1672 Inf   0.139  0.9556
##  17 def1 - 19 def1             5.95e-01 0.1853 Inf   3.212  0.0260
##  17 def1 - 20 def1             7.58e-02 0.1631 Inf   0.465  0.8279
##  17 def1 - 22 def1            -1.48e-01 0.1629 Inf  -0.908  0.6319
##  17 def1 - 23 def1             2.97e-01 0.1771 Inf   1.675  0.3115
##  17 def1 - 24 def1            -6.34e-02 0.1671 Inf  -0.380  0.8628
##  17 def1 - 25 def1             3.55e-02 0.1676 Inf   0.212  0.9288
##  17 def1 - 26 def1            -6.79e-02 0.1643 Inf  -0.414  0.8495
##  17 def1 - 27 def1            -1.82e-01 0.1669 Inf  -1.089  0.5465
##  17 def1 - 28 def1            -7.88e-02 0.1638 Inf  -0.481  0.8236
##  17 def1 - 29 def1             1.16e-01 0.1632 Inf   0.711  0.7201
##  17 def1 - 30 def1             8.95e-02 0.1653 Inf   0.541  0.7970
##  17 def1 - 31 def1            -2.46e-01 0.1579 Inf  -1.561  0.3537
##  17 def1 - 32 def1             3.40e-01 0.1657 Inf   2.052  0.1917
##  17 def1 - 33 def1             2.58e-01 0.1615 Inf   1.599  0.3384
##  17 def1 - 34 def1            -2.17e-01 0.1613 Inf  -1.343  0.4397
##  17 def1 - 35 def1             3.17e-02 0.1681 Inf   0.188  0.9369
##  17 def1 - 36 def1            -2.25e-01 0.1647 Inf  -1.365  0.4301
##  17 def1 - 37 def1             1.56e-01 0.1683 Inf   0.925  0.6229
##  17 def1 - 38 def1             6.50e-02 0.1628 Inf   0.399  0.8538
##  17 def1 - 39 def1             1.55e-02 0.1771 Inf   0.088  0.9738
##  17 def1 - 41 def1             1.24e-02 0.1590 Inf   0.078  0.9751
##  17 def1 - 42 def1            -1.01e-01 0.1636 Inf  -0.619  0.7615
##  17 def1 - 43 def1             1.30e-01 0.1639 Inf   0.793  0.6822
##  17 def1 - 44 def1            -3.85e-01 0.1664 Inf  -2.317  0.1278
##  17 def1 - 45 def1            -5.42e-02 0.1634 Inf  -0.332  0.8816
##  17 def1 - 46 def1            -1.91e-01 0.1649 Inf  -1.157  0.5200
##  17 def1 - 47 def1             2.88e-01 0.1615 Inf   1.784  0.2715
##  17 def1 - 48 def1            -4.29e-01 0.1582 Inf  -2.715  0.0666
##  17 def1 - 49 def1            -1.29e-01 0.1605 Inf  -0.802  0.6782
##  17 def1 - 50 def1            -2.81e-03 0.1623 Inf  -0.017  0.9939
##  17 def1 - 51 def1            -3.56e-01 0.1665 Inf  -2.137  0.1675
##  17 def1 - 52 def1            -2.03e-01 0.1615 Inf  -1.257  0.4781
##  17 def1 - 53 def1            -5.36e-02 0.1612 Inf  -0.333  0.8816
##  17 def1 - 54 def1            -1.77e-01 0.1585 Inf  -1.119  0.5355
##  17 def1 - 55 def1            -4.50e-02 0.1576 Inf  -0.285  0.8984
##  17 def1 - 56 def1            -9.96e-02 0.1699 Inf  -0.586  0.7736
##  17 def1 - 57 def1            -1.70e-01 0.1600 Inf  -1.061  0.5591
##  17 def1 - 58 def1            -2.26e-01 0.1616 Inf  -1.398  0.4149
##  17 def1 - 59 def1             1.24e-01 0.1685 Inf   0.737  0.7068
##  17 def1 - 60 def1             1.82e-02 0.1624 Inf   0.112  0.9631
##  17 def1 - 61 def1            -2.45e-01 0.1616 Inf  -1.518  0.3687
##  18 def1 - 19 def1             5.72e-01 0.1826 Inf   3.132  0.0300
##  18 def1 - 20 def1             5.27e-02 0.1704 Inf   0.309  0.8898
##  18 def1 - 22 def1            -1.71e-01 0.1660 Inf  -1.030  0.5736
##  18 def1 - 23 def1             2.74e-01 0.1817 Inf   1.505  0.3732
##  18 def1 - 24 def1            -8.66e-02 0.1692 Inf  -0.512  0.8076
##  18 def1 - 25 def1             1.24e-02 0.1671 Inf   0.074  0.9766
##  18 def1 - 26 def1            -9.11e-02 0.1707 Inf  -0.534  0.8009
##  18 def1 - 27 def1            -2.05e-01 0.1681 Inf  -1.219  0.4928
##  18 def1 - 28 def1            -1.02e-01 0.1699 Inf  -0.600  0.7691
##  18 def1 - 29 def1             9.28e-02 0.1683 Inf   0.552  0.7908
```

```
##  18 def1 - 30 def1             6.63e-02 0.1667 Inf   0.398  0.8541
##  18 def1 - 31 def1            -2.70e-01 0.1591 Inf  -1.694  0.3042
##  18 def1 - 32 def1             3.17e-01 0.1683 Inf   1.882  0.2384
##  18 def1 - 33 def1             2.35e-01 0.1671 Inf   1.407  0.4105
##  18 def1 - 34 def1            -2.40e-01 0.1655 Inf  -1.449  0.3929
##  18 def1 - 35 def1             8.52e-03 0.1720 Inf   0.050  0.9821
##  18 def1 - 36 def1            -2.48e-01 0.1664 Inf  -1.490  0.3788
##  18 def1 - 37 def1             1.32e-01 0.1717 Inf   0.771  0.6918
##  18 def1 - 38 def1             4.18e-02 0.1649 Inf   0.254  0.9117
##  18 def1 - 39 def1            -7.62e-03 0.1829 Inf  -0.042  0.9846
##  18 def1 - 41 def1            -1.07e-02 0.1660 Inf  -0.065  0.9784
##  18 def1 - 42 def1            -1.24e-01 0.1656 Inf  -0.751  0.7006
##  18 def1 - 43 def1             1.07e-01 0.1615 Inf   0.662  0.7410
##  18 def1 - 44 def1            -4.09e-01 0.1681 Inf  -2.431  0.1120
##  18 def1 - 45 def1            -7.74e-02 0.1651 Inf  -0.469  0.8276
##  18 def1 - 46 def1            -2.14e-01 0.1689 Inf  -1.266  0.4740
##  18 def1 - 47 def1             2.65e-01 0.1651 Inf   1.605  0.3363
##  18 def1 - 48 def1            -4.53e-01 0.1654 Inf  -2.736  0.0646
##  18 def1 - 49 def1            -1.52e-01 0.1669 Inf  -0.910  0.6306
##  18 def1 - 50 def1            -2.60e-02 0.1685 Inf  -0.154  0.9509
##  18 def1 - 51 def1            -3.79e-01 0.1707 Inf  -2.219  0.1483
##  18 def1 - 52 def1            -2.26e-01 0.1669 Inf  -1.355  0.4351
##  18 def1 - 53 def1            -7.68e-02 0.1629 Inf  -0.471  0.8276
##  18 def1 - 54 def1            -2.01e-01 0.1636 Inf  -1.226  0.4897
##  18 def1 - 55 def1            -6.81e-02 0.1648 Inf  -0.413  0.8495
##  18 def1 - 56 def1            -1.23e-01 0.1703 Inf  -0.721  0.7157
##  18 def1 - 57 def1            -1.93e-01 0.1656 Inf  -1.165  0.5165
##  18 def1 - 58 def1            -2.49e-01 0.1657 Inf  -1.503  0.3740
##  18 def1 - 59 def1             1.01e-01 0.1689 Inf   0.598  0.7691
##  18 def1 - 60 def1            -4.98e-03 0.1667 Inf  -0.030  0.9895
##  18 def1 - 61 def1            -2.68e-01 0.1678 Inf  -1.600  0.3384
##  19 def1 - 20 def1            -5.19e-01 0.1880 Inf  -2.763  0.0622
##  19 def1 - 22 def1            -7.43e-01 0.1839 Inf  -4.040  0.0034
##  19 def1 - 23 def1            -2.99e-01 0.1981 Inf  -1.507  0.3725
##  19 def1 - 24 def1            -6.59e-01 0.1877 Inf  -3.509  0.0134
##  19 def1 - 25 def1            -5.60e-01 0.1832 Inf  -3.055  0.0342
##  19 def1 - 26 def1            -6.63e-01 0.1883 Inf  -3.521  0.0130
##  19 def1 - 27 def1            -7.77e-01 0.1884 Inf  -4.124  0.0026
##  19 def1 - 28 def1            -6.74e-01 0.1879 Inf  -3.587  0.0114
##  19 def1 - 29 def1            -4.79e-01 0.1858 Inf  -2.580  0.0864
##  19 def1 - 30 def1            -5.06e-01 0.1824 Inf  -2.773  0.0608
##  19 def1 - 31 def1            -8.42e-01 0.1793 Inf  -4.695  0.0007
##  19 def1 - 32 def1            -2.55e-01 0.1860 Inf  -1.373  0.4263
##  19 def1 - 33 def1            -3.37e-01 0.1851 Inf  -1.820  0.2598
##  19 def1 - 34 def1            -8.12e-01 0.1834 Inf  -4.428  0.0011
##  19 def1 - 35 def1            -5.64e-01 0.1890 Inf  -2.981  0.0396
##  19 def1 - 36 def1            -8.20e-01 0.1840 Inf  -4.457  0.0011
##  19 def1 - 37 def1            -4.40e-01 0.1899 Inf  -2.314  0.1279
##  19 def1 - 38 def1            -5.30e-01 0.1823 Inf  -2.909  0.0459
##  19 def1 - 39 def1            -5.80e-01 0.1996 Inf  -2.904  0.0462
##  19 def1 - 41 def1            -5.83e-01 0.1852 Inf  -3.146  0.0293
##  19 def1 - 42 def1            -6.97e-01 0.1801 Inf  -3.868  0.0052
##  19 def1 - 43 def1            -4.65e-01 0.1826 Inf  -2.548  0.0915
##  19 def1 - 44 def1            -9.81e-01 0.1879 Inf  -5.218  0.0001
##  19 def1 - 45 def1            -6.49e-01 0.1827 Inf  -3.554  0.0123
##  19 def1 - 46 def1            -7.86e-01 0.1875 Inf  -4.192  0.0022
```

```
##  19 def1 - 47 def1            -3.07e-01 0.1851 Inf  -1.659  0.3177
##  19 def1 - 48 def1            -1.02e+00 0.1832 Inf  -5.594  <.0001
##  19 def1 - 49 def1            -7.24e-01 0.1852 Inf  -3.910  0.0050
##  19 def1 - 50 def1            -5.98e-01 0.1860 Inf  -3.216  0.0260
##  19 def1 - 51 def1            -9.51e-01 0.1844 Inf  -5.157  0.0001
##  19 def1 - 52 def1            -7.98e-01 0.1870 Inf  -4.268  0.0018
##  19 def1 - 53 def1            -6.49e-01 0.1829 Inf  -3.549  0.0123
##  19 def1 - 54 def1            -7.73e-01 0.1771 Inf  -4.362  0.0014
##  19 def1 - 55 def1            -6.40e-01 0.1830 Inf  -3.498  0.0136
##  19 def1 - 56 def1            -6.95e-01 0.1838 Inf  -3.781  0.0065
##  19 def1 - 57 def1            -7.65e-01 0.1835 Inf  -4.168  0.0023
##  19 def1 - 58 def1            -8.21e-01 0.1852 Inf  -4.433  0.0011
##  19 def1 - 59 def1            -4.71e-01 0.1904 Inf  -2.474  0.1041
##  19 def1 - 60 def1            -5.77e-01 0.1844 Inf  -3.130  0.0300
##  19 def1 - 61 def1            -8.41e-01 0.1855 Inf  -4.531  0.0010
##  20 def1 - 22 def1            -2.24e-01 0.1620 Inf  -1.381  0.4230
##  20 def1 - 23 def1             2.21e-01 0.1805 Inf   1.224  0.4901
##  20 def1 - 24 def1            -1.39e-01 0.1690 Inf  -0.824  0.6685
##  20 def1 - 25 def1            -4.03e-02 0.1690 Inf  -0.239  0.9170
##  20 def1 - 26 def1            -1.44e-01 0.1666 Inf  -0.863  0.6530
##  20 def1 - 27 def1            -2.58e-01 0.1699 Inf  -1.516  0.3696
##  20 def1 - 28 def1            -1.55e-01 0.1663 Inf  -0.930  0.6209
##  20 def1 - 29 def1             4.02e-02 0.1647 Inf   0.244  0.9151
##  20 def1 - 30 def1             1.37e-02 0.1654 Inf   0.083  0.9741
##  20 def1 - 31 def1            -3.22e-01 0.1577 Inf  -2.043  0.1933
##  20 def1 - 32 def1             2.64e-01 0.1692 Inf   1.561  0.3537
##  20 def1 - 33 def1             1.82e-01 0.1661 Inf   1.098  0.5440
##  20 def1 - 34 def1            -2.92e-01 0.1647 Inf  -1.776  0.2737
##  20 def1 - 35 def1            -4.41e-02 0.1663 Inf  -0.265  0.9072
##  20 def1 - 36 def1            -3.01e-01 0.1675 Inf  -1.795  0.2680
##  20 def1 - 37 def1             7.98e-02 0.1736 Inf   0.460  0.8291
##  20 def1 - 38 def1            -1.08e-02 0.1671 Inf  -0.065  0.9784
##  20 def1 - 39 def1            -6.03e-02 0.1784 Inf  -0.338  0.8797
##  20 def1 - 41 def1            -6.34e-02 0.1653 Inf  -0.384  0.8615
##  20 def1 - 42 def1            -1.77e-01 0.1674 Inf  -1.058  0.5601
##  20 def1 - 43 def1             5.42e-02 0.1650 Inf   0.328  0.8829
##  20 def1 - 44 def1            -4.61e-01 0.1659 Inf  -2.780  0.0599
##  20 def1 - 45 def1            -1.30e-01 0.1634 Inf  -0.796  0.6812
##  20 def1 - 46 def1            -2.67e-01 0.1673 Inf  -1.593  0.3403
##  20 def1 - 47 def1             2.12e-01 0.1633 Inf   1.300  0.4577
##  20 def1 - 48 def1            -5.05e-01 0.1656 Inf  -3.051  0.0344
##  20 def1 - 49 def1            -2.05e-01 0.1645 Inf  -1.244  0.4832
##  20 def1 - 50 def1            -7.86e-02 0.1664 Inf  -0.473  0.8276
##  20 def1 - 51 def1            -4.32e-01 0.1674 Inf  -2.578  0.0865
##  20 def1 - 52 def1            -2.79e-01 0.1676 Inf  -1.663  0.3158
##  20 def1 - 53 def1            -1.29e-01 0.1662 Inf  -0.779  0.6885
##  20 def1 - 54 def1            -2.53e-01 0.1620 Inf  -1.563  0.3537
##  20 def1 - 55 def1            -1.21e-01 0.1638 Inf  -0.738  0.7068
##  20 def1 - 56 def1            -1.75e-01 0.1726 Inf  -1.017  0.5789
##  20 def1 - 57 def1            -2.46e-01 0.1657 Inf  -1.482  0.3813
##  20 def1 - 58 def1            -3.02e-01 0.1670 Inf  -1.807  0.2630
##  20 def1 - 59 def1             4.84e-02 0.1720 Inf   0.281  0.9011
##  20 def1 - 60 def1            -5.77e-02 0.1655 Inf  -0.348  0.8760
##  20 def1 - 61 def1            -3.21e-01 0.1660 Inf  -1.935  0.2246
##  22 def1 - 23 def1             4.44e-01 0.1738 Inf   2.557  0.0901
##  22 def1 - 24 def1             8.44e-02 0.1649 Inf   0.512  0.8076
```

```
##  22 def1 - 25 def1             1.83e-01 0.1653 Inf   1.109  0.5391
##  22 def1 - 26 def1             7.99e-02 0.1642 Inf   0.486  0.8226
##  22 def1 - 27 def1            -3.39e-02 0.1666 Inf  -0.203  0.9312
##  22 def1 - 28 def1             6.91e-02 0.1640 Inf   0.421  0.8468
##  22 def1 - 29 def1             2.64e-01 0.1623 Inf   1.625  0.3296
##  22 def1 - 30 def1             2.37e-01 0.1632 Inf   1.454  0.3928
##  22 def1 - 31 def1            -9.86e-02 0.1546 Inf  -0.638  0.7532
##  22 def1 - 32 def1             4.88e-01 0.1655 Inf   2.947  0.0428
##  22 def1 - 33 def1             4.06e-01 0.1614 Inf   2.516  0.0971
##  22 def1 - 34 def1            -6.88e-02 0.1590 Inf  -0.433  0.8423
##  22 def1 - 35 def1             1.80e-01 0.1660 Inf   1.082  0.5495
##  22 def1 - 36 def1            -7.69e-02 0.1613 Inf  -0.477  0.8243
##  22 def1 - 37 def1             3.03e-01 0.1693 Inf   1.792  0.2686
##  22 def1 - 38 def1             2.13e-01 0.1622 Inf   1.312  0.4523
##  22 def1 - 39 def1             1.63e-01 0.1793 Inf   0.911  0.6301
##  22 def1 - 41 def1             1.60e-01 0.1633 Inf   0.981  0.5973
##  22 def1 - 42 def1             4.66e-02 0.1628 Inf   0.286  0.8984
##  22 def1 - 43 def1             2.78e-01 0.1623 Inf   1.712  0.2976
##  22 def1 - 44 def1            -2.38e-01 0.1636 Inf  -1.452  0.3928
##  22 def1 - 45 def1             9.36e-02 0.1579 Inf   0.592  0.7716
##  22 def1 - 46 def1            -4.29e-02 0.1644 Inf  -0.261  0.9085
##  22 def1 - 47 def1             4.36e-01 0.1602 Inf   2.722  0.0658
##  22 def1 - 48 def1            -2.82e-01 0.1614 Inf  -1.745  0.2857
##  22 def1 - 49 def1             1.91e-02 0.1624 Inf   0.117  0.9618
##  22 def1 - 50 def1             1.45e-01 0.1614 Inf   0.899  0.6345
##  22 def1 - 51 def1            -2.08e-01 0.1654 Inf  -1.257  0.4781
##  22 def1 - 52 def1            -5.51e-02 0.1625 Inf  -0.339  0.8797
##  22 def1 - 53 def1             9.42e-02 0.1622 Inf   0.581  0.7769
##  22 def1 - 54 def1            -2.96e-02 0.1575 Inf  -0.188  0.9369
##  22 def1 - 55 def1             1.03e-01 0.1564 Inf   0.657  0.7422
##  22 def1 - 56 def1             4.82e-02 0.1686 Inf   0.286  0.8984
##  22 def1 - 57 def1            -2.19e-02 0.1635 Inf  -0.134  0.9561
##  22 def1 - 58 def1            -7.81e-02 0.1623 Inf  -0.481  0.8236
##  22 def1 - 59 def1             2.72e-01 0.1663 Inf   1.636  0.3257
##  22 def1 - 60 def1             1.66e-01 0.1593 Inf   1.042  0.5678
##  22 def1 - 61 def1            -9.75e-02 0.1634 Inf  -0.597  0.7693
##  23 def1 - 24 def1            -3.60e-01 0.1763 Inf  -2.043  0.1933
##  23 def1 - 25 def1            -2.61e-01 0.1813 Inf  -1.440  0.3964
##  23 def1 - 26 def1            -3.65e-01 0.1756 Inf  -2.076  0.1847
##  23 def1 - 27 def1            -4.78e-01 0.1811 Inf  -2.642  0.0771
##  23 def1 - 28 def1            -3.75e-01 0.1780 Inf  -2.110  0.1751
##  23 def1 - 29 def1            -1.81e-01 0.1783 Inf  -1.013  0.5801
##  23 def1 - 30 def1            -2.07e-01 0.1796 Inf  -1.153  0.5219
##  23 def1 - 31 def1            -5.43e-01 0.1726 Inf  -3.147  0.0293
##  23 def1 - 32 def1             4.32e-02 0.1811 Inf   0.238  0.9170
##  23 def1 - 33 def1            -3.84e-02 0.1765 Inf  -0.217  0.9275
##  23 def1 - 34 def1            -5.13e-01 0.1725 Inf  -2.976  0.0400
##  23 def1 - 35 def1            -2.65e-01 0.1825 Inf  -1.452  0.3928
##  23 def1 - 36 def1            -5.21e-01 0.1789 Inf  -2.915  0.0455
##  23 def1 - 37 def1            -1.41e-01 0.1850 Inf  -0.762  0.6973
##  23 def1 - 38 def1            -2.32e-01 0.1749 Inf  -1.325  0.4469
##  23 def1 - 39 def1            -2.81e-01 0.1934 Inf  -1.453  0.3928
##  23 def1 - 41 def1            -2.84e-01 0.1768 Inf  -1.608  0.3351
##  23 def1 - 42 def1            -3.98e-01 0.1782 Inf  -2.233  0.1446
##  23 def1 - 43 def1            -1.67e-01 0.1786 Inf  -0.933  0.6201
##  23 def1 - 44 def1            -6.82e-01 0.1806 Inf  -3.777  0.0066
```

```
##  23 def1 - 45 def1           -3.51e-01 0.1734 Inf  -2.024  0.1990
##  23 def1 - 46 def1           -4.87e-01 0.1799 Inf  -2.709  0.0670
##  23 def1 - 47 def1           -8.51e-03 0.1773 Inf  -0.048  0.9821
##  23 def1 - 48 def1           -7.26e-01 0.1771 Inf  -4.099  0.0027
##  23 def1 - 49 def1           -4.25e-01 0.1774 Inf  -2.399  0.1184
##  23 def1 - 50 def1           -2.99e-01 0.1736 Inf  -1.725  0.2919
##  23 def1 - 51 def1           -6.52e-01 0.1811 Inf  -3.602  0.0110
##  23 def1 - 52 def1           -5.00e-01 0.1772 Inf  -2.819  0.0557
##  23 def1 - 53 def1           -3.50e-01 0.1760 Inf  -1.991  0.2082
##  23 def1 - 54 def1           -4.74e-01 0.1693 Inf  -2.800  0.0577
##  23 def1 - 55 def1           -3.42e-01 0.1749 Inf  -1.954  0.2199
##  23 def1 - 56 def1           -3.96e-01 0.1830 Inf  -2.165  0.1607
##  23 def1 - 57 def1           -4.66e-01 0.1782 Inf  -2.618  0.0810
##  23 def1 - 58 def1           -5.23e-01 0.1740 Inf  -3.004  0.0382
##  23 def1 - 59 def1           -1.72e-01 0.1821 Inf  -0.947  0.6158
##  23 def1 - 60 def1           -2.78e-01 0.1769 Inf  -1.574  0.3493
##  23 def1 - 61 def1           -5.42e-01 0.1763 Inf  -3.073  0.0333
##  24 def1 - 25 def1            9.90e-02 0.1652 Inf   0.599  0.7691
##  24 def1 - 26 def1           -4.50e-03 0.1691 Inf  -0.027  0.9904
##  24 def1 - 27 def1           -1.18e-01 0.1687 Inf  -0.701  0.7224
##  24 def1 - 28 def1           -1.53e-02 0.1692 Inf  -0.091  0.9728
##  24 def1 - 29 def1            1.79e-01 0.1681 Inf   1.068  0.5566
##  24 def1 - 30 def1            1.53e-01 0.1684 Inf   0.908  0.6317
##  24 def1 - 31 def1           -1.83e-01 0.1607 Inf  -1.138  0.5297
##  24 def1 - 32 def1            4.03e-01 0.1685 Inf   2.394  0.1188
##  24 def1 - 33 def1            3.22e-01 0.1645 Inf   1.956  0.2194
##  24 def1 - 34 def1           -1.53e-01 0.1651 Inf  -0.928  0.6210
##  24 def1 - 35 def1            9.51e-02 0.1719 Inf   0.554  0.7901
##  24 def1 - 36 def1           -1.61e-01 0.1679 Inf  -0.961  0.6069
##  24 def1 - 37 def1            2.19e-01 0.1742 Inf   1.258  0.4775
##  24 def1 - 38 def1            1.28e-01 0.1654 Inf   0.777  0.6894
##  24 def1 - 39 def1            7.90e-02 0.1834 Inf   0.431  0.8431
##  24 def1 - 41 def1            7.59e-02 0.1672 Inf   0.454  0.8311
##  24 def1 - 42 def1           -3.78e-02 0.1630 Inf  -0.232  0.9210
##  24 def1 - 43 def1            1.93e-01 0.1679 Inf   1.152  0.5222
##  24 def1 - 44 def1           -3.22e-01 0.1694 Inf  -1.901  0.2332
##  24 def1 - 45 def1            9.19e-03 0.1656 Inf   0.056  0.9814
##  24 def1 - 46 def1           -1.27e-01 0.1695 Inf  -0.751  0.7006
##  24 def1 - 47 def1            3.52e-01 0.1659 Inf   2.119  0.1725
##  24 def1 - 48 def1           -3.66e-01 0.1672 Inf  -2.189  0.1553
##  24 def1 - 49 def1           -6.53e-02 0.1640 Inf  -0.398  0.8541
##  24 def1 - 50 def1            6.06e-02 0.1670 Inf   0.363  0.8707
##  24 def1 - 51 def1           -2.92e-01 0.1704 Inf  -1.715  0.2964
##  24 def1 - 52 def1           -1.39e-01 0.1655 Inf  -0.843  0.6612
##  24 def1 - 53 def1            9.83e-03 0.1658 Inf   0.059  0.9801
##  24 def1 - 54 def1           -1.14e-01 0.1623 Inf  -0.702  0.7218
##  24 def1 - 55 def1            1.85e-02 0.1639 Inf   0.113  0.9631
##  24 def1 - 56 def1           -3.62e-02 0.1681 Inf  -0.215  0.9278
##  24 def1 - 57 def1           -1.06e-01 0.1640 Inf  -0.648  0.7465
##  24 def1 - 58 def1           -1.62e-01 0.1668 Inf  -0.974  0.5999
##  24 def1 - 59 def1            1.88e-01 0.1715 Inf   1.094  0.5452
##  24 def1 - 60 def1            8.16e-02 0.1625 Inf   0.502  0.8130
##  24 def1 - 61 def1           -1.82e-01 0.1658 Inf  -1.097  0.5446
##  25 def1 - 26 def1           -1.03e-01 0.1706 Inf  -0.606  0.7661
##  25 def1 - 27 def1           -2.17e-01 0.1691 Inf  -1.284  0.4660
##  25 def1 - 28 def1           -1.14e-01 0.1698 Inf  -0.673  0.7360
```

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##  25 def1 - 29 def1             8.05e-02 0.1662 Inf   0.484  0.8236
##  25 def1 - 30 def1             5.40e-02 0.1623 Inf   0.333  0.8816
##  25 def1 - 31 def1            -2.82e-01 0.1589 Inf  -1.775  0.2739
##  25 def1 - 32 def1             3.04e-01 0.1655 Inf   1.839  0.2525
##  25 def1 - 33 def1             2.23e-01 0.1666 Inf   1.337  0.4428
##  25 def1 - 34 def1            -2.52e-01 0.1652 Inf  -1.527  0.3659
##  25 def1 - 35 def1            -3.83e-03 0.1699 Inf  -0.023  0.9919
##  25 def1 - 36 def1            -2.60e-01 0.1676 Inf  -1.553  0.3572
##  25 def1 - 37 def1             1.20e-01 0.1715 Inf   0.701  0.7224
##  25 def1 - 38 def1             2.95e-02 0.1655 Inf   0.178  0.9392
##  25 def1 - 39 def1            -2.00e-02 0.1811 Inf  -0.110  0.9633
##  25 def1 - 41 def1            -2.31e-02 0.1675 Inf  -0.138  0.9558
##  25 def1 - 42 def1            -1.37e-01 0.1607 Inf  -0.851  0.6575
##  25 def1 - 43 def1             9.45e-02 0.1678 Inf   0.563  0.7865
##  25 def1 - 44 def1            -4.21e-01 0.1691 Inf  -2.490  0.1010
##  25 def1 - 45 def1            -8.98e-02 0.1671 Inf  -0.537  0.7995
##  25 def1 - 46 def1            -2.26e-01 0.1696 Inf  -1.334  0.4441
##  25 def1 - 47 def1             2.53e-01 0.1663 Inf   1.519  0.3683
##  25 def1 - 48 def1            -4.65e-01 0.1673 Inf  -2.780  0.0599
##  25 def1 - 49 def1            -1.64e-01 0.1655 Inf  -0.993  0.5913
##  25 def1 - 50 def1            -3.83e-02 0.1683 Inf  -0.228  0.9234
##  25 def1 - 51 def1            -3.91e-01 0.1692 Inf  -2.313  0.1279
##  25 def1 - 52 def1            -2.38e-01 0.1692 Inf  -1.409  0.4102
##  25 def1 - 53 def1            -8.91e-02 0.1664 Inf  -0.536  0.8000
##  25 def1 - 54 def1            -2.13e-01 0.1614 Inf  -1.319  0.4498
##  25 def1 - 55 def1            -8.05e-02 0.1643 Inf  -0.490  0.8207
##  25 def1 - 56 def1            -1.35e-01 0.1656 Inf  -0.816  0.6730
##  25 def1 - 57 def1            -2.05e-01 0.1681 Inf  -1.221  0.4920
##  25 def1 - 58 def1            -2.61e-01 0.1674 Inf  -1.562  0.3537
##  25 def1 - 59 def1             8.87e-02 0.1735 Inf   0.511  0.8076
##  25 def1 - 60 def1            -1.73e-02 0.1640 Inf  -0.106  0.9649
##  25 def1 - 61 def1            -2.81e-01 0.1676 Inf  -1.676  0.3112
##  26 def1 - 27 def1            -1.14e-01 0.1689 Inf  -0.673  0.7360
##  26 def1 - 28 def1            -1.08e-02 0.1645 Inf  -0.066  0.9784
##  26 def1 - 29 def1             1.84e-01 0.1643 Inf   1.119  0.5355
##  26 def1 - 30 def1             1.57e-01 0.1685 Inf   0.934  0.6201
##  26 def1 - 31 def1            -1.78e-01 0.1593 Inf  -1.121  0.5355
##  26 def1 - 32 def1             4.08e-01 0.1704 Inf   2.394  0.1188
##  26 def1 - 33 def1             3.26e-01 0.1648 Inf   1.980  0.2106
##  26 def1 - 34 def1            -1.49e-01 0.1631 Inf  -0.912  0.6300
##  26 def1 - 35 def1             9.96e-02 0.1688 Inf   0.590  0.7727
##  26 def1 - 36 def1            -1.57e-01 0.1668 Inf  -0.940  0.6183
##  26 def1 - 37 def1             2.24e-01 0.1727 Inf   1.295  0.4608
##  26 def1 - 38 def1             1.33e-01 0.1671 Inf   0.796  0.6812
##  26 def1 - 39 def1             8.35e-02 0.1826 Inf   0.457  0.8295
##  26 def1 - 41 def1             8.04e-02 0.1662 Inf   0.483  0.8236
##  26 def1 - 42 def1            -3.33e-02 0.1675 Inf  -0.199  0.9322
##  26 def1 - 43 def1             1.98e-01 0.1645 Inf   1.204  0.4994
##  26 def1 - 44 def1            -3.18e-01 0.1660 Inf  -1.912  0.2300
##  26 def1 - 45 def1             1.37e-02 0.1656 Inf   0.083  0.9741
##  26 def1 - 46 def1            -1.23e-01 0.1664 Inf  -0.738  0.7067
##  26 def1 - 47 def1             3.56e-01 0.1621 Inf   2.197  0.1540
##  26 def1 - 48 def1            -3.62e-01 0.1638 Inf  -2.207  0.1516
##  26 def1 - 49 def1            -6.08e-02 0.1626 Inf  -0.374  0.8656
##  26 def1 - 50 def1             6.51e-02 0.1650 Inf   0.395  0.8558
##  26 def1 - 51 def1            -2.88e-01 0.1676 Inf  -1.717  0.2962
```

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##  26 def1 - 52 def1            -1.35e-01 0.1684 Inf  -0.801  0.6782
##  26 def1 - 53 def1             1.43e-02 0.1657 Inf   0.086  0.9740
##  26 def1 - 54 def1            -1.09e-01 0.1633 Inf  -0.670  0.7376
##  26 def1 - 55 def1             2.30e-02 0.1589 Inf   0.144  0.9535
##  26 def1 - 56 def1            -3.17e-02 0.1728 Inf  -0.183  0.9375
##  26 def1 - 57 def1            -1.02e-01 0.1675 Inf  -0.608  0.7661
##  26 def1 - 58 def1            -1.58e-01 0.1672 Inf  -0.945  0.6162
##  26 def1 - 59 def1             1.92e-01 0.1722 Inf   1.116  0.5367
##  26 def1 - 60 def1             8.61e-02 0.1663 Inf   0.518  0.8066
##  26 def1 - 61 def1            -1.77e-01 0.1661 Inf  -1.068  0.5566
##  27 def1 - 28 def1             1.03e-01 0.1697 Inf   0.607  0.7661
##  27 def1 - 29 def1             2.98e-01 0.1645 Inf   1.810  0.2622
##  27 def1 - 30 def1             2.71e-01 0.1685 Inf   1.609  0.3347
##  27 def1 - 31 def1            -6.47e-02 0.1610 Inf  -0.402  0.8528
##  27 def1 - 32 def1             5.22e-01 0.1658 Inf   3.147  0.0293
##  27 def1 - 33 def1             4.40e-01 0.1671 Inf   2.634  0.0783
##  27 def1 - 34 def1            -3.50e-02 0.1620 Inf  -0.216  0.9278
##  27 def1 - 35 def1             2.13e-01 0.1702 Inf   1.254  0.4792
##  27 def1 - 36 def1            -4.31e-02 0.1666 Inf  -0.259  0.9097
##  27 def1 - 37 def1             3.37e-01 0.1717 Inf   1.965  0.2155
##  27 def1 - 38 def1             2.47e-01 0.1655 Inf   1.490  0.3788
##  27 def1 - 39 def1             1.97e-01 0.1774 Inf   1.112  0.5389
##  27 def1 - 41 def1             1.94e-01 0.1653 Inf   1.174  0.5122
##  27 def1 - 42 def1             8.04e-02 0.1677 Inf   0.480  0.8236
##  27 def1 - 43 def1             3.12e-01 0.1654 Inf   1.885  0.2379
##  27 def1 - 44 def1            -2.04e-01 0.1674 Inf  -1.217  0.4930
##  27 def1 - 45 def1             1.27e-01 0.1671 Inf   0.762  0.6973
##  27 def1 - 46 def1            -9.05e-03 0.1699 Inf  -0.053  0.9814
##  27 def1 - 47 def1             4.70e-01 0.1644 Inf   2.859  0.0516
##  27 def1 - 48 def1            -2.48e-01 0.1674 Inf  -1.480  0.3821
##  27 def1 - 49 def1             5.29e-02 0.1615 Inf   0.328  0.8829
##  27 def1 - 50 def1             1.79e-01 0.1667 Inf   1.073  0.5539
##  27 def1 - 51 def1            -1.74e-01 0.1659 Inf  -1.049  0.5647
##  27 def1 - 52 def1            -2.12e-02 0.1662 Inf  -0.128  0.9585
##  27 def1 - 53 def1             1.28e-01 0.1654 Inf   0.774  0.6908
##  27 def1 - 54 def1             4.29e-03 0.1640 Inf   0.026  0.9904
##  27 def1 - 55 def1             1.37e-01 0.1647 Inf   0.830  0.6658
##  27 def1 - 56 def1             8.21e-02 0.1718 Inf   0.478  0.8242
##  27 def1 - 57 def1             1.19e-02 0.1678 Inf   0.071  0.9766
##  27 def1 - 58 def1            -4.42e-02 0.1646 Inf  -0.269  0.9062
##  27 def1 - 59 def1             3.06e-01 0.1729 Inf   1.769  0.2759
##  27 def1 - 60 def1             2.00e-01 0.1645 Inf   1.215  0.4934
##  27 def1 - 61 def1            -6.36e-02 0.1667 Inf  -0.382  0.8618
##  28 def1 - 29 def1             1.95e-01 0.1670 Inf   1.166  0.5160
##  28 def1 - 30 def1             1.68e-01 0.1683 Inf   1.000  0.5880
##  28 def1 - 31 def1            -1.68e-01 0.1595 Inf  -1.051  0.5637
##  28 def1 - 32 def1             4.19e-01 0.1697 Inf   2.467  0.1052
##  28 def1 - 33 def1             3.37e-01 0.1648 Inf   2.045  0.1932
##  28 def1 - 34 def1            -1.38e-01 0.1622 Inf  -0.850  0.6576
##  28 def1 - 35 def1             1.10e-01 0.1691 Inf   0.653  0.7443
##  28 def1 - 36 def1            -1.46e-01 0.1675 Inf  -0.872  0.6492
##  28 def1 - 37 def1             2.34e-01 0.1704 Inf   1.376  0.4252
##  28 def1 - 38 def1             1.44e-01 0.1668 Inf   0.862  0.6530
##  28 def1 - 39 def1             9.43e-02 0.1823 Inf   0.517  0.8066
##  28 def1 - 41 def1             9.12e-02 0.1655 Inf   0.551  0.7913
##  28 def1 - 42 def1            -2.25e-02 0.1669 Inf  -0.135  0.9561
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##  28 def1 - 43 def1             2.09e-01 0.1644 Inf   1.270  0.4719
##  28 def1 - 44 def1            -3.07e-01 0.1676 Inf  -1.830  0.2562
##  28 def1 - 45 def1             2.45e-02 0.1652 Inf   0.148  0.9526
##  28 def1 - 46 def1            -1.12e-01 0.1672 Inf  -0.670  0.7376
##  28 def1 - 47 def1             3.67e-01 0.1636 Inf   2.242  0.1423
##  28 def1 - 48 def1            -3.51e-01 0.1662 Inf  -2.111  0.1750
##  28 def1 - 49 def1            -5.00e-02 0.1626 Inf  -0.308  0.8901
##  28 def1 - 50 def1             7.59e-02 0.1655 Inf   0.459  0.8291
##  28 def1 - 51 def1            -2.77e-01 0.1684 Inf  -1.645  0.3226
##  28 def1 - 52 def1            -1.24e-01 0.1640 Inf  -0.757  0.6995
##  28 def1 - 53 def1             2.51e-02 0.1641 Inf   0.153  0.9512
##  28 def1 - 54 def1            -9.86e-02 0.1626 Inf  -0.607  0.7661
##  28 def1 - 55 def1             3.38e-02 0.1623 Inf   0.208  0.9301
##  28 def1 - 56 def1            -2.09e-02 0.1717 Inf  -0.122  0.9601
##  28 def1 - 57 def1            -9.10e-02 0.1645 Inf  -0.553  0.7901
##  28 def1 - 58 def1            -1.47e-01 0.1646 Inf  -0.894  0.6367
##  28 def1 - 59 def1             2.03e-01 0.1719 Inf   1.181  0.5093
##  28 def1 - 60 def1             9.69e-02 0.1642 Inf   0.590  0.7727
##  28 def1 - 61 def1            -1.67e-01 0.1636 Inf  -1.018  0.5780
##  29 def1 - 30 def1            -2.65e-02 0.1625 Inf  -0.163  0.9468
##  29 def1 - 31 def1            -3.62e-01 0.1541 Inf  -2.352  0.1266
##  29 def1 - 32 def1             2.24e-01 0.1677 Inf   1.335  0.4435
##  29 def1 - 33 def1             1.42e-01 0.1630 Inf   0.873  0.6484
##  29 def1 - 34 def1            -3.33e-01 0.1607 Inf  -2.070  0.1860
##  29 def1 - 35 def1            -8.43e-02 0.1625 Inf  -0.519  0.8066
##  29 def1 - 36 def1            -3.41e-01 0.1609 Inf  -2.118  0.1728
##  29 def1 - 37 def1             3.97e-02 0.1709 Inf   0.232  0.9210
##  29 def1 - 38 def1            -5.10e-02 0.1647 Inf  -0.310  0.8898
##  29 def1 - 39 def1            -1.00e-01 0.1775 Inf  -0.566  0.7859
##  29 def1 - 41 def1            -1.04e-01 0.1648 Inf  -0.629  0.7580
##  29 def1 - 42 def1            -2.17e-01 0.1648 Inf  -1.318  0.4501
##  29 def1 - 43 def1             1.40e-02 0.1644 Inf   0.085  0.9741
##  29 def1 - 44 def1            -5.01e-01 0.1615 Inf  -3.105  0.0318
##  29 def1 - 45 def1            -1.70e-01 0.1641 Inf  -1.038  0.5703
##  29 def1 - 46 def1            -3.07e-01 0.1658 Inf  -1.850  0.2485
##  29 def1 - 47 def1             1.72e-01 0.1616 Inf   1.066  0.5566
##  29 def1 - 48 def1            -5.45e-01 0.1616 Inf  -3.376  0.0176
##  29 def1 - 49 def1            -2.45e-01 0.1601 Inf  -1.528  0.3657
##  29 def1 - 50 def1            -1.19e-01 0.1638 Inf  -0.725  0.7138
##  29 def1 - 51 def1            -4.72e-01 0.1574 Inf  -2.996  0.0386
##  29 def1 - 52 def1            -3.19e-01 0.1661 Inf  -1.920  0.2279
##  29 def1 - 53 def1            -1.70e-01 0.1627 Inf  -1.042  0.5677
##  29 def1 - 54 def1            -2.93e-01 0.1609 Inf  -1.823  0.2592
##  29 def1 - 55 def1            -1.61e-01 0.1584 Inf  -1.016  0.5789
##  29 def1 - 56 def1            -2.16e-01 0.1686 Inf  -1.279  0.4684
##  29 def1 - 57 def1            -2.86e-01 0.1654 Inf  -1.728  0.2914
##  29 def1 - 58 def1            -3.42e-01 0.1648 Inf  -2.075  0.1851
##  29 def1 - 59 def1             8.21e-03 0.1677 Inf   0.049  0.9821
##  29 def1 - 60 def1            -9.78e-02 0.1638 Inf  -0.597  0.7693
##  29 def1 - 61 def1            -3.61e-01 0.1650 Inf  -2.190  0.1553
##  30 def1 - 31 def1            -3.36e-01 0.1554 Inf  -2.161  0.1607
##  30 def1 - 32 def1             2.50e-01 0.1652 Inf   1.516  0.3696
##  30 def1 - 33 def1             1.69e-01 0.1651 Inf   1.022  0.5757
##  30 def1 - 34 def1            -3.06e-01 0.1631 Inf  -1.877  0.2400
##  30 def1 - 35 def1            -5.78e-02 0.1665 Inf  -0.347  0.8764
##  30 def1 - 36 def1            -3.14e-01 0.1650 Inf  -1.905  0.2323
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```
##  30 def1 - 37 def1             6.62e-02 0.1695 Inf   0.390  0.8581
##  30 def1 - 38 def1            -2.45e-02 0.1619 Inf  -0.151  0.9520
##  30 def1 - 39 def1            -7.39e-02 0.1774 Inf  -0.417  0.8487
##  30 def1 - 41 def1            -7.71e-02 0.1647 Inf  -0.468  0.8276
##  30 def1 - 42 def1            -1.91e-01 0.1628 Inf  -1.172  0.5132
##  30 def1 - 43 def1             4.05e-02 0.1656 Inf   0.245  0.9149
##  30 def1 - 44 def1            -4.75e-01 0.1658 Inf  -2.865  0.0509
##  30 def1 - 45 def1            -1.44e-01 0.1638 Inf  -0.878  0.6463
##  30 def1 - 46 def1            -2.80e-01 0.1674 Inf  -1.674  0.3115
##  30 def1 - 47 def1             1.99e-01 0.1633 Inf   1.216  0.4930
##  30 def1 - 48 def1            -5.19e-01 0.1629 Inf  -3.185  0.0272
##  30 def1 - 49 def1            -2.18e-01 0.1649 Inf  -1.323  0.4477
##  30 def1 - 50 def1            -9.23e-02 0.1664 Inf  -0.555  0.7901
##  30 def1 - 51 def1            -4.45e-01 0.1674 Inf  -2.659  0.0744
##  30 def1 - 52 def1            -2.92e-01 0.1671 Inf  -1.750  0.2843
##  30 def1 - 53 def1            -1.43e-01 0.1628 Inf  -0.879  0.6458
##  30 def1 - 54 def1            -2.67e-01 0.1596 Inf  -1.672  0.3121
##  30 def1 - 55 def1            -1.34e-01 0.1625 Inf  -0.828  0.6670
##  30 def1 - 56 def1            -1.89e-01 0.1689 Inf  -1.120  0.5355
##  30 def1 - 57 def1            -2.59e-01 0.1663 Inf  -1.559  0.3542
##  30 def1 - 58 def1            -3.15e-01 0.1631 Inf  -1.933  0.2252
##  30 def1 - 59 def1             3.47e-02 0.1713 Inf   0.203  0.9313
##  30 def1 - 60 def1            -7.13e-02 0.1622 Inf  -0.440  0.8373
##  30 def1 - 61 def1            -3.35e-01 0.1659 Inf  -2.018  0.2006
##  31 def1 - 32 def1             5.86e-01 0.1601 Inf   3.661  0.0092
##  31 def1 - 33 def1             5.05e-01 0.1567 Inf   3.220  0.0259
##  31 def1 - 34 def1             2.98e-02 0.1547 Inf   0.192  0.9352
##  31 def1 - 35 def1             2.78e-01 0.1595 Inf   1.743  0.2865
##  31 def1 - 36 def1             2.16e-02 0.1545 Inf   0.140  0.9550
##  31 def1 - 37 def1             4.02e-01 0.1636 Inf   2.457  0.1072
##  31 def1 - 38 def1             3.11e-01 0.1580 Inf   1.971  0.2136
##  31 def1 - 39 def1             2.62e-01 0.1723 Inf   1.521  0.3680
##  31 def1 - 41 def1             2.59e-01 0.1582 Inf   1.636  0.3257
##  31 def1 - 42 def1             1.45e-01 0.1577 Inf   0.920  0.6241
##  31 def1 - 43 def1             3.76e-01 0.1545 Inf   2.436  0.1108
##  31 def1 - 44 def1            -1.39e-01 0.1547 Inf  -0.899  0.6345
##  31 def1 - 45 def1             1.92e-01 0.1539 Inf   1.249  0.4813
##  31 def1 - 46 def1             5.57e-02 0.1584 Inf   0.351  0.8750
##  31 def1 - 47 def1             5.35e-01 0.1516 Inf   3.525  0.0130
##  31 def1 - 48 def1            -1.83e-01 0.1577 Inf  -1.161  0.5184
##  31 def1 - 49 def1             1.18e-01 0.1557 Inf   0.755  0.6995
##  31 def1 - 50 def1             2.44e-01 0.1580 Inf   1.542  0.3603
##  31 def1 - 51 def1            -1.09e-01 0.1605 Inf  -0.681  0.7324
##  31 def1 - 52 def1             4.35e-02 0.1595 Inf   0.273  0.9051
##  31 def1 - 53 def1             1.93e-01 0.1555 Inf   1.240  0.4832
##  31 def1 - 54 def1             6.90e-02 0.1541 Inf   0.448  0.8327
##  31 def1 - 55 def1             2.01e-01 0.1536 Inf   1.311  0.4524
##  31 def1 - 56 def1             1.47e-01 0.1616 Inf   0.908  0.6317
##  31 def1 - 57 def1             7.66e-02 0.1587 Inf   0.483  0.8236
##  31 def1 - 58 def1             2.05e-02 0.1581 Inf   0.130  0.9583
##  31 def1 - 59 def1             3.71e-01 0.1605 Inf   2.309  0.1286
##  31 def1 - 60 def1             2.65e-01 0.1564 Inf   1.691  0.3053
##  31 def1 - 61 def1             1.10e-03 0.1586 Inf   0.007  0.9969
##  32 def1 - 33 def1            -8.16e-02 0.1671 Inf  -0.488  0.8219
##  32 def1 - 34 def1            -5.57e-01 0.1602 Inf  -3.474  0.0144
##  32 def1 - 35 def1            -3.08e-01 0.1710 Inf  -1.802  0.2650
```

```
##  32 def1 - 36 def1            -5.65e-01 0.1682 Inf  -3.358  0.0185
##  32 def1 - 37 def1            -1.84e-01 0.1684 Inf  -1.094  0.5452
##  32 def1 - 38 def1            -2.75e-01 0.1644 Inf  -1.672  0.3121
##  32 def1 - 39 def1            -3.24e-01 0.1760 Inf  -1.842  0.2516
##  32 def1 - 41 def1            -3.27e-01 0.1649 Inf  -1.985  0.2098
##  32 def1 - 42 def1            -4.41e-01 0.1651 Inf  -2.672  0.0719
##  32 def1 - 43 def1            -2.10e-01 0.1650 Inf  -1.272  0.4713
##  32 def1 - 44 def1            -7.25e-01 0.1699 Inf  -4.269  0.0018
##  32 def1 - 45 def1            -3.94e-01 0.1670 Inf  -2.360  0.1248
##  32 def1 - 46 def1            -5.31e-01 0.1696 Inf  -3.128  0.0300
##  32 def1 - 47 def1            -5.17e-02 0.1666 Inf  -0.310  0.8898
##  32 def1 - 48 def1            -7.69e-01 0.1671 Inf  -4.604  0.0008
##  32 def1 - 49 def1            -4.69e-01 0.1654 Inf  -2.833  0.0550
##  32 def1 - 50 def1            -3.43e-01 0.1681 Inf  -2.039  0.1941
##  32 def1 - 51 def1            -6.96e-01 0.1684 Inf  -4.131  0.0026
##  32 def1 - 52 def1            -5.43e-01 0.1689 Inf  -3.214  0.0260
##  32 def1 - 53 def1            -3.93e-01 0.1667 Inf  -2.360  0.1248
##  32 def1 - 54 def1            -5.17e-01 0.1619 Inf  -3.196  0.0271
##  32 def1 - 55 def1            -3.85e-01 0.1648 Inf  -2.336  0.1278
##  32 def1 - 56 def1            -4.40e-01 0.1683 Inf  -2.612  0.0817
##  32 def1 - 57 def1            -5.10e-01 0.1668 Inf  -3.055  0.0342
##  32 def1 - 58 def1            -5.66e-01 0.1659 Inf  -3.411  0.0161
##  32 def1 - 59 def1            -2.16e-01 0.1731 Inf  -1.246  0.4821
##  32 def1 - 60 def1            -3.22e-01 0.1652 Inf  -1.947  0.2218
##  32 def1 - 61 def1            -5.85e-01 0.1649 Inf  -3.549  0.0123
##  33 def1 - 34 def1            -4.75e-01 0.1591 Inf  -2.986  0.0394
##  33 def1 - 35 def1            -2.27e-01 0.1666 Inf  -1.360  0.4325
##  33 def1 - 36 def1            -4.83e-01 0.1639 Inf  -2.947  0.0428
##  33 def1 - 37 def1            -1.03e-01 0.1707 Inf  -0.601  0.7688
##  33 def1 - 38 def1            -1.93e-01 0.1605 Inf  -1.204  0.4993
##  33 def1 - 39 def1            -2.43e-01 0.1800 Inf  -1.348  0.4372
##  33 def1 - 41 def1            -2.46e-01 0.1602 Inf  -1.535  0.3631
##  33 def1 - 42 def1            -3.60e-01 0.1598 Inf  -2.250  0.1411
##  33 def1 - 43 def1            -1.28e-01 0.1631 Inf  -0.787  0.6856
##  33 def1 - 44 def1            -6.44e-01 0.1653 Inf  -3.895  0.0050
##  33 def1 - 45 def1            -3.13e-01 0.1632 Inf  -1.915  0.2293
##  33 def1 - 46 def1            -4.49e-01 0.1565 Inf  -2.869  0.0506
##  33 def1 - 47 def1             2.99e-02 0.1612 Inf   0.185  0.9373
##  33 def1 - 48 def1            -6.88e-01 0.1590 Inf  -4.326  0.0015
##  33 def1 - 49 def1            -3.87e-01 0.1616 Inf  -2.395  0.1188
##  33 def1 - 50 def1            -2.61e-01 0.1596 Inf  -1.636  0.3257
##  33 def1 - 51 def1            -6.14e-01 0.1668 Inf  -3.681  0.0087
##  33 def1 - 52 def1            -4.61e-01 0.1630 Inf  -2.830  0.0551
##  33 def1 - 53 def1            -3.12e-01 0.1623 Inf  -1.922  0.2276
##  33 def1 - 54 def1            -4.36e-01 0.1604 Inf  -2.716  0.0664
##  33 def1 - 55 def1            -3.03e-01 0.1573 Inf  -1.928  0.2268
##  33 def1 - 56 def1            -3.58e-01 0.1691 Inf  -2.117  0.1730
##  33 def1 - 57 def1            -4.28e-01 0.1595 Inf  -2.684  0.0704
##  33 def1 - 58 def1            -4.84e-01 0.1635 Inf  -2.961  0.0415
##  33 def1 - 59 def1            -1.34e-01 0.1641 Inf  -0.817  0.6730
##  33 def1 - 60 def1            -2.40e-01 0.1623 Inf  -1.479  0.3821
##  33 def1 - 61 def1            -5.04e-01 0.1627 Inf  -3.096  0.0321
##  34 def1 - 35 def1             2.48e-01 0.1655 Inf   1.501  0.3750
##  34 def1 - 36 def1            -8.13e-03 0.1630 Inf  -0.050  0.9821
##  34 def1 - 37 def1             3.72e-01 0.1658 Inf   2.246  0.1416
##  34 def1 - 38 def1             2.82e-01 0.1592 Inf   1.769  0.2759
```

```
##  34 def1 - 39 def1             2.32e-01 0.1714 Inf   1.354  0.4351
##  34 def1 - 41 def1             2.29e-01 0.1600 Inf   1.431  0.3991
##  34 def1 - 42 def1             1.15e-01 0.1619 Inf   0.713  0.7193
##  34 def1 - 43 def1             3.47e-01 0.1594 Inf   2.174  0.1585
##  34 def1 - 44 def1            -1.69e-01 0.1645 Inf  -1.026  0.5741
##  34 def1 - 45 def1             1.62e-01 0.1600 Inf   1.015  0.5793
##  34 def1 - 46 def1             2.59e-02 0.1631 Inf   0.159  0.9491
##  34 def1 - 47 def1             5.05e-01 0.1599 Inf   3.157  0.0289
##  34 def1 - 48 def1            -2.13e-01 0.1591 Inf  -1.338  0.4427
##  34 def1 - 49 def1             8.79e-02 0.1613 Inf   0.545  0.7957
##  34 def1 - 50 def1             2.14e-01 0.1594 Inf   1.342  0.4403
##  34 def1 - 51 def1            -1.39e-01 0.1639 Inf  -0.848  0.6578
##  34 def1 - 52 def1             1.37e-02 0.1629 Inf   0.084  0.9741
##  34 def1 - 53 def1             1.63e-01 0.1611 Inf   1.012  0.5801
##  34 def1 - 54 def1             3.93e-02 0.1572 Inf   0.250  0.9131
##  34 def1 - 55 def1             1.72e-01 0.1570 Inf   1.093  0.5452
##  34 def1 - 56 def1             1.17e-01 0.1655 Inf   0.707  0.7205
##  34 def1 - 57 def1             4.69e-02 0.1620 Inf   0.289  0.8983
##  34 def1 - 58 def1            -9.27e-03 0.1605 Inf  -0.058  0.9801
##  34 def1 - 59 def1             3.41e-01 0.1636 Inf   2.084  0.1823
##  34 def1 - 60 def1             2.35e-01 0.1612 Inf   1.457  0.3927
##  34 def1 - 61 def1            -2.87e-02 0.1573 Inf  -0.182  0.9378
##  35 def1 - 36 def1            -2.56e-01 0.1661 Inf  -1.544  0.3596
##  35 def1 - 37 def1             1.24e-01 0.1751 Inf   0.708  0.7205
##  35 def1 - 38 def1             3.33e-02 0.1685 Inf   0.198  0.9327
##  35 def1 - 39 def1            -1.61e-02 0.1811 Inf  -0.089  0.9732
##  35 def1 - 41 def1            -1.93e-02 0.1668 Inf  -0.115  0.9623
##  35 def1 - 42 def1            -1.33e-01 0.1657 Inf  -0.803  0.6782
##  35 def1 - 43 def1             9.84e-02 0.1672 Inf   0.588  0.7728
##  35 def1 - 44 def1            -4.17e-01 0.1675 Inf  -2.491  0.1010
##  35 def1 - 45 def1            -8.59e-02 0.1664 Inf  -0.516  0.8066
##  35 def1 - 46 def1            -2.22e-01 0.1655 Inf  -1.344  0.4396
##  35 def1 - 47 def1             2.56e-01 0.1655 Inf   1.549  0.3582
##  35 def1 - 48 def1            -4.61e-01 0.1681 Inf  -2.743  0.0639
##  35 def1 - 49 def1            -1.60e-01 0.1667 Inf  -0.963  0.6056
##  35 def1 - 50 def1            -3.45e-02 0.1690 Inf  -0.204  0.9312
##  35 def1 - 51 def1            -3.87e-01 0.1623 Inf  -2.387  0.1200
##  35 def1 - 52 def1            -2.35e-01 0.1704 Inf  -1.377  0.4251
##  35 def1 - 53 def1            -8.53e-02 0.1680 Inf  -0.508  0.8096
##  35 def1 - 54 def1            -2.09e-01 0.1648 Inf  -1.269  0.4726
##  35 def1 - 55 def1            -7.67e-02 0.1641 Inf  -0.467  0.8276
##  35 def1 - 56 def1            -1.31e-01 0.1734 Inf  -0.757  0.6995
##  35 def1 - 57 def1            -2.01e-01 0.1694 Inf  -1.189  0.5056
##  35 def1 - 58 def1            -2.58e-01 0.1688 Inf  -1.526  0.3659
##  35 def1 - 59 def1             9.25e-02 0.1738 Inf   0.532  0.8013
##  35 def1 - 60 def1            -1.35e-02 0.1680 Inf  -0.080  0.9746
##  35 def1 - 61 def1            -2.77e-01 0.1686 Inf  -1.642  0.3233
##  36 def1 - 37 def1             3.80e-01 0.1721 Inf   2.211  0.1506
##  36 def1 - 38 def1             2.90e-01 0.1639 Inf   1.768  0.2760
##  36 def1 - 39 def1             2.40e-01 0.1808 Inf   1.329  0.4456
##  36 def1 - 41 def1             2.37e-01 0.1637 Inf   1.449  0.3929
##  36 def1 - 42 def1             1.23e-01 0.1632 Inf   0.757  0.6995
##  36 def1 - 43 def1             3.55e-01 0.1639 Inf   2.164  0.1607
##  36 def1 - 44 def1            -1.61e-01 0.1656 Inf  -0.970  0.6015
##  36 def1 - 45 def1             1.71e-01 0.1630 Inf   1.046  0.5649
##  36 def1 - 46 def1             3.40e-02 0.1656 Inf   0.206  0.9308
```

```
##  36 def1 - 47 def1             5.13e-01 0.1638 Inf   3.131  0.0300
##  36 def1 - 48 def1            -2.05e-01 0.1639 Inf  -1.249  0.4813
##  36 def1 - 49 def1             9.60e-02 0.1620 Inf   0.593  0.7716
##  36 def1 - 50 def1             2.22e-01 0.1644 Inf   1.350  0.4366
##  36 def1 - 51 def1            -1.31e-01 0.1667 Inf  -0.785  0.6857
##  36 def1 - 52 def1             2.19e-02 0.1641 Inf   0.133  0.9565
##  36 def1 - 53 def1             1.71e-01 0.1615 Inf   1.060  0.5591
##  36 def1 - 54 def1             4.74e-02 0.1608 Inf   0.295  0.8963
##  36 def1 - 55 def1             1.80e-01 0.1584 Inf   1.135  0.5311
##  36 def1 - 56 def1             1.25e-01 0.1672 Inf   0.748  0.7018
##  36 def1 - 57 def1             5.50e-02 0.1644 Inf   0.335  0.8815
##  36 def1 - 58 def1            -1.15e-03 0.1639 Inf  -0.007  0.9969
##  36 def1 - 59 def1             3.49e-01 0.1704 Inf   2.048  0.1923
##  36 def1 - 60 def1             2.43e-01 0.1608 Inf   1.511  0.3714
##  36 def1 - 61 def1            -2.05e-02 0.1653 Inf  -0.124  0.9596
##  37 def1 - 38 def1            -9.07e-02 0.1686 Inf  -0.538  0.7995
##  37 def1 - 39 def1            -1.40e-01 0.1803 Inf  -0.777  0.6894
##  37 def1 - 41 def1            -1.43e-01 0.1712 Inf  -0.836  0.6630
##  37 def1 - 42 def1            -2.57e-01 0.1701 Inf  -1.510  0.3714
##  37 def1 - 43 def1            -2.56e-02 0.1675 Inf  -0.153  0.9512
##  37 def1 - 44 def1            -5.41e-01 0.1728 Inf  -3.131  0.0300
##  37 def1 - 45 def1            -2.10e-01 0.1710 Inf  -1.228  0.4889
##  37 def1 - 46 def1            -3.46e-01 0.1724 Inf  -2.009  0.2023
##  37 def1 - 47 def1             1.33e-01 0.1697 Inf   0.781  0.6883
##  37 def1 - 48 def1            -5.85e-01 0.1692 Inf  -3.459  0.0146
##  37 def1 - 49 def1            -2.84e-01 0.1686 Inf  -1.687  0.3068
##  37 def1 - 50 def1            -1.58e-01 0.1720 Inf  -0.921  0.6241
##  37 def1 - 51 def1            -5.11e-01 0.1742 Inf  -2.935  0.0441
##  37 def1 - 52 def1            -3.59e-01 0.1708 Inf  -2.099  0.1787
##  37 def1 - 53 def1            -2.09e-01 0.1695 Inf  -1.234  0.4858
##  37 def1 - 54 def1            -3.33e-01 0.1681 Inf  -1.981  0.2106
##  37 def1 - 55 def1            -2.01e-01 0.1666 Inf  -1.205  0.4993
##  37 def1 - 56 def1            -2.55e-01 0.1761 Inf  -1.449  0.3929
##  37 def1 - 57 def1            -3.25e-01 0.1692 Inf  -1.923  0.2276
##  37 def1 - 58 def1            -3.82e-01 0.1710 Inf  -2.231  0.1450
##  37 def1 - 59 def1            -3.15e-02 0.1748 Inf  -0.180  0.9384
##  37 def1 - 60 def1            -1.37e-01 0.1687 Inf  -0.815  0.6730
##  37 def1 - 61 def1            -4.01e-01 0.1697 Inf  -2.363  0.1245
##  38 def1 - 39 def1            -4.95e-02 0.1756 Inf  -0.282  0.9011
##  38 def1 - 41 def1            -5.26e-02 0.1621 Inf  -0.324  0.8847
##  38 def1 - 42 def1            -1.66e-01 0.1597 Inf  -1.041  0.5682
##  38 def1 - 43 def1             6.50e-02 0.1611 Inf   0.404  0.8524
##  38 def1 - 44 def1            -4.50e-01 0.1670 Inf  -2.697  0.0684
##  38 def1 - 45 def1            -1.19e-01 0.1609 Inf  -0.741  0.7057
##  38 def1 - 46 def1            -2.56e-01 0.1664 Inf  -1.537  0.3624
##  38 def1 - 47 def1             2.23e-01 0.1635 Inf   1.365  0.4302
##  38 def1 - 48 def1            -4.94e-01 0.1589 Inf  -3.111  0.0313
##  38 def1 - 49 def1            -1.94e-01 0.1636 Inf  -1.184  0.5082
##  38 def1 - 50 def1            -6.78e-02 0.1605 Inf  -0.422  0.8468
##  38 def1 - 51 def1            -4.21e-01 0.1674 Inf  -2.513  0.0976
##  38 def1 - 52 def1            -2.68e-01 0.1654 Inf  -1.620  0.3308
##  38 def1 - 53 def1            -1.19e-01 0.1616 Inf  -0.734  0.7083
##  38 def1 - 54 def1            -2.42e-01 0.1582 Inf  -1.532  0.3641
##  38 def1 - 55 def1            -1.10e-01 0.1604 Inf  -0.686  0.7298
##  38 def1 - 56 def1            -1.65e-01 0.1683 Inf  -0.978  0.5974
##  38 def1 - 57 def1            -2.35e-01 0.1617 Inf  -1.452  0.3928
```

```
##  38 def1 - 58 def1            -2.91e-01 0.1630 Inf  -1.785  0.2714
##  38 def1 - 59 def1             5.92e-02 0.1686 Inf   0.351  0.8750
##  38 def1 - 60 def1            -4.68e-02 0.1618 Inf  -0.289  0.8983
##  38 def1 - 61 def1            -3.10e-01 0.1642 Inf  -1.890  0.2368
##  39 def1 - 41 def1            -3.13e-03 0.1801 Inf  -0.017  0.9939
##  39 def1 - 42 def1            -1.17e-01 0.1804 Inf  -0.647  0.7466
##  39 def1 - 43 def1             1.14e-01 0.1751 Inf   0.654  0.7441
##  39 def1 - 44 def1            -4.01e-01 0.1803 Inf  -2.225  0.1470
##  39 def1 - 45 def1            -6.98e-02 0.1799 Inf  -0.388  0.8593
##  39 def1 - 46 def1            -2.06e-01 0.1824 Inf  -1.131  0.5320
##  39 def1 - 47 def1             2.73e-01 0.1782 Inf   1.530  0.3649
##  39 def1 - 48 def1            -4.45e-01 0.1785 Inf  -2.494  0.1006
##  39 def1 - 49 def1            -1.44e-01 0.1780 Inf  -0.811  0.6746
##  39 def1 - 50 def1            -1.84e-02 0.1808 Inf  -0.102  0.9666
##  39 def1 - 51 def1            -3.71e-01 0.1823 Inf  -2.036  0.1947
##  39 def1 - 52 def1            -2.18e-01 0.1815 Inf  -1.203  0.4994
##  39 def1 - 53 def1            -6.92e-02 0.1794 Inf  -0.385  0.8612
##  39 def1 - 54 def1            -1.93e-01 0.1772 Inf  -1.089  0.5465
##  39 def1 - 55 def1            -6.05e-02 0.1775 Inf  -0.341  0.8788
##  39 def1 - 56 def1            -1.15e-01 0.1851 Inf  -0.622  0.7605
##  39 def1 - 57 def1            -1.85e-01 0.1806 Inf  -1.026  0.5741
##  39 def1 - 58 def1            -2.41e-01 0.1802 Inf  -1.340  0.4414
##  39 def1 - 59 def1             1.09e-01 0.1850 Inf   0.587  0.7734
##  39 def1 - 60 def1             2.63e-03 0.1794 Inf   0.015  0.9952
##  39 def1 - 61 def1            -2.61e-01 0.1792 Inf  -1.456  0.3928
##  41 def1 - 42 def1            -1.14e-01 0.1616 Inf  -0.704  0.7218
##  41 def1 - 43 def1             1.18e-01 0.1646 Inf   0.715  0.7189
##  41 def1 - 44 def1            -3.98e-01 0.1669 Inf  -2.384  0.1205
##  41 def1 - 45 def1            -6.67e-02 0.1631 Inf  -0.409  0.8504
##  41 def1 - 46 def1            -2.03e-01 0.1650 Inf  -1.231  0.4877
##  41 def1 - 47 def1             2.76e-01 0.1619 Inf   1.703  0.3007
##  41 def1 - 48 def1            -4.42e-01 0.1618 Inf  -2.731  0.0648
##  41 def1 - 49 def1            -1.41e-01 0.1632 Inf  -0.865  0.6523
##  41 def1 - 50 def1            -1.52e-02 0.1593 Inf  -0.096  0.9697
##  41 def1 - 51 def1            -3.68e-01 0.1664 Inf  -2.212  0.1506
##  41 def1 - 52 def1            -2.15e-01 0.1634 Inf  -1.317  0.4501
##  41 def1 - 53 def1            -6.60e-02 0.1625 Inf  -0.406  0.8517
##  41 def1 - 54 def1            -1.90e-01 0.1561 Inf  -1.216  0.4930
##  41 def1 - 55 def1            -5.74e-02 0.1606 Inf  -0.357  0.8736
##  41 def1 - 56 def1            -1.12e-01 0.1695 Inf  -0.661  0.7410
##  41 def1 - 57 def1            -1.82e-01 0.1599 Inf  -1.139  0.5297
##  41 def1 - 58 def1            -2.38e-01 0.1614 Inf  -1.477  0.3831
##  41 def1 - 59 def1             1.12e-01 0.1686 Inf   0.663  0.7404
##  41 def1 - 60 def1             5.76e-03 0.1623 Inf   0.035  0.9871
##  41 def1 - 61 def1            -2.58e-01 0.1628 Inf  -1.583  0.3445
##  42 def1 - 43 def1             2.31e-01 0.1649 Inf   1.403  0.4127
##  42 def1 - 44 def1            -2.84e-01 0.1675 Inf  -1.697  0.3031
##  42 def1 - 45 def1             4.70e-02 0.1639 Inf   0.287  0.8984
##  42 def1 - 46 def1            -8.95e-02 0.1645 Inf  -0.544  0.7958
##  42 def1 - 47 def1             3.89e-01 0.1639 Inf   2.376  0.1218
##  42 def1 - 48 def1            -3.28e-01 0.1628 Inf  -2.016  0.2009
##  42 def1 - 49 def1            -2.75e-02 0.1639 Inf  -0.168  0.9447
##  42 def1 - 50 def1             9.85e-02 0.1626 Inf   0.605  0.7668
##  42 def1 - 51 def1            -2.54e-01 0.1660 Inf  -1.533  0.3641
##  42 def1 - 52 def1            -1.02e-01 0.1658 Inf  -0.613  0.7640
##  42 def1 - 53 def1             4.77e-02 0.1625 Inf   0.293  0.8967
```

```
##  42 def1 - 54 def1           -7.61e-02 0.1578 Inf  -0.483  0.8236
##  42 def1 - 55 def1            5.63e-02 0.1595 Inf   0.353  0.8750
##  42 def1 - 56 def1            1.64e-03 0.1632 Inf   0.010  0.9961
##  42 def1 - 57 def1           -6.85e-02 0.1634 Inf  -0.419  0.8478
##  42 def1 - 58 def1           -1.25e-01 0.1642 Inf  -0.759  0.6995
##  42 def1 - 59 def1            2.25e-01 0.1696 Inf   1.330  0.4454
##  42 def1 - 60 def1            1.19e-01 0.1612 Inf   0.741  0.7057
##  42 def1 - 61 def1           -1.44e-01 0.1643 Inf  -0.877  0.6465
##  43 def1 - 44 def1           -5.16e-01 0.1622 Inf  -3.178  0.0277
##  43 def1 - 45 def1           -1.84e-01 0.1618 Inf  -1.139  0.5297
##  43 def1 - 46 def1           -3.21e-01 0.1643 Inf  -1.953  0.2200
##  43 def1 - 47 def1            1.58e-01 0.1617 Inf   0.978  0.5974
##  43 def1 - 48 def1           -5.60e-01 0.1625 Inf  -3.442  0.0151
##  43 def1 - 49 def1           -2.59e-01 0.1624 Inf  -1.593  0.3403
##  43 def1 - 50 def1           -1.33e-01 0.1651 Inf  -0.805  0.6774
##  43 def1 - 51 def1           -4.86e-01 0.1665 Inf  -2.917  0.0455
##  43 def1 - 52 def1           -3.33e-01 0.1658 Inf  -2.008  0.2023
##  43 def1 - 53 def1           -1.84e-01 0.1593 Inf  -1.153  0.5221
##  43 def1 - 54 def1           -3.07e-01 0.1614 Inf  -1.905  0.2323
##  43 def1 - 55 def1           -1.75e-01 0.1604 Inf  -1.091  0.5457
##  43 def1 - 56 def1           -2.30e-01 0.1702 Inf  -1.350  0.4366
##  43 def1 - 57 def1           -3.00e-01 0.1633 Inf  -1.836  0.2539
##  43 def1 - 58 def1           -3.56e-01 0.1646 Inf  -2.163  0.1607
##  43 def1 - 59 def1           -5.84e-03 0.1633 Inf  -0.036  0.9871
##  43 def1 - 60 def1           -1.12e-01 0.1638 Inf  -0.683  0.7314
##  43 def1 - 61 def1           -3.75e-01 0.1647 Inf  -2.279  0.1344
##  44 def1 - 45 def1            3.31e-01 0.1641 Inf   2.018  0.2006
##  44 def1 - 46 def1            1.95e-01 0.1677 Inf   1.161  0.5180
##  44 def1 - 47 def1            6.74e-01 0.1612 Inf   4.178  0.0023
##  44 def1 - 48 def1           -4.40e-02 0.1664 Inf  -0.264  0.9076
##  44 def1 - 49 def1            2.57e-01 0.1616 Inf   1.589  0.3426
##  44 def1 - 50 def1            3.83e-01 0.1650 Inf   2.319  0.1278
##  44 def1 - 51 def1            2.98e-02 0.1652 Inf   0.180  0.9384
##  44 def1 - 52 def1            1.83e-01 0.1682 Inf   1.085  0.5484
##  44 def1 - 53 def1            3.32e-01 0.1628 Inf   2.038  0.1944
##  44 def1 - 54 def1            2.08e-01 0.1630 Inf   1.276  0.4697
##  44 def1 - 55 def1            3.40e-01 0.1624 Inf   2.097  0.1788
##  44 def1 - 56 def1            2.86e-01 0.1725 Inf   1.657  0.3178
##  44 def1 - 57 def1            2.16e-01 0.1674 Inf   1.289  0.4636
##  44 def1 - 58 def1            1.60e-01 0.1670 Inf   0.955  0.6105
##  44 def1 - 59 def1            5.10e-01 0.1679 Inf   3.035  0.0356
##  44 def1 - 60 def1            4.04e-01 0.1653 Inf   2.442  0.1104
##  44 def1 - 61 def1            1.40e-01 0.1674 Inf   0.837  0.6630
##  45 def1 - 46 def1           -1.36e-01 0.1644 Inf  -0.830  0.6658
##  45 def1 - 47 def1            3.42e-01 0.1584 Inf   2.161  0.1607
##  45 def1 - 48 def1           -3.75e-01 0.1627 Inf  -2.307  0.1286
##  45 def1 - 49 def1           -7.45e-02 0.1630 Inf  -0.457  0.8295
##  45 def1 - 50 def1            5.14e-02 0.1613 Inf   0.319  0.8860
##  45 def1 - 51 def1           -3.01e-01 0.1663 Inf  -1.813  0.2608
##  45 def1 - 52 def1           -1.49e-01 0.1647 Inf  -0.902  0.6332
##  45 def1 - 53 def1            6.35e-04 0.1608 Inf   0.004  0.9979
##  45 def1 - 54 def1           -1.23e-01 0.1559 Inf  -0.790  0.6840
##  45 def1 - 55 def1            9.27e-03 0.1608 Inf   0.058  0.9801
##  45 def1 - 56 def1           -4.54e-02 0.1691 Inf  -0.268  0.9062
##  45 def1 - 57 def1           -1.16e-01 0.1630 Inf  -0.709  0.7205
##  45 def1 - 58 def1           -1.72e-01 0.1609 Inf  -1.067  0.5566
```

```
##  45 def1 - 59 def1             1.78e-01 0.1690 Inf   1.056  0.5605
##  45 def1 - 60 def1             7.24e-02 0.1603 Inf   0.452  0.8311
##  45 def1 - 61 def1            -1.91e-01 0.1639 Inf  -1.166  0.5162
##  46 def1 - 47 def1             4.79e-01 0.1635 Inf   2.930  0.0445
##  46 def1 - 48 def1            -2.39e-01 0.1643 Inf  -1.453  0.3928
##  46 def1 - 49 def1             6.20e-02 0.1655 Inf   0.374  0.8656
##  46 def1 - 50 def1             1.88e-01 0.1668 Inf   1.127  0.5328
##  46 def1 - 51 def1            -1.65e-01 0.1683 Inf  -0.980  0.5973
##  46 def1 - 52 def1            -1.22e-02 0.1675 Inf  -0.073  0.9766
##  46 def1 - 53 def1             1.37e-01 0.1647 Inf   0.832  0.6655
##  46 def1 - 54 def1             1.33e-02 0.1634 Inf   0.082  0.9744
##  46 def1 - 55 def1             1.46e-01 0.1607 Inf   0.907  0.6319
##  46 def1 - 56 def1             9.11e-02 0.1718 Inf   0.530  0.8013
##  46 def1 - 57 def1             2.10e-02 0.1665 Inf   0.126  0.9592
##  46 def1 - 58 def1            -3.52e-02 0.1650 Inf  -0.213  0.9288
##  46 def1 - 59 def1             3.15e-01 0.1694 Inf   1.859  0.2456
##  46 def1 - 60 def1             2.09e-01 0.1660 Inf   1.259  0.4773
##  46 def1 - 61 def1            -5.46e-02 0.1629 Inf  -0.335  0.8814
##  47 def1 - 48 def1            -7.18e-01 0.1615 Inf  -4.442  0.0011
##  47 def1 - 49 def1            -4.17e-01 0.1603 Inf  -2.601  0.0833
##  47 def1 - 50 def1            -2.91e-01 0.1629 Inf  -1.787  0.2711
##  47 def1 - 51 def1            -6.44e-01 0.1660 Inf  -3.877  0.0051
##  47 def1 - 52 def1            -4.91e-01 0.1630 Inf  -3.012  0.0377
##  47 def1 - 53 def1            -3.42e-01 0.1624 Inf  -2.105  0.1765
##  47 def1 - 54 def1            -4.66e-01 0.1595 Inf  -2.918  0.0455
##  47 def1 - 55 def1            -3.33e-01 0.1566 Inf  -2.127  0.1700
##  47 def1 - 56 def1            -3.88e-01 0.1694 Inf  -2.290  0.1318
##  47 def1 - 57 def1            -4.58e-01 0.1637 Inf  -2.797  0.0579
##  47 def1 - 58 def1            -5.14e-01 0.1619 Inf  -3.174  0.0277
##  47 def1 - 59 def1            -1.64e-01 0.1685 Inf  -0.973  0.5999
##  47 def1 - 60 def1            -2.70e-01 0.1618 Inf  -1.669  0.3134
##  47 def1 - 61 def1            -5.33e-01 0.1637 Inf  -3.260  0.0236
##  48 def1 - 49 def1             3.01e-01 0.1625 Inf   1.851  0.2484
##  48 def1 - 50 def1             4.27e-01 0.1611 Inf   2.648  0.0763
##  48 def1 - 51 def1             7.38e-02 0.1670 Inf   0.442  0.8368
##  48 def1 - 52 def1             2.27e-01 0.1648 Inf   1.375  0.4252
##  48 def1 - 53 def1             3.76e-01 0.1623 Inf   2.316  0.1278
##  48 def1 - 54 def1             2.52e-01 0.1606 Inf   1.570  0.3508
##  48 def1 - 55 def1             3.84e-01 0.1552 Inf   2.478  0.1035
##  48 def1 - 56 def1             3.30e-01 0.1697 Inf   1.944  0.2228
##  48 def1 - 57 def1             2.60e-01 0.1612 Inf   1.611  0.3347
##  48 def1 - 58 def1             2.04e-01 0.1640 Inf   1.241  0.4832
##  48 def1 - 59 def1             5.54e-01 0.1651 Inf   3.354  0.0185
##  48 def1 - 60 def1             4.48e-01 0.1633 Inf   2.741  0.0641
##  48 def1 - 61 def1             1.84e-01 0.1633 Inf   1.128  0.5326
##  49 def1 - 50 def1             1.26e-01 0.1621 Inf   0.777  0.6894
##  49 def1 - 51 def1            -2.27e-01 0.1630 Inf  -1.392  0.4181
##  49 def1 - 52 def1            -7.41e-02 0.1628 Inf  -0.455  0.8302
##  49 def1 - 53 def1             7.52e-02 0.1610 Inf   0.467  0.8276
##  49 def1 - 54 def1            -4.86e-02 0.1601 Inf  -0.304  0.8922
##  49 def1 - 55 def1             8.38e-02 0.1590 Inf   0.527  0.8030
##  49 def1 - 56 def1             2.91e-02 0.1691 Inf   0.172  0.9420
##  49 def1 - 57 def1            -4.10e-02 0.1615 Inf  -0.254  0.9117
##  49 def1 - 58 def1            -9.71e-02 0.1632 Inf  -0.595  0.7704
##  49 def1 - 59 def1             2.53e-01 0.1686 Inf   1.500  0.3750
##  49 def1 - 60 def1             1.47e-01 0.1593 Inf   0.922  0.6233
```

```
##  49 def1 - 61 def1            -1.17e-01 0.1619 Inf  -0.720  0.7165
##  50 def1 - 51 def1            -3.53e-01 0.1670 Inf  -2.113  0.1743
##  50 def1 - 52 def1            -2.00e-01 0.1658 Inf  -1.207  0.4980
##  50 def1 - 53 def1            -5.08e-02 0.1631 Inf  -0.311  0.8894
##  50 def1 - 54 def1            -1.75e-01 0.1580 Inf  -1.105  0.5412
##  50 def1 - 55 def1            -4.22e-02 0.1615 Inf  -0.261  0.9085
##  50 def1 - 56 def1            -9.68e-02 0.1703 Inf  -0.568  0.7840
##  50 def1 - 57 def1            -1.67e-01 0.1616 Inf  -1.033  0.5729
##  50 def1 - 58 def1            -2.23e-01 0.1639 Inf  -1.361  0.4323
##  50 def1 - 59 def1             1.27e-01 0.1682 Inf   0.755  0.6995
##  50 def1 - 60 def1             2.10e-02 0.1633 Inf   0.129  0.9585
##  50 def1 - 61 def1            -2.42e-01 0.1629 Inf  -1.489  0.3788
##  51 def1 - 52 def1             1.53e-01 0.1691 Inf   0.904  0.6327
##  51 def1 - 53 def1             3.02e-01 0.1661 Inf   1.819  0.2599
##  51 def1 - 54 def1             1.78e-01 0.1608 Inf   1.108  0.5391
##  51 def1 - 55 def1             3.11e-01 0.1642 Inf   1.892  0.2366
##  51 def1 - 56 def1             2.56e-01 0.1683 Inf   1.521  0.3679
##  51 def1 - 57 def1             1.86e-01 0.1677 Inf   1.109  0.5391
##  51 def1 - 58 def1             1.30e-01 0.1663 Inf   0.780  0.6883
##  51 def1 - 59 def1             4.80e-01 0.1723 Inf   2.786  0.0594
##  51 def1 - 60 def1             3.74e-01 0.1665 Inf   2.245  0.1416
##  51 def1 - 61 def1             1.10e-01 0.1654 Inf   0.667  0.7388
##  52 def1 - 53 def1             1.49e-01 0.1599 Inf   0.934  0.6201
##  52 def1 - 54 def1             2.55e-02 0.1620 Inf   0.157  0.9496
##  52 def1 - 55 def1             1.58e-01 0.1603 Inf   0.985  0.5949
##  52 def1 - 56 def1             1.03e-01 0.1712 Inf   0.603  0.7681
##  52 def1 - 57 def1             3.31e-02 0.1596 Inf   0.208  0.9301
##  52 def1 - 58 def1            -2.30e-02 0.1587 Inf  -0.145  0.9535
##  52 def1 - 59 def1             3.27e-01 0.1685 Inf   1.941  0.2237
##  52 def1 - 60 def1             2.21e-01 0.1616 Inf   1.368  0.4284
##  52 def1 - 61 def1            -4.24e-02 0.1625 Inf  -0.261  0.9085
##  53 def1 - 54 def1            -1.24e-01 0.1587 Inf  -0.780  0.6883
##  53 def1 - 55 def1             8.63e-03 0.1600 Inf   0.054  0.9814
##  53 def1 - 56 def1            -4.60e-02 0.1687 Inf  -0.273  0.9051
##  53 def1 - 57 def1            -1.16e-01 0.1623 Inf  -0.716  0.7187
##  53 def1 - 58 def1            -1.72e-01 0.1575 Inf  -1.094  0.5452
##  53 def1 - 59 def1             1.78e-01 0.1646 Inf   1.081  0.5495
##  53 def1 - 60 def1             7.18e-02 0.1595 Inf   0.450  0.8316
##  53 def1 - 61 def1            -1.92e-01 0.1634 Inf  -1.173  0.5128
##  54 def1 - 55 def1             1.32e-01 0.1580 Inf   0.838  0.6628
##  54 def1 - 56 def1             7.78e-02 0.1618 Inf   0.480  0.8236
##  54 def1 - 57 def1             7.63e-03 0.1596 Inf   0.048  0.9821
##  54 def1 - 58 def1            -4.85e-02 0.1573 Inf  -0.308  0.8898
##  54 def1 - 59 def1             3.02e-01 0.1668 Inf   1.808  0.2628
##  54 def1 - 60 def1             1.96e-01 0.1577 Inf   1.240  0.4832
##  54 def1 - 61 def1            -6.79e-02 0.1600 Inf  -0.425  0.8458
##  55 def1 - 56 def1            -5.47e-02 0.1668 Inf  -0.328  0.8829
##  55 def1 - 57 def1            -1.25e-01 0.1613 Inf  -0.773  0.6909
##  55 def1 - 58 def1            -1.81e-01 0.1612 Inf  -1.122  0.5347
##  55 def1 - 59 def1             1.69e-01 0.1641 Inf   1.031  0.5735
##  55 def1 - 60 def1             6.32e-02 0.1580 Inf   0.400  0.8538
##  55 def1 - 61 def1            -2.00e-01 0.1613 Inf  -1.242  0.4832
##  56 def1 - 57 def1            -7.01e-02 0.1701 Inf  -0.412  0.8496
##  56 def1 - 58 def1            -1.26e-01 0.1674 Inf  -0.754  0.6998
##  56 def1 - 59 def1             2.24e-01 0.1756 Inf   1.275  0.4697
##  56 def1 - 60 def1             1.18e-01 0.1678 Inf   0.702  0.7218
```

```
##  56 def1 - 61 def1             -1.46e-01 0.1660 Inf  -0.877  0.6463
##  57 def1 - 58 def1             -5.62e-02 0.1637 Inf  -0.343  0.8775
##  57 def1 - 59 def1              2.94e-01 0.1664 Inf   1.767  0.2766
##  57 def1 - 60 def1              1.88e-01 0.1623 Inf   1.158  0.5199
##  57 def1 - 61 def1             -7.55e-02 0.1611 Inf  -0.469  0.8276
##  58 def1 - 59 def1              3.50e-01 0.1694 Inf   2.067  0.1871
##  58 def1 - 60 def1              2.44e-01 0.1600 Inf   1.526  0.3659
##  58 def1 - 61 def1             -1.94e-02 0.1602 Inf  -0.121  0.9601
##  59 def1 - 60 def1             -1.06e-01 0.1691 Inf  -0.627  0.7586
##  59 def1 - 61 def1             -3.70e-01 0.1690 Inf  -2.187  0.1557
##  60 def1 - 61 def1             -2.63e-01 0.1627 Inf  -1.620  0.3308
##
## Results are given on the log (not the response) scale.
## P value adjustment: fdr method for 6903 tests
```

```
PH.S1 <- as.data.frame(cld(multcomp_dev_S1, Letters = letters, adjust = "fdr", decreasing = T))
```

19 lines selected

```
regressionA.19lines <- glmer(eggsp ~ treatment * variety + (1 | block), family = Gamma(link = "log"),
    data = ovilines[ovilines$treatment %in% c("1", "8", "11", "12", "15", "16", "28",
        "30", "32", "37", "38", "39", "42", "48", "54", "56", "59", "60", "61"),
        ])


Anova(regressionA.19lines, type = "III", tewtst = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: eggsp
##                     Chisq Df Pr(>Chisq)
## (Intercept)       88.3942  1  < 2.2e-16 ***
## treatment         39.4720 18   0.002462 **
## variety            0.0001  1   0.992916
## treatment:variety 18.2349 18   0.440280
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
regressionA.19lines.2 <- glmer(eggsp ~ treatment + variety + (1 | block), family = Gamma(link = "log"),
    data = ovilines[ovilines$treatment %in% c("1", "8", "11", "12", "15", "16", "28",
        "30", "32", "37", "38", "39", "42", "48", "54", "56", "59", "60", "61"),
        ])

Anova(regressionA.19lines.2, type = "III", tewtst = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: eggsp
##               Chisq Df Pr(>Chisq)
## (Intercept) 120.0201  1  < 2.2e-16 ***
## treatment    46.6382 18  0.0002393 ***
## variety       3.2324  1  0.0721966 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
regressionA.19lines.3 <- glmer(eggsp ~ treatment + (1 | block), family = Gamma(link = "log"),
    data = ovilines[ovilines$treatment %in% c("1", "8", "11", "12", "15", "16", "28",
        "30", "32", "37", "38", "39", "42", "48", "54", "56", "59", "60", "61"),
        ])
Anova(regressionA.19lines.3, type = "III", tewtst = "Chi")
```

```
## Analysis of Deviance Table (Type III Wald chisquare tests)
##
## Response: eggsp
##               Chisq Df Pr(>Chisq)
## (Intercept) 130.063  1  < 2.2e-16 ***
## treatment    45.952 18  0.0003015 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
multcomp_dev_2A_19lines <- emmeans(regressionA.19lines.3, pairwise ~ treatment, adjust = "fdr",
    decreasing = T)
PH.2A.19lines <- as.data.frame(cld(multcomp_dev_2A_19lines, Letters = letters, adjust = "fdr",
    decreasing = T))
```

Figure 2S

Data set

Files= File =“Figure3A & Figure 1S & Figure 2S.txt”

ovilines - data set in R

block - Experimental block

sample - plant number

variety - Plant variety (castlemart = WT or def1= def-1)

phenotype - if inbred line “inbred” or benchmark control “controls”

treatment - Mite population (Inbred line number, outbred line “O” or benchmark treatment - inducer “I”, suppressor “S” or clean “C”)

replicate - replicate number for each treatment

survfemales - females that survived in the end of the infestation

totalfemales - total number of females (alive and dead) in the end of the infestation

eggs - eggs oviposited by the females

survmean- average female survival; results from: survmean=(survfemales_1+totalfemales)/2

eggsmean - Eggs per female (Fecundity); results from: eggsp=(eggs_1/survmean_1)

and File =“Figure 3B_C & Figure 2S.txt”

gen.lines- data set in R

block - Experimental block sample - plant number phenotype - if inbred line “inbred” or benchmark control “controls” target - target gene (IIc - WIPII_IIc; IIf - WIPI-IIf) treatment - Mite population (Inbred line number, outbred line “O” or benchmark treatment - inducer “I”, suppressor “S” or clean “C”) norm.exp - Normalized expression scaled - Normalized expression scaled to the minimum mean replicate - replicate number for each treatment

Fecundity WT vs WIPI-IIc

```
corr.all.IIc <-  merge(ovilines[ovilines$plantvar=="castlemart",], gen.lines[gen.lines$target=="IIc",], by=c("bloc


#with log normalization
corr.wt.IIc.n <- cor.test(log(corr.all.IIc[corr.all.IIc$treatment%in%c("I","S","O","C")==F,]$norm.exp), corr.all.I

corr.wt.IIc.n
```

```
##
##  Pearson's product-moment correlation
##
## data:  log(corr.all.IIc[corr.all.IIc$treatment %in% c("I", "S", "O", "C") == F, ]$norm.exp) and corr.all.IIc[co
## t = -0.8207, df = 107, p-value = 0.4136
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  -0.2632761  0.1106568
## sample estimates:
##         cor
## -0.07909115
```

Fecundity WT vs WIPI-IIf

```
corr.all.IIf <-  merge(ovilines[ovilines$plantvar=="castlemart",], gen.lines[gen.lines$target=="IIf",], by=c("sampl


#with normalization
corr.wt.IIf.n <- cor.test(log(corr.all.IIf[corr.all.IIf$treatment%in%c("I","S","O","C")==F,]$norm.exp), corr.all.I

corr.wt.IIf.n
```

```
##
##  Pearson's product-moment correlation
##
## data:  log(corr.all.IIf[corr.all.IIf$treatment %in% c("I", "S", "O", "C") == F, ]$norm.exp) and corr.all.IIf[co
## t = 0.81051, df = 109, p-value = 0.4194
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  -0.1105884  0.2600413
## sample estimates:
##        cor
## 0.07739994
```

##Fecundity def-1 vs WIPI-IIc

```
(ovidef<-ddply(ovilines[ovilines$treatment!="C"&ovilines$treatment!="NA"&ovilines$variety=="def1",], .(phenotype,t
```

```
##    phenotype treatment     mean2        sd        se  n
## 1   controls         I 11.663415 4.3806646 0.5162663 72
## 2   controls         S 11.127191 3.3217819 0.4058202 67
## 3   controls         O  7.718358 4.6298796 2.0705451  5
```

```
## 4     inbred         1  5.088196 1.7434318 0.7117531  6
## 5     inbred         2  7.711744 2.4834938 0.9386724  7
## 6     inbred         3  6.801657 2.0452034 0.8349508  6
## 7     inbred         4  9.758581 4.3756498 1.7863515  6
## 8     inbred         5  9.455453 4.6741341 1.9082073  6
## 9     inbred         6  6.066734 1.2994350 0.5304921  6
## 10    inbred         7  6.901702 4.2754766 1.7454560  6
## 11    inbred         8  6.694671 4.4941538 1.8347306  6
## 12    inbred         9  7.991489 2.9960669 1.3398819  5
## 13    inbred        10  8.926154 3.2378176 1.4479961  5
## 14    inbred        11  8.771571 3.4046394 1.3899382  6
## 15    inbred        12  7.185959 2.7216728 1.1111183  6
## 16    inbred        13  5.795455 1.8220099 0.7438324  6
## 17    inbred        14  9.910442 5.9023986 2.4096441  6
## 18    inbred        15  6.395249 3.9660116 1.6191175  6
## 19    inbred        16  6.604580 3.8853816 1.4685362  7
## 20    inbred        17  6.477349 2.6424808 1.0787883  6
## 21    inbred        18  7.237273 4.2325759 1.8928655  5
## 22    inbred        19  3.385933 0.7462223 0.3731111  4
## 23    inbred        20  6.365751 4.9162309 2.1986053  5
## 24    inbred        22  7.681044 3.5956212 1.4679062  6
## 25    inbred        23  4.896051 3.8497038 1.7216399  5
## 26    inbred        24  6.467754 4.0031688 1.6342868  6
## 27    inbred        25  6.450269 3.4399737 1.5384030  5
## 28    inbred        26  8.579330 4.2660549 1.7416096  6
## 29    inbred        27  8.671756 3.9905394 1.6291309  6
## 30    inbred        28  9.003030 2.7349146 1.2230910  5
## 31    inbred        29  6.443072 2.9795963 1.2164151  6
## 32    inbred        30  6.810352 3.3843433 1.3816524  6
## 33    inbred        31  8.789190 2.7900147 1.0545264  7
## 34    inbred        32  5.814990 2.4100646 1.0778136  5
## 35    inbred        33  6.314616 4.1920503 1.5844461  7
## 36    inbred        34  8.683606 2.2109188 0.8356488  7
## 37    inbred        35  6.381066 3.6680258 1.4974653  6
## 38    inbred        36  7.520907 3.9659449 1.6190902  6
## 39    inbred        37  6.252522 4.6112281 2.0622039  5
## 40    inbred        38  6.173246 1.8247653 0.7449573  6
## 41    inbred        39  7.478052 3.9955291 1.9977646  4
## 42    inbred        41  7.606161 4.0241483 1.6428517  6
## 43    inbred        42  5.697421 1.4852183 0.6063378  6
## 44    inbred        43  5.410587 2.7444593 1.1204208  6
## 45    inbred        44 11.991292 4.6148311 2.0638152  5
## 46    inbred        45  6.994921 3.1243197 1.2754982  6
## 47    inbred        46  9.388581 5.2366900 2.3419190  5
## 48    inbred        47  6.495894 3.3331305 1.3607448  6
## 49    inbred        48 10.005226 3.8013492 1.5518943  6
## 50    inbred        49 10.315573 4.4338147 1.9828622  5
## 51    inbred        50  7.203131 2.1193644 0.8652269  6
## 52    inbred        51 11.633478 5.2003333 2.1230272  6
## 53    inbred        52  8.743787 3.3891789 1.3836265  6
## 54    inbred        53  5.887427 4.6589374 1.9020032  6
## 55    inbred        54  7.143939 3.5399415 1.4451751  6
## 56    inbred        55  6.831306 3.8426084 1.5687383  6
## 57    inbred        56  6.912206 4.6485384 2.0788896  5
## 58    inbred        57  7.026501 2.8508385 1.1638500  6
## 59    inbred        58  8.443038 3.9969742 1.6317579  6
```

```
## 60    inbred        59  5.159209 3.1825102 1.4232618  5
## 61    inbred        60  6.713978 2.9785789 1.2159997  6
## 62    inbred        61  8.377713 3.9382316 1.6077763  6
```

```
(F3B_summary <- ddply(gen.lines[gen.lines$target=="IIc",], .(treatment, phenotype), summarize, mean2=mean(log(scale
```

```
##    treatment phenotype      mean2        sd        se n
## 1          C  controls -1.3312204 2.2663895 1.1331948 4
## 2          I  controls  4.5038825 0.6531949 0.3265975 4
## 3          S  controls  2.0978091 0.9021876 0.4510938 4
## 4          O  controls  0.1887992 2.5219000 1.1278280 5
## 5          1     lines  2.3770651 1.7613945 0.7877196 5
## 6          8     lines  1.3113274 2.6598378 1.1895156 5
## 7         11     lines  1.0941465 1.0881055 0.4442172 6
## 8         12     lines  2.2535335 1.6431799 0.6210636 7
## 9         15     lines  1.6491508 2.2684496 0.9260907 6
## 10        16     lines  1.3873527 1.6265984 0.6147964 7
## 11        28     lines  1.9982130 0.9618881 0.3926892 6
## 12        30     lines  2.1120155 2.0732470 0.8463995 6
## 13        32     lines  2.7963000 2.4241529 1.0841141 5
## 14        37     lines  1.4278665 2.1736626 0.9720915 5
## 15        38     lines  4.3394735 1.2638430 0.5159617 6
## 16        39     lines  3.2771655 2.1895490 0.9791961 5
## 17        42     lines  2.9039533 2.4200294 1.0822700 5
## 18        48     lines  3.3701497 2.1293747 0.8693136 6
## 19        54     lines  2.8122130 1.3193959 0.4986848 7
## 20        56     lines  2.4940097 1.8234295 0.7444120 6
## 21        59     lines  2.1100136 1.8293030 0.7468098 6
## 22        60     lines  1.7785459 1.9659139 0.8025810 6
## 23        61     lines  1.5634845 0.7759351 0.3167742 6
```

```
corr.all.IIc <-  merge(ovidef, F3B_summary, by=c("treatment"))


#with log normalization
corr.wt.IIc.n <- cor.test(corr.all.IIc[corr.all.IIc$treatment%in%c("I","S","O","C")==F,]$mean2.y, corr.all.IIc[cor

corr.wt.IIc.n
```

```
##
##  Pearson's product-moment correlation
##
## data:  corr.all.IIc[corr.all.IIc$treatment %in% c("I", "S", "O", "C") == F, ]$mean2.y and corr.all.IIc[corr.all
## t = -0.21384, df = 17, p-value = 0.8332
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  -0.4943740  0.4121092
## sample estimates:
##         cor
## -0.05179534
```

Figure 3S

```
(ovidef<-ddply(ovilines[ovilines$treatment!="C"&ovilines$treatment!="NA"&ovilines$variety=="def1",], .(phenotype,t
```

```
##    phenotype treatment     mean2        sd        se  n
## 1   controls         I 11.663415 4.3806646 0.5162663 72
## 2   controls         S 11.127191 3.3217819 0.4058202 67
## 3   controls         0  7.718358 4.6298796 2.0705451  5
## 4     inbred         1  5.088196 1.7434318 0.7117531  6
## 5     inbred         2  7.711744 2.4834938 0.9386724  7
## 6     inbred         3  6.801657 2.0452034 0.8349508  6
## 7     inbred         4  9.758581 4.3756498 1.7863515  6
## 8     inbred         5  9.455453 4.6741341 1.9082073  6
## 9     inbred         6  6.066734 1.2994350 0.5304921  6
## 10    inbred         7  6.901702 4.2754766 1.7454560  6
## 11    inbred         8  6.694671 4.4941538 1.8347306  6
## 12    inbred         9  7.991489 2.9960669 1.3398819  5
## 13    inbred        10  8.926154 3.2378176 1.4479961  5
## 14    inbred        11  8.771571 3.4046394 1.3899382  6
## 15    inbred        12  7.185959 2.7216728 1.1111183  6
## 16    inbred        13  5.795455 1.8220099 0.7438324  6
## 17    inbred        14  9.910442 5.9023986 2.4096441  6
## 18    inbred        15  6.395249 3.9660116 1.6191175  6
## 19    inbred        16  6.604580 3.8853816 1.4685362  7
## 20    inbred        17  6.477349 2.6424808 1.0787883  6
## 21    inbred        18  7.237273 4.2325759 1.8928655  5
## 22    inbred        19  3.385933 0.7462223 0.3731111  4
## 23    inbred        20  6.365751 4.9162309 2.1986053  5
## 24    inbred        22  7.681044 3.5956212 1.4679062  6
## 25    inbred        23  4.896051 3.8497038 1.7216399  5
## 26    inbred        24  6.467754 4.0031688 1.6342868  6
## 27    inbred        25  6.450269 3.4399737 1.5384030  5
## 28    inbred        26  8.579330 4.2660549 1.7416096  6
## 29    inbred        27  8.671756 3.9905394 1.6291309  6
## 30    inbred        28  9.003030 2.7349146 1.2230910  5
## 31    inbred        29  6.443072 2.9795963 1.2164151  6
## 32    inbred        30  6.810352 3.3843433 1.3816524  6
## 33    inbred        31  8.789190 2.7900147 1.0545264  7
## 34    inbred        32  5.814990 2.4100646 1.0778136  5
## 35    inbred        33  6.314616 4.1920503 1.5844461  7
## 36    inbred        34  8.683606 2.2109188 0.8356488  7
## 37    inbred        35  6.381066 3.6680258 1.4974653  6
## 38    inbred        36  7.520907 3.9659449 1.6190902  6
## 39    inbred        37  6.252522 4.6112281 2.0622039  5
## 40    inbred        38  6.173246 1.8247653 0.7449573  6
## 41    inbred        39  7.478052 3.9955291 1.9977646  4
## 42    inbred        41  7.606161 4.0241483 1.6428517  6
## 43    inbred        42  5.697421 1.4852183 0.6063378  6
## 44    inbred        43  5.410587 2.7444593 1.1204208  6
## 45    inbred        44 11.991292 4.6148311 2.0638152  5
## 46    inbred        45  6.994921 3.1243197 1.2754982  6
## 47    inbred        46  9.388581 5.2366900 2.3419190  5
## 48    inbred        47  6.495894 3.3331305 1.3607448  6
## 49    inbred        48 10.005226 3.8013492 1.5518943  6
## 50    inbred        49 10.315573 4.4338147 1.9828622  5
## 51    inbred        50  7.203131 2.1193644 0.8652269  6
## 52    inbred        51 11.633478 5.2003333 2.1230272  6
```

```
## 53    inbred        52  8.743787 3.3891789 1.3836265  6
## 54    inbred        53  5.887427 4.6589374 1.9020032  6
## 55    inbred        54  7.143939 3.5399415 1.4451751  6
## 56    inbred        55  6.831306 3.8426084 1.5687383  6
## 57    inbred        56  6.912206 4.6485384 2.0788896  5
## 58    inbred        57  7.026501 2.8508385 1.1638500  6
## 59    inbred        58  8.443038 3.9969742 1.6317579  6
## 60    inbred        59  5.159209 3.1825102 1.4232618  5
## 61    inbred        60  6.713978 2.9785789 1.2159997  6
## 62    inbred        61  8.377713 3.9382316 1.6077763  6
```

```
(F3B_summary <- ddply(gen.lines[gen.lines$target=="IIf",], .(treatment, phenotype), summarize, mean2=mean(log(scale
```

```
##    treatment phenotype       mean2        sd        se n
## 1          C  controls -0.03598606 0.3124230 0.1562115 4
## 2          I  controls  3.74867160 0.7249428 0.3624714 4
## 3          S  controls  0.42990369 1.1366144 0.5683072 4
## 4          O  controls  1.89390613 1.9140738 0.9570369 4
## 5          1     lines  4.52044608 2.8294625 1.2653741 5
## 6          8     lines  3.03020685 3.6113720 1.6150547 5
## 7         11     lines  2.66019894 0.8520216 0.3478364 6
## 8         12     lines  2.52100519 0.9339799 0.3530112 7
## 9         15     lines  2.96597737 2.2115682 0.9028689 6
## 10        16     lines  2.23845382 2.0315598 0.7678574 7
## 11        28     lines  3.70119155 0.8308096 0.3391766 6
## 12        30     lines  3.05052547 2.7115099 1.1069693 6
## 13        32     lines  1.61848773 2.8483156 1.2738055 5
## 14        37     lines  2.31145439 2.5485384 1.1397410 5
## 15        38     lines  4.68606075 0.9761624 0.3985166 6
## 16        39     lines  1.57102063 1.8355349 0.8208762 5
## 17        42     lines  5.17747508 2.8335701 1.2672111 5
## 18        48     lines  3.88998973 1.7703760 0.7227530 6
## 19        54     lines  3.49170217 1.6499647 0.6236280 7
## 20        56     lines  3.38793374 1.3476067 0.5501581 6
## 21        59     lines  2.93391323 2.7280713 1.1137305 6
## 22        60     lines  2.77278017 2.2351424 0.9124931 6
## 23        61     lines  2.68069986 1.3585533 0.5546270 6
```

```
corr.all.IIf <-  merge(ovidef, F3B_summary, by=c("treatment"))

corr.wt.IIf.n <- cor.test(corr.all.IIf[corr.all.IIf$treatment%in%c("I","S","O","C")==F,]$mean2.y, corr.all.IIf[cor

corr.wt.IIf.n
```

```
##
##  Pearson's product-moment correlation
##
## data:  corr.all.IIf[corr.all.IIf$treatment %in% c("I", "S", "O", "C") == F, ]$mean2.y and corr.all.IIf[corr.all
## t = -0.38602, df = 17, p-value = 0.7043
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  -0.5251889  0.3769535
## sample estimates:
##         cor
## -0.09321582
```