

Base-24 = 2<sup>3</sup> × 3 Decomposition of IHC GUT Quantities  
Q = 2<sup>a</sup> × 3<sup>b</sup> × r (green = exact base-24)

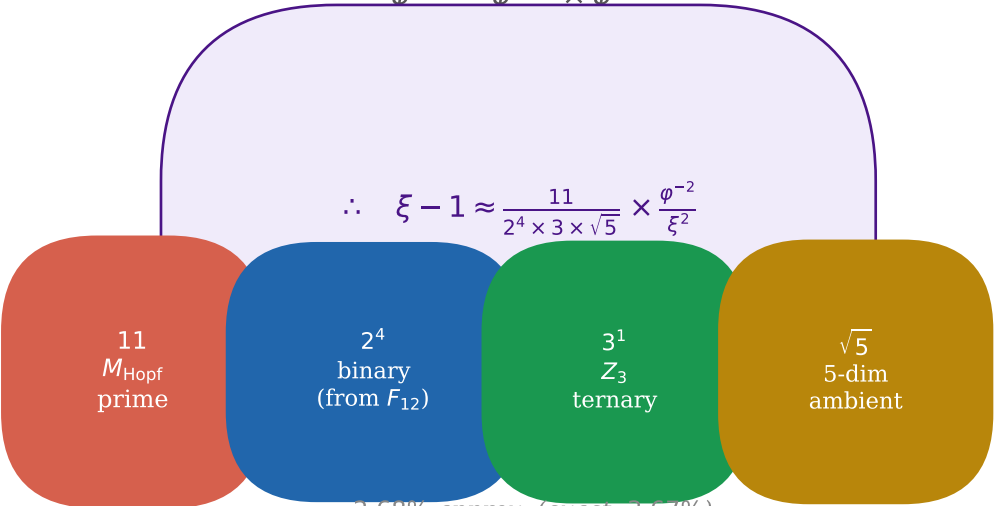
Quantity	Base-10	2 <sup>a</sup>	3 <sup>b</sup>	Residual r	Exact?
N = 33	33	2 <sup>0</sup>	3 <sup>1</sup>	11	No (11 prime)
F <sub>12</sub>	144	2 <sup>4</sup>	3 <sup>2</sup>	1	YES
M × 24	264	2 <sup>3</sup>	3 <sup>1</sup>	11	No (11 prime)
k <sub>GUT</sub>	272	2 <sup>4</sup>	3 <sup>0</sup>	17	No (17 prime)
k <sub>GUT</sub> =	8(N + 1)	2 <sup>3</sup>	3 <sup>0</sup>	×(N + 1)	Structure
k <sub>BAO</sub>	7	2 <sup>0</sup>	3 <sup>0</sup>	7	No (prime)
3 = Z <sub>3</sub>	3	2 <sup>0</sup>	3 <sup>1</sup>	1	YES
8 = 2 <sup>3</sup>	8	2 <sup>3</sup>	3 <sup>0</sup>	1	YES
24 = 3 × 8	24	2 <sup>3</sup>	3 <sup>1</sup>	1	YES
ξ − 1	0.03668	2 <sup>−4</sup>	3 <sup>−1</sup>	0.990	0.68% approx
N(ξ − 1)/11	0.11010	2 <sup>−4</sup>	3 <sup>0</sup>	1.76160	~1/(√5·φ <sup>2</sup> ·ξ <sup>2</sup> )

ξ Correction in Base-24 Arithmetic

ξ − 1 = N × φ<sup>−2k<sub>BAO</sub></sup>/ξ<sup>2</sup>

= (3 × 11) × φ<sup>−14</sup>/ξ<sup>2</sup>

φ<sup>−14</sup> = φ<sup>−12</sup> × φ<sup>−2</sup>



= 2.68% approx. (exact: 3.67%)

Error 0.68% from Fibonacci approx. φ<sup>12</sup> ≈ F<sub>12</sub>√5