

Crazy Sequential Representations: Base 11 up to 16 (0000 up to XXXX)

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Historic Overview

Decimal Crazy Sequential Representations

Inder Taneja published five papers on arXiv (for 1 up to 11111):

ARXIV Version	Evaluated Range	Allowed Operations	Missing Increasing	Missing Decreasing	Valid Representations
1 (06-02-2013) ¹	44 to 1000	+ * ^	2	10	1902 (of 1914)
2 (19-03-2013) ²	44 to 4444	+ * ^	50	53	8699 (of 8802)
3 (05-06-2013) ³	44 to 11111	+ * ^ ()	590	605	20941 (of 22136)
4 (05-08-2013) ⁴	0 to 11111	+ * ^ () -	449	315	21460 (of 22224)
5 (08-01-2014) ⁵	0 to 11111	+ * ^ () - /	9	10	22205 (of 22224)

Authors published three papers on Figshare/Zenodo (for -2147483647 up to 2147483647):

Date	Title
12-06-2018	Crazy Sequential Representations: Exhaustive Search ⁶
14-06-2018	Crazy Sequential Representations: Negative Integers ⁷
18-06-2018	Crazy Sequential Representations: Without Subtraction and/or Division ⁸

Inder Taneja published three papers on RGMIA (for 11112 up to 30000):

Date	Title
12-09-2018	Crazy Representations of Natural Numbers From 11112 to 20000 ⁹
10-11-2018	Crazy Representations of Natural Numbers From 20001 to 25000 ¹⁰
10-11-2018	Crazy Representations of Natural Numbers From 25001 to 30000 ¹¹

Authors published one paper on Figshare/Zenodo (comparing results for 11112 up to 30000):

Date	Title
06-12-2018	Crazy Sequential Representations: 11112 up to 30000 ¹²

Authors published three papers on Figshare/Zenodo (improving our previous work):

Date	Title
14-12-2018	Crazy Sequential Representations: Simplifications (01) ¹³
24-12-2018	Crazy Sequential Representations: Fill the Gaps (01) ¹⁴
02-01-2019	Crazy Sequential Representations: Fill the Gaps (02) ¹⁵

Historic Overview

Non-Decimal Crazy Sequential Representations

Tim Wylie published one paper on arXiv (focusing on bases 3 through 10):

Date	Title
11-10-2018	Crazy Sequential Representations of Numbers for Small Bases ¹⁶

Authors published seven paper on Figshare/Zenodo (focusing on bases 11 through 16):

Date	Title
04-01-2018	Crazy Sequential Representations: Base 11 (0000 up to AAAA) ¹⁷
04-01-2018	Crazy Sequential Representations: Base 12 (0000 up to BBBB) ¹⁸
04-01-2018	Crazy Sequential Representations: Base 13 (0000 up to CCCC) ¹⁹
04-01-2018	Crazy Sequential Representations: Base 14 (0000 up to DDDD) ²⁰
04-01-2018	Crazy Sequential Representations: Base 15 (0000 up to EEEE) ²¹
04-01-2018	Crazy Sequential Representations: Base 16 (0000 up to FFFF) ²²
04-01-2018	Crazy Sequential Representations: Base 16 (-FFFF up to FFFF) ²³

Aim

Identify missing genuine crazy sequential representations for the '0000 up to XXXX' range:

Base	Increasing	Decreasing
11	7A88, 8473, 8536, 8550, 8594, 85AA, 8770, 8776, 8A80, 8A97, 8AA0, 94A4, 9577, 9585, 9600, 9607, 9652, 9721, 9751, 9753, 9787, 9807, 9833, 9839, 9850, 985A, A248, A257, A331, A440, A454, A568, A5A2, A655, A720, A989	7361, 7486, 769A, 7794, 7A25, 7A43, 7A73, 8054, 8056, 8086, 8094, 80A3, 8136, 8150, 8159, 8178, 8386, 8565, 8599, 89A5, 8A41, 8A91, 9085, 9150, 91A2, 9229, 9382, 9412, 9486, 9487, 9494, 94A3, 94A4, 94A6, 9544, 954A, 9550, 9555, 9570, 9586, 95A3, 95A4, 95A9, 9625, 9647, 9648, 9707, 9727, 9A04, 9A12, 9AA3, 9AA7, A007, A03A, A045, A094, A097, A144, A158, A159, A371, A378, A408, A467, A477, A482, A483, A48A, A499, A531, A547, A561, A619, A651, A666, A680, A736, A737, A75A, A763, A769, A835
12	B039, B264, B647, B860, B909, B933, B934	
13		2A62, 2B12, 5243, 5921, 6415, 7281, 7B75, 8C3B, 9083, A402, B676
14		91C1, 93A1, A3C7, B164, B5A4, B694, C014, C791
15	18B2, 43E7	5AE7, 5B1D, 682A, 71B8, 7E71, 7E80, 8090, 8160, 81C2, 8E9C, 96A3, 9E96, A1DE, A462, A58B, A718, A7D6, B19B, B4BA, BCCD, BD01, BD1B, C3DE, C4B3, C549, C5CE, C7A5, C7C9, C8BD, C948, C963, CE99, D016, D081, D39E, D66B, D818, DB11, EAAA, EB7A, EC24
16		

Crazy Sequential Representations

Two valid base 11 crazy sequential representations, and their base 10 representation:

5491₁₀ 4142₁₁	378₁₀ 314₁₁
$-1_{11}/2_{11} * (3_{11} - 4_{11} + 5_{11})^{6_{11} + 7_{11}} * 89A$	$A9_{11}^{(8_{11} - 7_{11})} * 6_{11} / (-5_{11} + 4_{11} + 3_{11}) + 21_{11}$
$-1_{10}/2_{10} * (3_{10} - 4_{10} + 5_{10})^{6_{10} + 7_{10}} * 1077_{10}$	$119_{10}^{(8_{10} - 7_{10})} * 6_{10} / (-5_{10} + 4_{10} + 3_{10}) + 21_{10}$

Two valid base 12 crazy sequential representations, and their base 10 representation:

6853₁₀ 3B71₁₂	419₁₀ 2AB₁₂
$-1_{12}/2_{12} * (3_{12} - 4_{12} + 5_{12})^{6_{12} + 7_{12}} * 89A_{12} + B_{12}$	$B_{12} + A9_{12}^{(8_{12} - 7_{12})} * 6_{12} / (-5_{12} + 4_{12} + 3_{12}) + 21_{12}$
$-1_{10}/2_{10} * (3_{10} - 4_{10} + 5_{10})^{6_{10} + 7_{10}} * 1270_{10} + 11_{10}$	$11_{10} + 129_{10}^{(8_{10} - 7_{10})} * 6_{10} / (-5_{10} + 4_{10} + 3_{10}) + 21_{10}$

Two valid base 13 crazy sequential representations, and their base 10 representation:

8460₁₀ 3B0A₁₃	605₁₀ 377₁₃
$-1_{13}/2_{13} * (3_{13} - 4_{13} + 5_{13})^{6_{13} + 7_{13}} * 89A_{13} + BC_{13}$	$CB_{13} + A9_{13}^{(8_{13} - 7_{13})} * 6_{13} / (-5_{13} + 4_{13} + 3_{13}) + 21_{13}$
$-1_{10}/2_{10} * (3_{10} - 4_{10} + 5_{10})^{6_{10} + 7_{10}} * 1479_{10} + 155_{10}$	$167_{10} + 139_{10}^{(8_{10} - 7_{10})} * 6_{10} / (-5_{10} + 4_{10} + 3_{10}) + 21_{10}$

Two valid base 14 crazy sequential representations, and their base 10 representation:

12217₁₀ 4649₁₄	302₁₀ 178₁₄
$-1_{14}/2_{14} * (3_{14} - 4_{14} + 5_{14})^{6_{14} + 7_{14}} * 89A_{14} + BCD_{14}$	$D_{14} - CB_{14} + A9_{14}^{(8_{14} - 7_{14})} * 6_{14} / (-5_{14} + 4_{14} + 3_{14}) + 21_{14}$
$-1_{10}/2_{10} * (3_{10} - 4_{10} + 5_{10})^{6_{10} + 7_{10}} * 1704_{10} + 2337_{10}$	$13_{10} - 179_{10} + 149_{10}^{(8_{10} - 7_{10})} * 6_{10} / (-5_{10} + 4_{10} + 3_{10}) + 21_{10}$

Two valid base 15 crazy sequential representations, and their base 10 representation:

14221₁₀ 4331₁₅	530₁₀ 255₁₅
$-1_{15}/2_{15} * (3_{15} - 4_{15} + 5_{15})^{6_{15} + 7_{15}} * 89A_{15} + BCD_{15} - E_{15}$	$ED_{15} - CB_{15} + A9_{15}^{(8_{15} - 7_{15})} * 6_{15} / (-5_{15} + 4_{15} + 3_{15}) + 21_{15}$
$-1_{10}/2_{10} * (3_{10} - 4_{10} + 5_{10})^{6_{10} + 7_{10}} * 1945_{10} + 2668_{10} - 14_{10}$	$223_{10} - 191_{10} + 159_{10}^{(8_{10} - 7_{10})} * 6_{10} / (-5_{10} + 4_{10} + 3_{10}) + 21_{10}$

Two valid base 16 crazy sequential representations, and their base 10 representation:

16148₁₀ 3F14₁₆	4402₁₀ 1132₁₆
$-1_{16}/2_{16} * (3_{16} - 4_{16} + 5_{16})^{6_{16} + 7_{16}} * 89A_{16} + BCD_{16} - EF_{16}$	$FED_{16} - CB_{16} + A9_{16}^{(8_{16} - 7_{16})} * 6_{16} / (-5_{16} + 4_{16} + 3_{16}) + 21_{16}$
$-1_{10}/2_{10} * (3_{10} - 4_{10} + 5_{10})^{6_{10} + 7_{10}} * 2202_{10} + 3021_{10} - 239_{10}$	$4077_{10} - 203_{10} + 169_{10}^{(8_{10} - 7_{10})} * 6_{10} / (-5_{10} + 4_{10} + 3_{10}) + 21_{10}$

Definitions

Please refer to our previous work ¹⁷⁻²² for definitions and various clarifying examples.

Conclusions

For base 11 up to base 15, the '0000 up to XXXX' range was completed, see tables.
For base 16, the '0000 up to XXXX' range was already complete.

Base 11 - Increasing

Base 11	Decimal	Genuine Crazy Sequential Representation
7A88	10623	$1-2-3*-45*67-(89+A)$
8473	11212	$-1*-2*(3-(-4+5)+6*(789-A))$
8536	11292	$1-(2-3)-(-4*-5*6*(-78-9)-A)$
8550	11308	$-1*2*(-3+4-5*(6+7))*(89-A)$
8594	11356	$1*-2+3*-456*-7-89+A$
85AA	11373	$-1/(2/-3/(45-6+7*89A))$
8770	11572	$1-2+34-567*(-8-9)+A$
8776	11578	$12+3*456*(7-8/-9A)$
8A80	11946	$1-23-(456+78)*(-9-A)$
8A97	11964	$1+2-(-34+(5+6)*(-7-89A))$
8AA0	11968	$-1*(2+3*(-456+789)*-A)$
94A4	12577	$12+3-45+(-6-7)*-89*A$
9577	12668	$1*2*(3+4*-5-67*(-89+A))$
9585	12677	$-12+3*(-4-56*-7*(-8+9))*A$
9600	12705	$-12-3*4-(-567+8)*(9+A)$
9607	12712	$1*2+(2-3+4^5/6+7)*8*9-A$
9652	12762	$-1-2-34*-5*(6-7*(-8-(-9+A)))$
9721	12849	$-1+23*456-78*9-A$
9751	12882	$-1*-2*3*(-4+56+7*8)*(9+A)$
9753	12884	$-123-4+(567+8)*(9+A)$
9787	12921	$-1-2*(3+4)*(5+6-789+A)$
9807	12954	$-1-2-3-4*-5*6*(7-8+9A)$
9833	12983	$-12-3*-4*(5-(6-7)+89A)$
9839	12989	$-12+3*(-456+7)*-8+9*A$
9850	13002	$1+(2+3)^4/-5*(-6-7)*8-9+A$
985A	13012	$-1*-2*(3+4-5-6*(-7-89A))$
A248	13604	$-1+2-34*-5*67+8-9*-A$
A257	13614	$1*2+34*5*67-(-89-A)$
A331	13707	$-1+23-4*-56*-7*-8+9+A$
A440	13838	$1/(-2/34/(56+7)/(8-9-A))$
A454	13853	$-1+2*-3-4*-5*(67*8+9A)$
A568	13989	$1*-2*-3/4*(56-78*-9A)$
A5A2	14027	$-1*(-23+4-5+(-6-7)*89A)$
A655	14096	$1-23*-456-(7*-8+9)*A$
A720	14179	$1+2^3+(45+67+8)*9A$
A989	14496	$1*(23-(4+5))*(6+(-7+89)*A)$

Base 11 - Decreasing

Base 11	Decimal	Genuine Crazy Sequential Representation
7361	09747	$A-98*7*(6+5-43+21)$
7486	09895	$-A+98+(-76-54)*-3*21$
769A	10152	$A-98*(-76-5-(4+3))-21$
7794	10267	$A+9*-87*6*(5-4-3)-(2+1)$
7A25	10554	$A+9*(8+765)-(-43^2-1)$
7A43	10574	$-A+9*-8*7*(-65+43+2+1)$
7A73	10607	$A9+8*(7-6+54-3)*21$
8054	10707	$A+((-9-8)*-7*6*-5+4)*-3-2+1$
8056	10709	$A987+6*-5^4+32/-1$
8086	10742	$A+9-8+7*(-6-5+4*321)$
8094	10751	$A9+8+76*(54-3*-21)$
80A3	10761	$-A9-8*(7-65-4)*(-3+21)$
8136	10808	$-A-9*(-8-765-4*3*21)$
8150	10824	$-A9-87-6-5*-43^2-1$
8159	10833	$-A+(-9*(-8-(7/(-6+5))^4)+3)/2+1$
8178	10854	$-A+(-9-8)*(7-6+5*-4^3*2)+1$
8386	11105	$-A-9*-87*(-6-5+4-(3-21))$
8565	11324	$A+9+87*(65+43-(-2+1))$
8599	11361	$-A9-8*-7*(-65+4*3*21)$
89A5	11852	$-A-9*8+765*(4+3^2/1)$
8A41	11903	$A*(-987+6/(-5/4)-3/2)*-1$
8A91	11958	$-A9876/5/(-4/-3)/-2/1$
9085	12072	$A*(9+876/-5)*4*-3/-2/-1$
9150	12155	$A9/8/(7/(6+5))/(432+1))$
91A2	12212	$A*(987-6/-5-4/-3^2*1)$
9229	12252	$A*(987-6/-5-(-4-32-1))$
9382	12432	$A9-8-(76+5)*4*-32+1$
9412	12476	$-A-9*8-7*(65+4+3)*-21$
9486	12557	$A98-7+6*5^4*3-2-1$
9487	12558	$-A-9+8*7*(65+4)*3-21$
9494	12566	$A9+8*7+6*-54*-32+1$
94A3	12576	$A987-6*5*4^3+2/1$
94A4	12577	$A9-(-8+76*-5*(-4+32-1))$
94A6	12579	$-A-9+8*7*(65+4)*3-2*1$
9544	12632	$-A-987*(-6-5)-(-4+321)$
954A	12638	$-A+(9+8)*(7+6+(5+4)^3+2)*1$
9550	12639	$-A-9*-8*(-7+6+54*3)-21$
9555	12644	$A-987*(-6-5)-4-321$
9570	12661	$-A-9+8-(76+5)*4*(-32-1)$
9586	12678	$-A-9*(-8+7)*-6*-5*43+2*-1$
95A3	12697	$A+9876-5*4^3-21$
95A4	12698	$-A+9876+5*-4^3-2^1$
95A9	12703	$-A+9876+5*-4^3-(-2-1)$
9625	12732	$-A+98-(-7+6*-54)*-32*-1$
9647	12756	$A+9*87+(-6-5)*43*-21$
9648	12757	$-A-9*8*(-7+6)*-54*-3+21$
9707	12833	$A+9*-87*(6-5+4)*-3-2*1$
9727	12855	$-A/(-9/(8765+4-3/2+1))$
9A04	13193	$-A9-8*(7+6)*(-54+3*-21)$
9A12	13202	$A*(9-8)*(7+6/5)*(4+3)*21$
9AA3	13302	$A-9+87*(-6+5)*-4*32+1$
9AA7	13306	$-A9+8+7*-6*-5*4^3-21$
A007	13317	$A-9+8*-76*5*-4+32+1$

Base 11 - Decreasing (cont'd)

Base 11	Decimal	Genuine Crazy Sequential Representation
A03A	13353	$A98-76*(-5+4*-32)+1$
A045	13359	$A+9876-5*-4^3-2+1$
A094	13413	$A-98-7*(-6+5-4)*321$
A097	13416	$A-987*(-6-5)-(4-321)$
A144	13479	$-A9-8-7*6^5/-4-3+2-1$
A158	13494	$A-9-(8+7+6+5)*-432-1$
A159	13495	$-A+9876-5*(-43*2-1)$
A371	13751	$A987+6*(54+3)*-2+1$
A378	13758	$A987-6+(-5-4)^3-2+1$
A408	13802	$A+98-7*(6*-543/2+1)$
A467	13867	$A987-6-5^4+3-(-2+1)$
A477	13878	$A987+6-5^4+3/(2-1)$
A48A	13892	$-A-9*(8*-7*-6-5)*(-4-(3/2)^{-1})$
A561	13982	$-A-9+8*7*(6-5+4)^3*2+1$
A482	13884	$A987+6-(5^4-3^2*1)$
A483	13885	$A987+6-5^4+3^2+1$
A499	13902	$A987+6-5^4+3^(2+1)$
A531	13949	$A9+8-(-76+54)^3+2/-1$
A547	13966	$A987-6*(-5+43*2-1)$
A619	14056	$A9-8*(-765+43)*2+1$
A651	14092	$A987+6*(-5-4^3+2^1)$
A666	14108	$-A+9-8*7*6*(5-43)-2-1$
A680	14124	$A987+6*(-54-3)-2*-1$
A736	14196	$A+9*(8+7)*-6+543*21$
A737	14197	$-A+987*-6*(5-4-3)-2+1$
A75A	14222	$A987+65+(-4-3)^(2+1)$
A763	14226	$-A98-76+((5^4)^(3/2))+1$
A769	14232	$A9+(-8*7*6)*(5-43)+2-1$
A835	14316	$A-98-7*(6+54*-32*1)$
7361	09747	$A-98*7*(6+5-43+21)$
7486	09895	$-A+98+(-76-54)*-3*21$
769A	10152	$A-98*(-76-5-(4+3))-21$
7794	10267	$A+9*-87*6*(5-4-3)-(2+1)$
7A25	10554	$A+9*(8+765)-(-43^2-1)$
7A43	10574	$-A+9*-8*7*(-65+43+2+1)$
7A73	10607	$A9+8*(7-6+54-3)*21$
8056	10709	$A987+6*-5^4+32/-1$
8086	10742	$A+9-8+7*(-6-5+4*321)$

Base 12 - Increasing

Base 12	Decimal	Genuine Crazy Sequential Representation
B039	19053	$((-1+(-2*((3-4)-5678)))+(-9-AB))$
B264	19372	$-1+234*(56-7)+(-8+9)*A+B$
B647	19927	$1+2*(-34+5-6)*(-7-89-AB)$
B860	20232	$-1-23-4*-5-(67+89)*A*-B$
B909	20313	$12-34+(-567+89*-A)*-B$
B933	20343	$1+23*4*(56-7)-89A*-B$
B934	20344	$-1+23+45-(-678-9)*(A+B)$

Base 13 - Decreasing

Base 13	Decimal	Genuine Crazy Sequential Representation
2A62	06164	$CB - (A+9) - (8^* - 76^*5 - 4^*321)$
2B12	06268	$-CB + A98 + 7^* - 6^* (-54 - 32)^*1$
5243	11378	$CB - A98^* (-7+6)^*5 - 4^* - 321$
5921	12533	$C - (-B - A^* (9+876) - 54^* (-3-21))$
6415	13876	$-C + B^* - A9^* - 8 - 7^* (65-4)^* - 3 - 2 - 1$
7281	15822	$-C - B - (A^* (-987-6) + 5 - (4-321))$
7B75	17334	$C - B^*A^*9 + 8765 + 4 - 321$
8C3B	19654	$-C + BA9^*8 + 76 - 5^*432^* - 1$
9083	19880	$-C + B^*A98 + 76 - 5 + 43^* (-2-1)$
A402	22648	$C - BA9^* - 8 - 76^* - 54 + 32^* - 1$
B676	25278	$-C + BA98 - (-7^* - 65 + 43^*2 + 1)$

Base 14 - Decreasing

Base 14	Decimal	Genuine Crazy Sequential Representation
91C1	25061	$-D - C^* (B+A) + 9876 - 543 - 2 - 1$
93A1	25425	$D + CBA + 987^*6 + 5 + 4321$
A3C7	28203	$D + CB^*A + (-98+76)^* - 5^* - 4^* - 32^*1$
B164	30468	$-D - CB + A987 + 654 - 3^* - 21$
B5A4	31308	$D + CB + A98 - 7^*6^* (-54 - 321)$
B694	31490	$-DCBA + 98^*76^*5 + (-4+3)^*2^*1$
C014	32946	$DC - (BA - 9876^*5/4 + 32^*1)$
C791	34427	$-DC - (BA-9) + 8^*7^* (-6+5)^* (-4-321)$

Base 15 - Increasing

Base 15	Decimal	Genuine Crazy Sequential Representation
18B2	05342	$-1^*2^* (3+4+5 - (6+7-8) - 9 - (AB+C^*DE))$
43E7	14392	$-12 - (345 - 67^*89 - ABC - DE)$

Base 15 - Decreasing

Base 15	Decimal	Genuine Crazy Sequential Representation
5AE7	19342	$E-D+CBA-9*87-6-54-321$
5B1D	19378	$E+D-C*BA*-9-(-87+6+5*(-43-(2+1)))$
682A	22090	$-E-DCB+A9+8+7654-3-2*-1$
71B8	24023	$-E+DCB-(-A+9*-876)-(-54*32+1)$
7E71	26881	$E-DCB-A+98*76+5*-4*-321$
7E80	26895	$E+D-CB*-A-98-(-7654-32/1)$
8090	27135	$E+DCBA+9*876+543*-21$
8160	27315	$-E-(-D+CB*A9-876)+54*321$
81C2	27407	$-ED+CB+A987-(-65+4)*-3*21$
8E9C	30297	$-E-D+C*BA*9*8-76+5432+1$
96A3	31878	$E*DC*(-B+A)*(-9+8)*(-76-5-(-43*2-1))$
9E96	33666	$-E-(-D-(CBA9+8)-76*-54)-321$
A1DE	34184	$E+DCB+A+98+(-7-6)*(543*-2-1)$
A462	34742	$E-DC-(-B-A987)-(-6*-5+432+1)$
A58B	35006	$-E+DC*BA-(-9+876-(-5-4))+321$
A718	35348	$ED+CBA+9876-5*(4-3)-21$
A7D6	35526	$E-D-CB+A987-6+5*-4*3*(2+1)$
B19B	37496	$ED+CB-(A987-6+543-2)*-1$
B4BA	38200	$-EDC-BA+9*-87-6543*-2-1$
BCCD	40018	$ED-C-(-B-A)*(-9+876-5)-(-4+3)-21$
BD01	40051	$-E+DC*BA-(98-76)*-5*4*-3*2*-1$
BD1B	40076	$E+DCB-A+9+8+76+543*21$
C3DE	41384	$((((E+D)-((C-BA98)+7))-65)-(-43*21))$
C4B3	41568	$-E+D+CBA9-87-(654+3*(2+1))$
C549	41694	$-E-D+CBA9+8+7-654+3-2*1$
C5CE	41819	$-E-D+CBA9+8-76-543+2+1$
C7A5	42230	$-ED+CBA9-(-8-7*-65)-(-4-3+21)$
C7C9	42264	$EDC-BA9*-8+7+6+5432^1$
C8BD	42478	$EDC-(-B-A98+76)-543*-21$
C948	42593	$ED*CB*(A-(9-87+65)-(43-21))$
C963	42618	$E-D-(-C*-B-A-(-98+7)-6543*2)-1$
CE99	43794	$-ED-CB-A+9+87-6*-54*-3*-21$
D016	43896	$E+D+C*-BA*-9-(-8-7654+3*21)$
D081	43996	$ED+CBA9-(8+7*(-65-4))-(-32-1)$
D39E	44699	$E+DCBA-987+65-4-(3+2)+1$
D66B	45326	$EDCB-A*9*-8*-7+(6-54)*(-3+2+1)$
D818	45698	$E+DCBA-9+87+6-543+2*-1$
DB11	46366	$E+DC*(-BA+98)*-7-6+5*(4+3*-2)*1$
EAAA	49660	$EDCB+A+9+87+65-432*1$
EB7A	49840	$-E*(D+CBA+98*-7-65-4*3)*2*-1$
EC24	49984	$EDCB+A-9*(8+7)+(6+54)*-3+2*-1$

Noteworthy

Increasing base 11 crazy sequential representation with 4 division operations:

Base 11	Decimal	Genuine Crazy Sequential Representation
A440	13838	$1/((-2/34/(56+7))/(8-9-A))$

Decimal representation:

$$1/((-2/37/(61+7))/(8-9-10)) = \frac{\frac{1}{-2}}{37} = \frac{\frac{1}{-2}}{37} = \frac{68}{-11} = 13838$$

Decreasing base 11 crazy sequential representation with 4 division operations:

Base 11	Decimal	Genuine Crazy Sequential Representation
9150	12155	$A9/8/(7/(6+5)/(432+1))$

Decimal representation:

$$119/8/(7/(6+5)/(519+1)) = \frac{\frac{119}{8}}{7} = \frac{\frac{119}{8}}{7} = \frac{11}{520} = 12155$$

Notes

Authors consider crazy sequential representations to be proof-of-work, as identification is computationally expensive, while verification is trivial. Authors did not simplify and/or optimize the crazy sequential representations.

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