On some Ramanujan equations concerning the continued fractions. Further possible mathematical connections with some parameters of Particle Physics and Cosmology VI.

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Abstract

In this research thesis, we have analyzed and deepened some equations concerning the Ramanujan continued fractions. We have described further possible mathematical connections with some parameters of Particle Physics and Cosmology.

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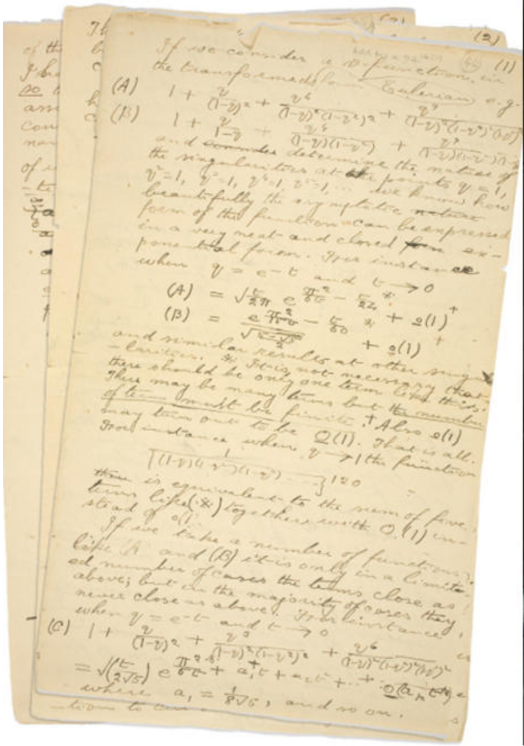


https://news.cnrs.fr/articles/ramanujan-the-man-who-knew-infinity

From:

Ramanujan's continued fractions and theta functions

https://sites.google.com/site/tpiezas2/home

for $q = e^{2\pi i\tau}$ $i\tau > 0 = 0.000933721$;

exp(2Pi) * 0.000933721 = $\exp(2\pi) \times 0.000933721$

$= 0.500000...$

q = 0.5

Order 8

$$O(q) = q^{1/2} \prod_{n=1}^{\infty} \frac{(1-q^{8n-1})(1-q^{8n-7})}{(1-q^{8n-3})(1-q^{8n-5})} = \cfrac{q^{1/2}}{1+q+\cfrac{q^2}{1+q^3+\cfrac{q^4}{1+q^5+\cfrac{q^6}{1+q^7+\ddots}}}} = \cfrac{q^{1/2}}{1+\cfrac{q+q^2}{1+\cfrac{q^4}{1+\cfrac{q^3+q^6}{1+\cfrac{q^8}{1+\ddots}}}}}$$

0.5^(1/2) * product (((1-0.5^(8n-1)))(((1-0.5^(8n-7)))/(((1-0.5^(8n-3)))(((1-0.5^(8n-5))))))), n=1 to infinity

Input interpretation:

$$\sqrt{0.5} \prod_{n=1}^{\infty} (1 - 0.5^{8n-1}) \times \frac{1 - 0.5^{8n-7}}{(1 - 0.5^{8n-3})(1 - 0.5^{8n-5})}$$

Result:

0.413266

0.413266

1/10^27((((18/10^3 + 4 * 0.5^(1/2) * product (((1-0.5^(8n-1)))(((1-0.5^(8n-7)))/(((1-0.5^(8n-3)))(((1-0.5^(8n-5))))))), n=1 to infinity))))

Input interpretation:

$$\frac{1}{10^{27}} \left(\frac{18}{10^3} + 4 \sqrt{0.5} \prod_{n=1}^{\infty} (1 - 0.5^{8n-1}) \times \frac{1 - 0.5^{8n-7}}{(1 - 0.5^{8n-3})(1 - 0.5^{8n-5})} \right)$$

Result:

1.67106×10^{-27}

$1.67106 * 10^{-27}$ result practically equal to the value of the formula:

$$m_{p'} = 2 \times \frac{\eta}{R} m_P = 1.6714213 \times 10^{-27} \text{ kg}$$

that is the holographic proton mass (N. Haramein)

64*1/((((0.5^(1/2) * product (((1-0.5^(8n-1)))(((1-0.5^(8n-7)))/(((1-0.5^(8n-3)))(((1-0.5^(8n-5))))))), n=1 to infinity))))-18+Pi-1/golden ratio

where 18 is a Lucas number

Input interpretation:

$$64\times\frac{1}{\sqrt{0.5}\,\prod_{n=1}^{\infty}\left(1-0.5^{8n-1}\right)\times\frac{1-0.5^{8n-7}}{\left(1-0.5^{8n-3}\right)\left(1-0.5^{8n-5}\right)}}-18+\pi-\frac{1}{\phi}$$

ϕ is the golden ratio

Result:

139.388

139.388 result practically equal to the rest mass of Pion meson 139.57 MeV

64*1/((((0.5^(1/2) * product (((1-0.5^(8n-1)))(((1-0.5^(8n-7)))/(((1-0.5^(8n-3)))(((1-0.5^(8n-5))))))), n=1 to infinity))))-29-Pi+golden ratio^2

where 29 is a Lucas number

Input interpretation:

$$64\times\frac{1}{\sqrt{0.5}\,\prod_{n=1}^{\infty}\left(1-0.5^{8n-1}\right)\times\frac{1-0.5^{8n-7}}{\left(1-0.5^{8n-3}\right)\left(1-0.5^{8n-5}\right)}}-29-\pi+\phi^2$$

ϕ is the golden ratio

Result:

125.34

125.34 result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

11*64*1/((((0.5^(1/2) * product (((1-0.5^(8n-1)))(((1-0.5^(8n-7)))/(((1-0.5^(8n-3)))(((1-0.5^(8n-5))))))), n=1 to infinity))))+29-Pi

where 11 is a Lucas number

Input interpretation:

$$11\times 64\times \frac{1}{\sqrt{0.5}\ \prod_{n=1}^{\infty}\left(1-0.5^{8n-1}\right)\times \frac{1-0.5^{8n-7}}{\left(1-0.5^{8n-3}\right)\left(1-0.5^{8n-5}\right)}}+29-\pi$$

Result:

1729.36

1729.36

This result is very near to the mass of candidate glueball $f_0(1710)$ meson. Furthermore, 1728 occurs in the algebraic formula for the j-invariant of an elliptic curve. As a consequence, it is sometimes called a Zagier as a pun on the Gross–Zagier theorem. The number 1728 is one less than the Hardy–Ramanujan number 1729

11*64*1/((((0.5^(1/2) * product (((1-0.5^(8n-1)))(((1-0.5^(8n-7)))/(((1-0.5^(8n-3)))(((1-0.5^(8n-5))))))), n=1 to infinity))))+76-3+2Pi

where 76 and 3 are Lucas numbers

Input interpretation:

$$11\times 64\times \frac{1}{\sqrt{0.5}\ \prod_{n=1}^{\infty}\left(1-0.5^{8n-1}\right)\times \frac{1-0.5^{8n-7}}{\left(1-0.5^{8n-3}\right)\left(1-0.5^{8n-5}\right)}}+76-3+2\pi$$

Result:

1782.79

1782.79 result in the range of the hypothetical mass of Gluino (gluino = 1785.16 GeV).

Order 16

$$H_3(q) = q^{1/2} \prod_{n=1}^{\infty} \frac{(1-q^{16n-3})(1-q^{16n-13})}{(1-q^{16n-5})(1-q^{16n-11})} = \cfrac{q^{1/2}(1-q^3)}{1-q^4+\cfrac{q^4(1-q)(1-q^7)}{(1-q^4)(1+q^8)+\cfrac{q^4(1-q^9)(1-q^{15})}{(1-q^4)(1+q^{16})+\cfrac{q^4(1-q^{17})(1-q^{23})}{(1-q^4)(1+q^{24})+\cdots}}}}$$

$$H_2(q) = q \prod_{n=1}^{\infty} \frac{(1-q^{16n-2})(1-q^{16n-14})}{(1-q^{16n-6})(1-q^{16n-10})} = \cfrac{q(1-q^2)}{1-q^4+\cfrac{q^4(1-q^2)(1-q^6)}{(1-q^4)(1-q^8)+\cfrac{q^4(1-q^{10})(1-q^{14})}{(1-q^4)(1+q^{16})+\cfrac{q^4(1-q^{18})(1-q^{22})}{(1-q^4)(1+q^{24})+\cdots}}}}$$

$$H_1(q) = q^{3/2} \prod_{n=1}^{\infty} \frac{(1-q^{16n-1})(1-q^{16n-15})}{(1-q^{16n-7})(1-q^{16n-9})} = \cfrac{q^{3/2}(1-q)}{1-q^4+\cfrac{q^4(1-q^3)(1-q^5)}{(1-q^4)(1+q^8)+\cfrac{q^4(1-q^{11})(1-q^{13})}{(1-q^4)(1+q^{16})+\cfrac{q^4(1-q^{19})(1-q^{21})}{(1-q^4)(1+q^{24})+\cdots}}}}$$

0.5^(1/2) * product (((1-0.5^(16n-3)))(((1-0.5^(16n-13)))/(((1-0.5^(16n-5)))(((1-0.5^(16n-11))))))), n=1 to infinity

Input interpretation:

$$\sqrt{0.5} \prod_{n=1}^{\infty} \left(1 - 0.5^{16n-3}\right) \times \frac{1 - 0.5^{16n-13}}{\left(1 - 0.5^{16n-5}\right)\left(1 - 0.5^{16n-11}\right)}$$

Result:

0.63891

0.63891

0.5 * product (((1-0.5^(16n-2)))(((1-0.5^(16n-14)))/(((1-0.5^(16n-6)))(((1-0.5^(16n-10))))))), n=1 to infinity

Input interpretation:

$$0.5 \prod_{n=1}^{\infty} \left(1 - 0.5^{16n-2}\right) \times \frac{1 - 0.5^{16n-14}}{\left(1 - 0.5^{16n-6}\right)\left(1 - 0.5^{16n-10}\right)}$$

Result:

0.3813

0.3813

0.5^(3/2) * product (((1-0.5^(16n-1)))(((1-0.5^(16n-15)))/(((1-0.5^(16n-7)))(((1-0.5^(16n-9))))))), n=1 to infinity

Input interpretation:

$$0.5^{3/2} \prod_{n=1}^{\infty} \left(1 - 0.5^{16n-1}\right) \times \frac{1 - 0.5^{16n-15}}{\left(1 - 0.5^{16n-7}\right)\left(1 - 0.5^{16n-9}\right)}$$

Result:

0.178511

0.178511

(0.63891+0.3813+0.178511)

Input interpretation:

0.63891 + 0.3813 + 0.178511

Result:

1.198721

1.198721

1/10^52*((((0.63891+0.3813+0.178511)-(76+18)/10^3+(7+2)/10^4)))

where 76, 18, 7 and 2 are Lucas numbers

Input interpretation:

$$\frac{1}{10^{52}} \left((0.63891 + 0.3813 + 0.178511) - \frac{76 + 18}{10^3} + \frac{7 + 2}{10^4}\right)$$

Result:

1.105621×10^{-52}

$1.105621 * 10^{-52}$ result practically equal to the value of Cosmological Constant $1.1056*10^{-52}$ m^{-2}

((1/(0.63891+0.3813+0.178511)))^1/16

Input interpretation:

$$\sqrt[16]{\frac{1}{0.63891 + 0.3813 + 0.178511}}$$

Result:

0.9887355...

0.9887355... result very near to the dilaton value **0.989117352243 = ϕ**

8 log base 0.9887355((1/(0.63891+0.3813+0.178511)))-Pi+1/golden ratio

where 8 is a Fibonacci number

Input interpretation:

$$8 \log_{0.9887355}\left(\frac{1}{0.63891 + 0.3813 + 0.178511}\right) - \pi + \frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

125.477...

125.477… result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

Alternative representation:

$$8 \log_{0.988736}\left(\frac{1}{0.63891 + 0.3813 + 0.178511}\right) - \pi + \frac{1}{\phi} = -\pi + \frac{1}{\phi} + \frac{8 \log\left(\frac{1}{1.19872}\right)}{\log(0.988736)}$$

Series representations:

$$8\log_{0.988736}\left(\frac{1}{0.63891+0.3813+0.178511}\right)-\pi+\frac{1}{\phi}=\frac{1}{\phi}-\pi-\frac{8\sum_{k=1}^{\infty}\frac{(-1)^k(-0.165778)^k}{k}}{\log(0.988736)}$$

$$8\log_{0.988736}\left(\frac{1}{0.63891+0.3813+0.178511}\right)-\pi+\frac{1}{\phi}=$$
$$\frac{1}{\phi}-\pi-706.196\log(0.834222)-8\log(0.834222)\sum_{k=0}^{\infty}(-0.0112645)^k\,G(k)$$
$$\text{for }\left(G(0)=0\text{ and }\frac{(-1)^k k}{2(1+k)(2+k)}+G(k)=\sum_{j=1}^{k}\frac{(-1)^{1+j}\,G(-j+k)}{1+j}\right)$$

8 log base 0.9887355((1/(0.63891+0.3813+0.178511)))+11+1/golden ratio

where 11 is a Lucas number

Input interpretation:

$$8\log_{0.9887355}\left(\frac{1}{0.63891+0.3813+0.178511}\right)+11+\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

139.618...

139.618... result practically equal to the rest mass of Pion meson 139.57 MeV

Alternative representation:

$$8\log_{0.988736}\left(\frac{1}{0.63891+0.3813+0.178511}\right)+11+\frac{1}{\phi}=11+\frac{1}{\phi}+\frac{8\log\left(\frac{1}{1.19872}\right)}{\log(0.988736)}$$

Series representations:

$$8 \log_{0.988736}\left(\frac{1}{0.63891 + 0.3813 + 0.178511}\right) + 11 + \frac{1}{\phi} =$$

$$11 + \frac{1}{\phi} - \frac{8 \sum_{k=1}^{\infty} \frac{(-1)^k (-0.165778)^k}{k}}{\log(0.988736)}$$

$$8 \log_{0.988736}\left(\frac{1}{0.63891 + 0.3813 + 0.178511}\right) + 11 + \frac{1}{\phi} =$$

$$11 + \frac{1}{\phi} - 706.196 \log(0.834222) - 8 \log(0.834222) \sum_{k=0}^{\infty} (-0.0112645)^k G(k)$$

$$\text{for } \left(G(0) = 0 \text{ and } \frac{(-1)^k k}{2(1+k)(2+k)} + G(k) = \sum_{j=1}^{k} \frac{(-1)^{1+j} G(-j+k)}{1+j}\right)$$

13*(((8 log base 0.9887355((1/(0.63891+0.3813+0.178511)))+1/golden ratio)))+55+golden ratio

where 13 and 55 are Lucas numbers

Input interpretation:

$$13\left(8 \log_{0.9887355}\left(\frac{1}{0.63891 + 0.3813 + 0.178511}\right) + \frac{1}{\phi}\right) + 55 + \phi$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

1728.66...

1728.66…

This result is very near to the mass of candidate glueball $f_0(1710)$ meson. Furthermore, 1728 occurs in the algebraic formula for the j-invariant of an elliptic curve. As a consequence, it is sometimes called a Zagier as a pun on the Gross–Zagier theorem. The number 1728 is one less than the Hardy–Ramanujan number 1729

Alternative representation:

$$13\left(8\log_{0.988736}\left(\frac{1}{0.63891+0.3813+0.178511}\right)+\frac{1}{\phi}\right)+55+\phi=$$
$$55+\phi+13\left(\frac{1}{\phi}+\frac{8\log\left(\frac{1}{1.19872}\right)}{\log(0.988736)}\right)$$

Series representations:

$$13\left(8\log_{0.988736}\left(\frac{1}{0.63891+0.3813+0.178511}\right)+\frac{1}{\phi}\right)+55+\phi=$$
$$55+\frac{13}{\phi}+\phi-\frac{104\sum_{k=1}^{\infty}\frac{(-1)^k(-0.165778)^k}{k}}{\log(0.988736)}$$

$$13\left(8\log_{0.988736}\left(\frac{1}{0.63891+0.3813+0.178511}\right)+\frac{1}{\phi}\right)+55+\phi=$$
$$55+\frac{13}{\phi}+\phi-9180.54\log(0.834222)-104\log(0.834222)\sum_{k=0}^{\infty}(-0.0112645)^k\,G(k)$$
$$\text{for}\left(G(0)=0\text{ and }G(k)=\frac{(-1)^{1+k}\,k}{2\,(1+k)\,(2+k)}+\sum_{j=1}^{k}\frac{(-1)^{1+j}\,G(-j+k)}{1+j}\right)$$

13*(((8 log base 0.9887355((1/(0.63891+0.3813+0.178511)))+1/golden ratio)))+89+21+golden ratio

where 89 and 21 are Fibonacci numbers

Input interpretation:

$$13\left(8\log_{0.9887355}\left(\frac{1}{0.63891+0.3813+0.178511}\right)+\frac{1}{\phi}\right)+89+21+\phi$$

$\log_b(x)$ is the base− b logarithm

ϕ is the golden ratio

Result:

1783.66...

1783.66… result in the range of the hypothetical mass of Gluino (gluino = 1785.16 GeV).

Alternative representation:

$$13\left(8\log_{0.988736}\left(\frac{1}{0.63891+0.3813+0.178511}\right)+\frac{1}{\phi}\right)+89+21+\phi = 110+\phi+13\left(\frac{1}{\phi}+\frac{8\log\left(\frac{1}{1.19872}\right)}{\log(0.988736)}\right)$$

Series representations:

$$13\left(8\log_{0.988736}\left(\frac{1}{0.63891+0.3813+0.178511}\right)+\frac{1}{\phi}\right)+89+21+\phi = 110+\frac{13}{\phi}+\phi-\frac{104\sum_{k=1}^{\infty}\frac{(-1)^k(-0.165778)^k}{k}}{\log(0.988736)}$$

$$13\left(8\log_{0.988736}\left(\frac{1}{0.63891+0.3813+0.178511}\right)+\frac{1}{\phi}\right)+89+21+\phi = 110+\frac{13}{\phi}+\phi-9180.54\log(0.834222)-104\log(0.834222)\sum_{k=0}^{\infty}(-0.0112645)^k G(k)$$

$$\text{for }\left(G(0)=0\text{ and }G(k)=\frac{(-1)^{1+k}k}{2(1+k)(2+k)}+\sum_{j=1}^{k}\frac{(-1)^{1+j}G(-j+k)}{1+j}\right)$$

Order 24

$$U_5(q) = q^{1/2}\prod_{n=1}^{\infty}\frac{(1-q^{24n-5})(1-q^{24n-19})}{(1-q^{24n-7})(1-q^{24n-17})} = \cfrac{q^{1/2}(1-q^5)}{1-q^6+\cfrac{q^6(1-q)(1-q^{11})}{(1-q^6)(1+q^{12})+\cfrac{q^6(1-q^{13})(1-q^{23})}{(1-q^6)(1+q^{24})+\cfrac{q^6(1-q^{25})(1-q^{35})}{(1-q^6)(1-q^{36})+\cdots}}}}$$

$$U_3(q) = q^{3/2}\prod_{n=1}^{\infty}\frac{(1-q^{24n-3})(1-q^{24n-21})}{(1-q^{24n-9})(1-q^{24n-15})} = \cfrac{q^{3/2}(1-q^3)}{1-q^6+\cfrac{q^6(1-q^3)(1-q^9)}{(1-q^6)(1+q^{12})+\cfrac{q^6(1-q^{15})(1-q^{21})}{(1-q^6)(1+q^{24})+\cfrac{q^6(1-q^{27})(1-q^{33})}{(1-q^6)(1-q^{36})+\cdots}}}}$$

$$U_1(q) = q^{5/2}\prod_{n=1}^{\infty}\frac{(1-q^{24n-1})(1-q^{24n-23})}{(1-q^{24n-11})(1-q^{24n-13})} = \cfrac{q^{5/2}(1-q)}{1-q^6+\cfrac{q^6(1-q^5)(1-q^7)}{(1-q^6)(1+q^{12})+\cfrac{q^6(1-q^{17})(1-q^{19})}{(1-q^6)(1+q^{24})+\cfrac{q^6(1-q^{29})(1-q^{31})}{(1-q^6)(1+q^{36})+\cdots}}}}$$

0.5^(1/2) * product (((1-0.5^(24n-5)))(((1-0.5^(24n-19)))/(((1-0.5^(24n-7)))(((1-0.5^(24n-17))))))), n=1 to infinity

Input interpretation:

$$\sqrt{0.5}\prod_{n=1}^{\infty}(1-0.5^{24n-5})\times\frac{1-0.5^{24n-19}}{(1-0.5^{24n-7})(1-0.5^{24n-17})}$$

Result:

0.690407

0.690407

0.5^(3/2) * product (((1-0.5^(24n-3)))(((1-0.5^(24n-21)))/(((1-0.5^(24n-9)))(((1-0.5^(24n-15))))))), n=1 to infinity

Input interpretation:

$$0.5^{3/2}\prod_{n=1}^{\infty}(1-0.5^{24n-3})\times\frac{1-0.5^{24n-21}}{(1-0.5^{24n-9})(1-0.5^{24n-15})}$$

Result:

0.309974

0.309974

0.5^(5/2) * product (((1-0.5^(24n-1)))(((1-0.5^(24n-23)))/(((1-0.5^(24n-11)))(((1-0.5^(24n-13))))))), n=1 to infinity

Input interpretation:

$$0.5^{5/2} \prod_{n=1}^{\infty} (1 - 0.5^{24n-1}) \times \frac{1 - 0.5^{24n-23}}{(1 - 0.5^{24n-11})(1 - 0.5^{24n-13})}$$

Result:

0.0884423

0.0884423

(0.690407+0.309974+0.0884423)

Input interpretation:

0.690407 + 0.309974 + 0.0884423

Result:

1.0888233

1.0888233

((1/(0.690407+0.309974+0.0884423)))^1/8

Input interpretation:

$$\sqrt[8]{\frac{1}{0.690407 + 0.309974 + 0.0884423}}$$

Result:

0.9894192...

0.9894192... result practically equal to the dilaton value $\mathbf{0.989117352243} = \boldsymbol{\phi}$

16*log base 0.9894192((1/(0.690407+0.309974+0.0884423)))-Pi+1/golden ratio

Input interpretation:

$$16 \log_{0.9894192}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)-\pi+\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

125.477...

125.477... result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

Alternative representation:

$$16 \log_{0.989419}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)-\pi+\frac{1}{\phi}=-\pi+\frac{1}{\phi}+\frac{16 \log\left(\frac{1}{1.08882}\right)}{\log(0.989419)}$$

Series representations:

$$16 \log_{0.989419}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)-\pi+\frac{1}{\phi}=\frac{1}{\phi}-\pi-\frac{16 \sum_{k=1}^{\infty} \frac{(-1)^k (-0.0815773)^k}{k}}{\log(0.989419)}$$

$$16 \log_{0.989419}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)-\pi+\frac{1}{\phi}=\frac{1}{\phi}-\pi-1504.17 \log(0.918423)-16 \log(0.918423) \sum_{k=0}^{\infty} (-0.0105808)^k G(k)$$

$$\text{for } \left(G(0)=0 \text{ and } G(k)=\frac{(-1)^{1+k} k}{2(1+k)(2+k)}+\sum_{j=1}^{k} \frac{(-1)^{1+j} G(-j+k)}{1+j}\right)$$

16*log base 0.9894192((1/(0.690407+0.309974+0.0884423)))+11+1/golden ratio

where 11 is a Lucas number

Input interpretation:

$$16 \log_{0.9894192}\left(\frac{1}{0.690407 + 0.309974 + 0.0884423}\right) + 11 + \frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

139.618...

139.618… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternative representation:

$$16 \log_{0.989419}\left(\frac{1}{0.690407 + 0.309974 + 0.0884423}\right) + 11 + \frac{1}{\phi} = 11 + \frac{1}{\phi} + \frac{16 \log\left(\frac{1}{1.08882}\right)}{\log(0.989419)}$$

Series representations:

$$16 \log_{0.989419}\left(\frac{1}{0.690407 + 0.309974 + 0.0884423}\right) + 11 + \frac{1}{\phi} = 11 + \frac{1}{\phi} - \frac{16 \sum_{k=1}^{\infty} \frac{(-1)^k (-0.0815773)^k}{k}}{\log(0.989419)}$$

$$16 \log_{0.989419}\left(\frac{1}{0.690407 + 0.309974 + 0.0884423}\right) + 11 + \frac{1}{\phi} = 11 + \frac{1}{\phi} - 1504.17 \log(0.918423) - 16 \log(0.918423) \sum_{k=0}^{\infty} (-0.0105808)^k G(k)$$

$$\text{for } \left(G(0) = 0 \text{ and } G(k) = \frac{(-1)^{1+k} k}{2(1+k)(2+k)} + \sum_{j=1}^{k} \frac{(-1)^{1+j} G(-j+k)}{1+j}\right)$$

13 (((16*log base 0.9894192((1/(0.690407+0.309974+0.0884423))))))+55+8+golden ratio

Where 13, 55 and 8 are Fibonacci numbers

Input interpretation:

$$13\left(16\log_{0.9894192}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)\right)+55+8+\phi$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

1728.62...

1728.62…

This result is very near to the mass of candidate glueball $f_0(1710)$ meson. Furthermore, 1728 occurs in the algebraic formula for the j-invariant of an elliptic curve. As a consequence, it is sometimes called a Zagier as a pun on the Gross–Zagier theorem. The number 1728 is one less than the Hardy–Ramanujan number 1729

Alternative representation:

$$13\times 16\log_{0.989419}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)+55+8+\phi = 63+\phi+\frac{208\log\left(\frac{1}{1.08882}\right)}{\log(0.989419)}$$

Series representations:

$$13\times 16\log_{0.989419}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)+55+8+\phi = 63+\phi-\frac{208\sum_{k=1}^{\infty}\frac{(-1)^k(-0.0815773)^k}{k}}{\log(0.989419)}$$

$$13 \times 16 \log_{0.989419}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)+55+8+\phi =$$
$$63+\phi-19554.2\log(0.918423)-208\log(0.918423)\sum_{k=0}^{\infty}(-0.0105808)^k G(k)$$
$$\text{for}\left(G(0)=0 \text{ and } G(k)=\frac{(-1)^{1+k}k}{2(1+k)(2+k)}+\sum_{j=1}^{k}\frac{(-1)^{1+j}G(-j+k)}{1+j}\right)$$

13 (((16*log base 0.9894192((1/(0.690407+0.309974+0.0884423))))))+89+21+8+golden ratio

where 89 and 21 are Fibonacci numbers

Input interpretation:

$$13\left(16\log_{0.9894192}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)\right)+89+21+8+\phi$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

1783.62...

1783.62… result in the range of the hypothetical mass of Gluino (gluino = 1785.16 GeV).

Alternative representation:

$$13 \times 16 \log_{0.989419}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)+89+21+8+\phi =$$
$$118+\phi+\frac{208\log\left(\frac{1}{1.08882}\right)}{\log(0.989419)}$$

Series representations:

$$13 \times 16 \log_{0.989419}\left(\frac{1}{0.690407+0.309974+0.0884423}\right)+89+21+8+\phi =$$
$$118+\phi-\frac{208\sum_{k=1}^{\infty}\frac{(-1)^k(-0.0815773)^k}{k}}{\log(0.989419)}$$

$$13 \times 16 \log_{0.989419}\left(\frac{1}{0.690407 + 0.309974 + 0.0884423}\right) + 89 + 21 + 8 + \phi =$$

$$118 + \phi - 19554.2 \log(0.918423) - 208 \log(0.918423) \sum_{k=0}^{\infty} (-0.0105808)^k \, G(k)$$

$$\text{for } \left(G(0) = 0 \text{ and } G(k) = \frac{(-1)^{1+k} \, k}{2\,(1+k)\,(2+k)} + \sum_{j=1}^{k} \frac{(-1)^{1+j} \, G(-j+k)}{1+j}\right)$$

For this last expression, $U_1(q)$, we calculate also $q = e^{2\pi} = 535.49165$, for $n = 2$ and obtain:

535.49165^(5/2) * (((1-535.49165^(24*2-1)))(((1-535.49165^(24*2-23)))/(((1-535.49165^(24*2-11)))(((1-535.49165^(24*2-13)))))))

Input interpretation:

$$535.49165^{5/2}\left((1 - 535.49165^{24\times 2-1}) \times \frac{1 - 535.49165^{24\times 2-23}}{(1 - 535.49165^{24\times 2-11})(1 - 535.49165^{24\times 2-13})}\right)$$

Result:

$6.63562... \times 10^6$

$6.63562...*10^6$

ln((((535.49165^(5/2) * (((1-535.49165^(24*2-1)))(((1-535.49165^(24*2-23)))/(((1-535.49165^(24*2-11)))(((1-535.49165^(24*2-13))))))))))

Input interpretation:

$$\log\left(535.49165^{5/2}\left((1 - 535.49165^{24\times 2-1}) \times \frac{1 - 535.49165^{24\times 2-23}}{(1 - 535.49165^{24\times 2-11})(1 - 535.49165^{24\times 2-13})}\right)\right)$$

$\log(x)$ is the natural logarithm

Result:

15.70796...

15.70796… result very near to the black hole entropy 15.6730

Alternative representations:

$$\log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = \log_e\left(\frac{535.492^{5/2}\left(1-535.492^{25}\right)\left(1-535.492^{47}\right)}{\left(1-535.492^{35}\right)\left(1-535.492^{37}\right)}\right)$$

$$\log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = \log(a)\log_a\left(\frac{535.492^{5/2}\left(1-535.492^{25}\right)\left(1-535.492^{47}\right)}{\left(1-535.492^{35}\right)\left(1-535.492^{37}\right)}\right)$$

$$\log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = -\text{Li}_1\left(1-\frac{535.492^{5/2}\left(1-535.492^{25}\right)\left(1-535.492^{47}\right)}{\left(1-535.492^{35}\right)\left(1-535.492^{37}\right)}\right)$$

Series representations:

$$\log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = \log\left(6.63562\times 10^6\right)-\sum_{k=1}^{\infty}\frac{(-1)^k e^{-15.708 k}}{k}$$

$$\log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = 2 i \pi \left\lfloor\frac{\arg\left(6.63562\times 10^6-x\right)}{2\pi}\right\rfloor+\log(x)-\sum_{k=1}^{\infty}\frac{(-1)^k \left(6.63562\times 10^6-x\right)^k x^{-k}}{k} \quad \text{for } x<0$$

$$\log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = \left\lfloor\frac{\arg\left(6.63562\times 10^6-z_0\right)}{2\pi}\right\rfloor\log\left(\frac{1}{z_0}\right)+\log(z_0)+\left\lfloor\frac{\arg\left(6.63562\times 10^6-z_0\right)}{2\pi}\right\rfloor\log(z_0)-\sum_{k=1}^{\infty}\frac{(-1)^k \left(6.63562\times 10^6-z_0\right)^k z_0^{-k}}{k}$$

Integral representations:

$$\log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right)=\int_1^{6.63562\times 10^6}\frac{1}{t}\,dt$$

$$\log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right)=$$
$$\frac{1}{2 i \pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{-15.708 s}\,\Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}\,ds \quad \text{for } -1<\gamma<0$$

8ln((((535.49165^(5/2) * (((1-535.49165^(24*2-1)))(((1-535.49165^(24*2-23)))/(((1-535.49165^(24*2-11)))(((1-535.49165^(24*2-13))))))))))

Input interpretation:

$$8\log\left(535.49165^{5/2}\left(\left(1-535.49165^{24\times 2-1}\right)\times\frac{1-535.49165^{24\times 2-23}}{\left(1-535.49165^{24\times 2-11}\right)\left(1-535.49165^{24\times 2-13}\right)}\right)\right)$$

log(x) is the natural logarithm

Result:

125.6637...

125.6637... result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

Alternative representations:

$$8\log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right)=$$
$$8\log_e\left(\frac{535.492^{5/2}\left(1-535.492^{25}\right)\left(1-535.492^{47}\right)}{\left(1-535.492^{35}\right)\left(1-535.492^{37}\right)}\right)$$

$$8 \log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = 8 \log(a) \log_a\left(\frac{535.492^{5/2}\left(1-535.492^{25}\right)\left(1-535.492^{47}\right)}{\left(1-535.492^{35}\right)\left(1-535.492^{37}\right)}\right)$$

$$8 \log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = -8 \operatorname{Li}_1\left(1-\frac{535.492^{5/2}\left(1-535.492^{25}\right)\left(1-535.492^{47}\right)}{\left(1-535.492^{35}\right)\left(1-535.492^{37}\right)}\right)$$

Series representations:

$$8 \log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = 8 \log\left(6.63562\times 10^6\right) - 8 \sum_{k=1}^{\infty} \frac{(-1)^k e^{-15.708 k}}{k}$$

$$8 \log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = 16 i \pi \left\lfloor \frac{\arg\left(6.63562\times 10^6 - x\right)}{2\pi} \right\rfloor + 8 \log(x) - 8 \sum_{k=1}^{\infty} \frac{(-1)^k \left(6.63562\times 10^6 - x\right)^k x^{-k}}{k} \quad \text{for } x < 0$$

$$8 \log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = 8 \left\lfloor \frac{\arg\left(6.63562\times 10^6 - z_0\right)}{2\pi} \right\rfloor \log\left(\frac{1}{z_0}\right) + 8 \log(z_0) + 8 \left\lfloor \frac{\arg\left(6.63562\times 10^6 - z_0\right)}{2\pi} \right\rfloor \log(z_0) - 8 \sum_{k=1}^{\infty} \frac{(-1)^k \left(6.63562\times 10^6 - z_0\right)^k z_0^{-k}}{k}$$

Integral representations:

$$8 \log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right) = 8 \int_1^{6.63562\times 10^6} \frac{1}{t}\, dt$$

$$8\log\left(\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}\right)=$$
$$\frac{4}{i\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{-15.708\,s}\,\Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}\,ds \quad \text{for } -1<\gamma<0$$

(((1/((((535.49165^(5/2) *(((1-535.49165^(24*2-1)))(((1-535.49165^(24*2-23)))/(((1-535.49165^(24*2-11)))(((1-535.49165^(24*2-13)))))))))))))^1/4096

Input interpretation:

$$\sqrt[4096]{\frac{1}{535.49165^{5/2}\left(\left(1-535.49165^{24\times 2-1}\right)\times\frac{1-535.49165^{24\times 2-23}}{\left(1-535.49165^{24\times 2-11}\right)\left(1-535.49165^{24\times 2-13}\right)}\right)}}$$

Result:

0.996172392...

0.996172392... result very near to the value of the following Rogers-Ramanujan continued fraction:

$$\frac{e^{-\frac{\pi}{\sqrt{5}}}}{\frac{\sqrt{5}}{1+\sqrt[5]{\sqrt{\varphi^5\sqrt[4]{5^3}}-1}}-\varphi+1}=1-\frac{e^{-\pi\sqrt{5}}}{1+\frac{e^{-2\pi\sqrt{5}}}{1+\frac{e^{-3\pi\sqrt{5}}}{1+\frac{e^{-4\pi\sqrt{5}}}{1+\dots}}}}\approx 0.9991104684$$

and to the dilaton value $\mathbf{0.989117352243} = \boldsymbol{\phi}$

2 sqrt(((log base 0.996172392 (((1/((((535.49165^(5/2) *(((1-535.49165^(24*2-1)))(((1-535.49165^(24*2-23)))/(((1-535.49165^(24*2-11)))(((1-535.49165^(24*2-13))))))))))))))))-Pi+1/golden ratio

Input interpretation:

$$2\sqrt{\log_{0.996172392}\left(\frac{1}{535.49165^{5/2}\left(\left(1-535.49165^{24\times 2-1}\right)\times\frac{1-535.49165^{24\times 2-23}}{\left(1-535.49165^{24\times 2-11}\right)\left(1-535.49165^{24\times 2-13}\right)}\right)}\right)}-\pi+\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

125.4764...

125.4764... result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

Alternative representation:

$$2\sqrt{\log_{0.996172}\left(\frac{1}{\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}}\right)}-\pi+\frac{1}{\phi}=$$

$$-\pi+\frac{1}{\phi}+2\sqrt{\frac{\log\left(\frac{1}{\frac{535.492^{5/2}\left(1-535.492^{25}\right)\left(1-535.492^{47}\right)}{\left(1-535.492^{35}\right)\left(1-535.492^{37}\right)}}\right)}{\log(0.996172)}}$$

Series representations:

$$2\sqrt{\log_{0.996172}\left(\frac{1}{\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}}\right)}-\pi+\frac{1}{\phi}=$$

$$\frac{1}{\phi}-\pi+2\sqrt{-\frac{\sum_{k=1}^{\infty}\frac{(-1)^k(-1.)^k}{k}}{\log(0.996172)}}$$

$$2\sqrt{\log_{0.996172}\left(\frac{1}{\frac{535.492^{5/2}(1-535.492^{24\times 2-1})(1-535.492^{24\times 2-23})}{(1-535.492^{24\times 2-11})(1-535.492^{24\times 2-13})}}\right)-\pi+\frac{1}{\phi}} = \frac{1}{\phi}-\pi+$$

$$2\sqrt{-1+\log_{0.996172}(1.50702\times 10^{-7})}\sum_{k=0}^{\infty}\binom{\frac{1}{2}}{k}\left(-1+\log_{0.996172}(1.50702\times 10^{-7})\right)^{-k}$$

$$2\sqrt{\log_{0.996172}\left(\frac{1}{\frac{535.492^{5/2}(1-535.492^{24\times 2-1})(1-535.492^{24\times 2-23})}{(1-535.492^{24\times 2-11})(1-535.492^{24\times 2-13})}}\right)-\pi+\frac{1}{\phi}} =$$

$$\frac{1}{\phi}-\pi+2\sqrt{-1+\log_{0.996172}(1.50702\times 10^{-7})}$$

$$\sum_{k=0}^{\infty}\frac{(-1)^k\left(-1+\log_{0.996172}(1.50702\times 10^{-7})\right)^{-k}\left(-\frac{1}{2}\right)_k}{k!}$$

2 sqrt(((log base 0.996172392 (((1/((((535.49165^(5/2) *(((1-535.49165^(24*2-1)))(((1-535.49165^(24*2-23)))/(((1-535.49165^(24*2-11)))(((1-535.49165^(24*2-13))))))))))))))))+11+1/golden ratio

where 11 is a Lucas number

Input interpretation:

$$2\sqrt{\log_{0.996172392}\left(\frac{1}{535.49165^{5/2}\left((1-535.49165^{24\times 2-1})\times\frac{1-535.49165^{24\times 2-23}}{(1-535.49165^{24\times 2-11})(1-535.49165^{24\times 2-13})}\right)}\right)}+11+\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

139.6180...

139.6180… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternative representation:

$$2\sqrt{\log_{0.996172}\left(\frac{1}{\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}}\right)}+11+\frac{1}{\phi}=$$

$$11+\frac{1}{\phi}+2\sqrt{\frac{\log\left(\frac{1}{\frac{535.492^{5/2}\left(1-535.492^{25}\right)\left(1-535.492^{47}\right)}{\left(1-535.492^{35}\right)\left(1-535.492^{37}\right)}}\right)}{\log(0.996172)}}$$

Series representations:

$$2\sqrt{\log_{0.996172}\left(\frac{1}{\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}}\right)}+11+\frac{1}{\phi}=$$

$$11+\frac{1}{\phi}+2\sqrt{-\frac{\sum_{k=1}^{\infty}\frac{(-1)^k(-1.)^k}{k}}{\log(0.996172)}}$$

$$2\sqrt{\log_{0.996172}\left(\frac{1}{\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}}\right)}+11+\frac{1}{\phi}=11+\frac{1}{\phi}+$$

$$2\sqrt{-1+\log_{0.996172}(1.50702\times 10^{-7})}\sum_{k=0}^{\infty}\binom{\frac{1}{2}}{k}\left(-1+\log_{0.996172}(1.50702\times 10^{-7})\right)^{-k}$$

$$2\sqrt{\log_{0.996172}\left(\frac{1}{\frac{535.492^{5/2}\left(1-535.492^{24\times 2-1}\right)\left(1-535.492^{24\times 2-23}\right)}{\left(1-535.492^{24\times 2-11}\right)\left(1-535.492^{24\times 2-13}\right)}}\right)}+11+\frac{1}{\phi}=$$

$$11+\frac{1}{\phi}+2\sqrt{-1+\log_{0.996172}(1.50702\times 10^{-7})}$$
$$\sum_{k=0}^{\infty}\frac{(-1)^k\left(-1+\log_{0.996172}(1.50702\times 10^{-7})\right)^{-k}\left(-\frac{1}{2}\right)_k}{k!}$$

Now, we consider q = 8.080174e+53, that is the Monster Group order, and n = 2. We obtain:

(((((8.080174e+53)^(5/2) * (((1-(8.080174e+53)^(24*2-1)))(((1-(8.080174e+53)^(24*2-23)))/(((1-(8.080174e+53)^(24*2-11)))(((1-(8.080174e+53)^(24*2-13))))))))))

Input interpretation:

$$(8.080174\times 10^{53})^{5/2}\left((1-(8.080174\times 10^{53})^{24\times 2-1})\times \frac{1-(8.080174\times 10^{53})^{24\times 2-23}}{(1-(8.080174\times 10^{53})^{24\times 2-11})(1-(8.080174\times 10^{53})^{24\times 2-13})}\right)$$

Result:

$5.86883...\times 10^{134}$

$5.86883...*10^{134}$

8ln(((((8.080174e+53)^(5/2) * (((1-(8.080174e+53)^(24*2-1)))(((1-(8.080174e+53)^(24*2-23)))/(((1-(8.080174e+53)^(24*2-11)))(((1-(8.080174e+53)^(24*2-13)))))))))))-13-Pi+1/golden ratio

where 8 and 13 are Fibonacci numbers

Input interpretation:

$$8\log\left((8.080174\times 10^{53})^{5/2}\left((1-(8.080174\times 10^{53})^{24\times 2-1})\times \frac{1-(8.080174\times 10^{53})^{24\times 2-23}}{(1-(8.080174\times 10^{53})^{24\times 2-11})(1-(8.080174\times 10^{53})^{24\times 2-13})}\right)\right)-13-\pi+\frac{1}{\phi}$$

log(x) is the natural logarithm

ϕ is the golden ratio

Result:

2467.005...

2467.005… result practically equal to the rest mass of charmed Xi baryon 2467.8

(((((8.080174e+53)^(5/2) * (((1-(8.080174e+53)^(24*2-1)))(((1-(8.080174e+53)^(24*2-23)))/(((1-(8.080174e+53)^(24*2-11)))(((1-(8.080174e+53)^(24*2-13))))))))))^1/64-2

where 2 is a Fibonacci number

Input interpretation:

$$\left((8.080174\times 10^{53})^{5/2}\left(\left(1-(8.080174\times 10^{53})^{24\times 2-1}\right)\times \frac{1-(8.080174\times 10^{53})^{24\times 2-23}}{\left(1-(8.080174\times 10^{53})^{24\times 2-11}\right)\left(1-(8.080174\times 10^{53})^{24\times 2-13}\right)}\right)\right)\hat{}\,(1/64)-2$$

Result:

125.5730...

125.5730… result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

(((((8.080174e+53)^(5/2) * (((1-(8.080174e+53)^(24*2-1)))(((1-(8.080174e+53)^(24*2-23)))/(((1-(8.080174e+53)^(24*2-11)))(((1-(8.080174e+53)^(24*2-13))))))))))^1/64+11+1/golden ratio

where 11 is a Lucas number

Input interpretation:

$$\left((8.080174\times 10^{53})^{5/2}\left(\left(1-(8.080174\times 10^{53})^{24\times 2-1}\right)\times \frac{1-(8.080174\times 10^{53})^{24\times 2-23}}{\left(1-(8.080174\times 10^{53})^{24\times 2-11}\right)\left(1-(8.080174\times 10^{53})^{24\times 2-13}\right)}\right)\right)\hat{}\,(1/64)+11+\frac{1}{\phi}$$

ϕ is the golden ratio

Result:

139.1910...

139.1910… result practically equal to the rest mass of Pion meson 139.57 MeV

(((((8.080174e+53)^(5/2) * (((1-(8.080174e+53)^(24*2-1)))(((1-(8.080174e+53)^(24*2-23)))/(((1-(8.080174e+53)^(24*2-11)))(((1-(8.080174e+53)^(24*2-13))))))))))^1/42+55

where 55 is a Fibonacci number

Input interpretation:

$$\left((8.080174\times10^{53})^{5/2}\left((1-(8.080174\times10^{53})^{24\times2-1})\times\frac{1-(8.080174\times10^{53})^{24\times2-23}}{(1-(8.080174\times10^{53})^{24\times2-11})(1-(8.080174\times10^{53})^{24\times2-13})}\right)\right)^{\wedge}(1/42)+55$$

Result:

1672.24...

1672.24… result practically equal to the rest mass of Omega baryon 1672.45

(((((8.080174e+53)^(5/2) * (((1-(8.080174e+53)^(24*2-1)))(((1-(8.080174e+53)^(24*2-23)))/(((1-(8.080174e+53)^(24*2-11)))(((1-(8.080174e+53)^(24*2-13))))))))))^1/42+123-11

where 123 and 11 are Lucas numbers

Input interpretation:

$$\left((8.080174\times10^{53})^{5/2}\left((1-(8.080174\times10^{53})^{24\times2-1})\times\frac{1-(8.080174\times10^{53})^{24\times2-23}}{(1-(8.080174\times10^{53})^{24\times2-11})(1-(8.080174\times10^{53})^{24\times2-13})}\right)\right)^{\wedge}(1/42)+123-11$$

Result:

1729.24...

1729.24…

This result is very near to the mass of candidate glueball $f_0(1710)$ meson. Furthermore, 1728 occurs in the algebraic formula for the j-invariant of an elliptic curve. As a consequence, it is sometimes called a Zagier as a pun on the Gross–Zagier theorem. The number 1728 is one less than the Hardy–Ramanujan number 1729

(((1/(((((8.080174e+53)^(5/2) * (((1-(8.080174e+53)^(24*2-1)))(((1-(8.080174e+53)^(24*2-23)))/(((1-(8.080174e+53)^(24*2-11)))(((1-(8.080174e+53)^(24*2-13)))))))))))))^1/4096

Input interpretation:

$$\left(1\Big/\left(\left(8.080174\times10^{53}\right)^{5/2}\left(\left(1-\left(8.080174\times10^{53}\right)^{24\times2-1}\right)\times\frac{1-\left(8.080174\times10^{53}\right)^{24\times2-23}}{\left(1-\left(8.080174\times10^{53}\right)^{24\times2-11}\right)\left(1-\left(8.080174\times10^{53}\right)^{24\times2-13}\right)}\right)\right)\right)^{\wedge}(1/4096)$$

Result:

0.92703797...

0.92703797… result practically equal to the Regge slope of Kaon meson 0.927 (see below)

From:

Rotating strings confronting PDG mesons

Jacob Sonnenschein and Dorin Weissman

Traj.	N	m	α'	a
π/b	4	$m_{u/d}=90-185$	$0.808-0.863$	$(-0.23)-0.00$
ρ/a	6	$m_{u/d}=0-180$	$0.883-0.933$	$0.47-0.66$
η/h	5	$m_{u/d}=0-70$	$0.839-0.854$	$(-0.25)-(-0.21)$
ω	6	$m_{u/d}=0-60$	$0.910-0.918$	$0.45-0.50$
K^*	5	$m_{u/d}=0-240$ $m_s=0-390$	$0.848-0.927$	$0.32-0.62$
ϕ	3	$m_s=400$	1.078	0.82
D	3	$m_{u/d}=80$ $m_c=1640$	1.073	-0.07
D_s^*	3	$m_s=400$ $m_c=1580$	1.093	0.89
Ψ	3	$m_c=1500$	0.979	-0.09
Υ	3	$m_b=4730$	0.635	1.00

Table 1. The results of the meson fits in the (J, M^2) plane. For the uneven K^* fit the higher values of m_s require $m_{u/d}$ to take a correspondingly low value. $m_{u/d}+m_s$ never exceeds 480 MeV, and the highest masses quoted for the s are obtained when $m_{u/d}=0$. The ranges listed are those where χ^2 is within 10% of its optimal value. N is the number of data points in the trajectory.

(((((8.080174e+53)^(5/2) * (((1-(8.080174e+53)^(24*2-1)))(((1-(8.080174e+53)^(24*2-23)))/(((1-(8.080174e+53)^(24*2-11)))(((1-(8.080174e+53)^(24*2-13))))))))))^1/50+golden ratio

Input interpretation:

$$\left((8.080174\times 10^{53})^{5/2}\left((1-(8.080174\times 10^{53})^{24\times 2-1})\times \frac{1-(8.080174\times 10^{53})^{24\times 2-23}}{(1-(8.080174\times 10^{53})^{24\times 2-11})(1-(8.080174\times 10^{53})^{24\times 2-13})}\right)\right)\hat{}\,(1/50)+\phi$$

ϕ is the golden ratio

Result:

497.492...

497.492... result practically equal to the rest mass of Kaon meson 497.614

2*sqrt[log base 0.92703797(((1/(((((8.08e+53)^(5/2) * (((1-(8.08e+53)^(24*2-1)))(((1-(8.08e+53)^(24*2-23)))/(((1-(8.08e+53)^(24*2-11)))(((1-(8.08e+53)^(24*2-13))))))))))))))]-Pi+1/golden ratio

Input interpretation:

$$2\sqrt{\log_{0.92703797}\left(1\Big/\left((8.08\times 10^{53})^{5/2}\left((1-(8.08\times 10^{53})^{24\times 2-1})\times \frac{1-(8.08\times 10^{53})^{24\times 2-23}}{(1-(8.08\times 10^{53})^{24\times 2-11})(1-(8.08\times 10^{53})^{24\times 2-13})}\right)\right)\right)}-\pi+\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

125.4764...

125.4764... result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

2*sqrt[log base 0.92703797(((1/(((((8.08e+53)^(5/2) * (((1-(8.08e+53)^(24*2-1)))(((1-(8.08e+53)^(24*2-23)))/(((1-(8.08e+53)^(24*2-11)))(((1-(8.08e+53)^(24*2-13))))))))))))))]+11+1/golden ratio where 11 is a Lucas number

Input interpretation:

$$2\sqrt{\log_{0.92703797}\left(1\Big/\left((8.08\times10^{53})^{5/2}\left((1-(8.08\times10^{53})^{24\times2-1})\times\frac{1-(8.08\times10^{53})^{24\times2-23}}{(1-(8.08\times10^{53})^{24\times2-11})(1-(8.08\times10^{53})^{24\times2-13})}\right)\right)\right)}+11+\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

139.6180...

139.618… result practically equal to the rest mass of Pion meson 139.57 MeV

For q = 1728, we obtain:

(((((1728)^(5/2) * (((1-(1728)^(24*2-1)))(((1-(1728)^(24*2-23)))/(((1-(1728)^(24*2-11)))(((1-(1728)^(24*2-13))))))))))

Input:

$$1728^{5/2}\left((1-1728^{24\times2-1})\times\frac{1-1728^{24\times2-23}}{(1-1728^{24\times2-11})(1-1728^{24\times2-13})}\right)$$

Result:

$$\left(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,888\sqrt{3}\right)\Big/4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,093\,744\,833$$

Decimal approximation:

$1.2412502396610591591447020007828169904960028967184965 4... \times 10^8$

$1.24125023966\ldots*10^8$

ln(((((((((1728)^(5/2) * (((1-(1728)^(24*2-1)))(((1-(1728)^(24*2-23)))/(((1-(1728)^(24*2-11)))(((1-(1728)^(24*2-13))))))))))))

Input:

$$\log\left(1728^{5/2}\left(\left(1-1728^{24\times2-1}\right)\times\frac{1-1728^{24\times2-23}}{\left(1-1728^{24\times2-11}\right)\left(1-1728^{24\times2-13}\right)}\right)\right)$$

log(x) is the natural logarithm

Exact result:

$$\log\left(\left(341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888\sqrt{3}\right)/4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\right)$$

Decimal approximation:

18.636799873410002326722821098791591305988681199074449699 82...

18.63679987… result very near to the black hole entropy 18.7328

Property:

$\log\Big($
$(341536273874334994676589712651414465400063546694620325951 \cdot$
$506940211459245746044036170270451083001806074030119362 \cdot$
$492189459398220908754639387533623581443805718576571394 \cdot$
$331948482515281607815312839795587004806244104399948709 \cdot$
$888\sqrt{3})/$
$4765825295144679758785681602382643730956355128586036266 \cdot$
$318279839681258140058743847975500259713994256279237531 \cdot$
$869176207590902518625392737517461374867011929091684418 \cdot$
$069342026302712038453424422713201334889476093744833\Big)$

is a transcendental number

Alternate form:

$\frac{\log(3)}{2} + \log($
$341536273874334994676589712651414465400063546694620325951 \cdot$
$506940211459245746044036170270451083001806074030119362492 \cdot$
$189459398220908754639387533623581443805718576571394331948 \cdot$
$482515281607815312839795587004806244104399948709888/$
$4765825295144679758785681602382643730956355128586036266 \cdot$
$318279839681258140058743847975500259713994256279237531 \cdot$
$869176207590902518625392737517461374867011929091684418 \cdot$
$069342026302712038453424422713201334889476093744833)$

Alternative representations:

$$\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right) = \log_e\left(\frac{1728^{5/2}\left(1-1728^{25}\right)\left(1-1728^{47}\right)}{\left(1-1728^{35}\right)\left(1-1728^{37}\right)}\right)$$

$$\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right) = \log(a)\log_a\left(\frac{1728^{5/2}\left(1-1728^{25}\right)\left(1-1728^{47}\right)}{\left(1-1728^{35}\right)\left(1-1728^{37}\right)}\right)$$

$$\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right) = -\text{Li}_1\left(1-\frac{1728^{5/2}\left(1-1728^{25}\right)\left(1-1728^{47}\right)}{\left(1-1728^{35}\right)\left(1-1728^{37}\right)}\right)$$

Series representations:

$$\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right) = 2 i \pi \left\lfloor \frac{\pi-\arg\left(\frac{1}{z_0}\right)-\arg(z_0)}{2 \pi} \right\rfloor + \log(z_0) - \sum_{k=1}^{\infty} \frac{1}{k} (-1)^k \left(\left(341536273874334994676589712651414465400063546694620325\ldots951506940211459245746044036170270451083001\ldots806074030119362492189459398220908754639387\ldots533623581443805718576571394331948482515281\ldots607815312839795587004806244104399948709888 \sqrt{3}\right) / 4765825295144679758785681602382643730956355128\ldots586036266318279839681258140058743847975500259\ldots713994256279237531869176207590902518625392737\ldots517461374867011929091684418069342026302712038\ldots453424422713201334889476093744833 - z_0\right)^k z_0^{-k}$$

$$\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)=\log\Big(-1+$$

$$\big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,325\,\backslash$$
$$951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,806\,074\,\backslash$$
$$030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\,443\,\backslash$$
$$805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\,587\,\backslash$$
$$004\,806\,244\,104\,399\,948\,709\,888\sqrt{3}\big)\Big/$$

$$4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,036\,\backslash$$
$$266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,994\,256\,279\,\backslash$$
$$237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,\backslash$$
$$091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,\backslash$$
$$093\,744\,833\Big)-\sum_{k=1}^{\infty}\frac{1}{k}\Big(-\Big(1\Big/\Big(-1+$$

$$\big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,\backslash$$
$$546\,694\,620\,325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,\backslash$$
$$170\,270\,451\,083\,001\,806\,074\,030\,119\,362\,492\,189\,459\,\backslash$$
$$398\,220\,908\,754\,639\,387\,533\,623\,581\,443\,805\,718\,576\,\backslash$$
$$571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\,587\,\backslash$$
$$004\,806\,244\,104\,399\,948\,709\,888$$
$$\sqrt{3}\big)\Big/$$

$$4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,\backslash$$
$$128\,586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,\backslash$$
$$975\,500\,259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,\backslash$$
$$902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,\backslash$$
$$418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\,334\,\backslash$$
$$889\,476\,093\,744\,833\Big)\Big)\Big)^{k}$$

$$
\begin{aligned}
&\log\left(\frac{1728^{5/2}\,(1-1728^{24\times 2-1})(1-1728^{24\times 2-23})}{(1-1728^{24\times 2-11})(1-1728^{24\times 2-13})}\right) = 2\,i\,\pi\left\lfloor\frac{1}{2\,\pi}\arg\Big(\right.\\
&\quad\big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,\ddots\\
&\qquad 325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,\ddots\\
&\qquad 806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,\ddots\\
&\qquad 623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,\ddots\\
&\qquad 312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,888\\
&\qquad \sqrt{3}\big)\Big/\\
&\quad 4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,\ddots\\
&\qquad 036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,\ddots\\
&\qquad 994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,\ddots\\
&\qquad 461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,\ddots\\
&\qquad \left.424\,422\,713\,201\,334\,889\,476\,093\,744\,833 - x\Big)\right\rfloor +\\
&\log(x) - \sum_{k=1}^{\infty}\frac{1}{k}(-1)^k\\
&\quad\Big(\big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,\ddots\\
&\qquad 325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,\ddots\\
&\qquad 001\,806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,\ddots\\
&\qquad 387\,533\,623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,\ddots\\
&\qquad 281\,607\,815\,312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,\ddots\\
&\qquad 888\,\sqrt{3}\big)\Big/\\
&\quad 4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,\ddots\\
&\qquad 586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,\ddots\\
&\qquad 259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,\ddots\\
&\qquad 392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,\ddots\\
&\qquad 302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,093\,744\,833 -\\
&\quad x\Big)^k\,x^{-k}\quad \text{for } x<0
\end{aligned}
$$

Integral representations:

$$\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right) = -\frac{i}{2\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{1}{\Gamma(1-s)}\left(-1+\left(341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888\sqrt{3}\right)/4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\right)^{-s}\Gamma(-s)^2\,\Gamma(1+s)\,ds \quad \text{for } -1<\gamma<0$$

7ln((((((((1728)^(5/2) * (((1-(1728)^(24*2-1)))(((1-(1728)^(24*2-23)))/(((1-(1728)^(24*2-11)))(((1-(1728)^(24*2-13)))))))))))))-Pi-golden ratio

where 7 is a Lucas number

Input:

$$7\log\left(1728^{5/2}\left(\left(1-1728^{24\times 2-1}\right)\times\frac{1-1728^{24\times 2-23}}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)\right)-\pi-\phi$$

log(x) is the natural logarithm

ϕ is the golden ratio

Exact result:

$$-\phi-\pi+7\log\left(\left(341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888\sqrt{3}\right)/4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\right)$$

Decimal approximation:

125.69797247153032820039251747389599814000328981434027921 56...

125.697972… result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

Alternate forms:

$$-\frac{1}{2}-\frac{\sqrt{5}}{2}-\pi+7\log\left(\left(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,888\sqrt{3}\right)\Big/4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,093\,744\,833\right)$$

$$\frac{1}{2}\left(-1-\sqrt{5}-2\pi+14\log\left(\left(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,888\sqrt{3}\right)\Big/4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,093\,744\,833\right)\right)$$

$$\frac{1}{2}\left(-1-\sqrt{5}\right)-\pi+7\log\Big(\big(341536273874334994676589712651414465400063546694620325\cdots 951506940211459245746044036170270451083001806074030\cdots 119362492189459398220908754639387533623581443805718\cdots 576571394331948482515281607815312839795587004806244\cdots 104399948709888\sqrt{3}\big)\Big/ 4765825295144679758785681602382643730956355128586036266\cdots 318279839681258140058743847975500259713994256279237531\cdots 869176207590902518625392737517461374867011929091684418\cdots 069342026302712038453424422713201334889476093744833\Big)$$

Alternative representations:

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)-\pi-\phi = -\phi-\pi+7\log_e\left(\frac{1728^{5/2}\left(1-1728^{25}\right)\left(1-1728^{47}\right)}{\left(1-1728^{35}\right)\left(1-1728^{37}\right)}\right)$$

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)-\pi-\phi = -\phi-\pi+7\log(a)\log_a\left(\frac{1728^{5/2}\left(1-1728^{25}\right)\left(1-1728^{47}\right)}{\left(1-1728^{35}\right)\left(1-1728^{37}\right)}\right)$$

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)-\pi-\phi = -\phi-\pi-7\,\mathrm{Li}_1\left(1-\frac{1728^{5/2}\left(1-1728^{25}\right)\left(1-1728^{47}\right)}{\left(1-1728^{35}\right)\left(1-1728^{37}\right)}\right)$$

Series representations:

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)-\pi-\phi=$$

$$-\phi-\pi+14\,i\,\pi\left\lfloor\frac{\pi-\arg\left(\frac{1}{z_0}\right)-\arg(z_0)}{2\,\pi}\right\rfloor+7\log(z_0)-7\sum_{k=1}^{\infty}\frac{1}{k}(-1)^k$$

$$\left(\left(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,\ddots\right.\right.$$
$$325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,\ddots$$
$$001\,806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,\ddots$$
$$387\,533\,623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,\ddots$$
$$281\,607\,815\,312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,\ddots$$
$$\left.888\sqrt{3}\right)\Big/$$
$$4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,\ddots$$
$$586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,\ddots$$
$$259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,\ddots$$
$$392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,\ddots$$
$$302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,093\,744\,833-$$
$$\left.z_0\right)^k z_0^{-k}$$

$$
\begin{aligned}
&7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)-\pi-\phi=-\phi-\pi+7\log\Big(-1+ \\
&\quad\Big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\ddots \\
&\qquad 325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,806\ddots \\
&\qquad 074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\ddots \\
&\qquad 443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\ddots \\
&\qquad 587\,004\,806\,244\,104\,399\,948\,709\,888\sqrt{3}\Big)\Big/ \\
&\quad 4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,036\ddots \\
&\quad 266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,994\,256\ddots \\
&\quad 279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,461\,374\,867\ddots \\
&\quad 011\,929\,091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\ddots \\
&\quad 334\,889\,476\,093\,744\,833\Big)-7\sum_{k=1}^{\infty}\frac{1}{k}\Big(-\Big(1\Big/\Big(-1+ \\
&\qquad\Big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\ddots \\
&\qquad\quad 546\,694\,620\,325\,951\,506\,940\,211\,459\,245\,746\,044\ddots \\
&\qquad\quad 036\,170\,270\,451\,083\,001\,806\,074\,030\,119\,362\,492\ddots \\
&\qquad\quad 189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\,443\ddots \\
&\qquad\quad 805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\ddots \\
&\qquad\quad 312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,888 \\
&\qquad \sqrt{3}\Big)\Big/ \\
&\qquad 4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\ddots \\
&\qquad 355\,128\,586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\ddots \\
&\qquad 847\,975\,500\,259\,713\,994\,256\,279\,237\,531\,869\,176\,207\ddots \\
&\qquad 590\,902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,091\ddots \\
&\qquad 684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\ddots \\
&\qquad 334\,889\,476\,093\,744\,833\Big)\Big)\Big)^{k}
\end{aligned}
$$

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)-\pi-\phi=-\phi-\pi+14\,i\,\pi\left\lfloor\frac{1}{2\pi}\arg\Big(\right.$$

$$\Big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,888\,\sqrt{3}\Big)\Big/$$

$$4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,093\,744\,833-x\Big)\right\rfloor+$$

$$7\log(x)-7\sum_{k=1}^{\infty}\frac{1}{k}(-1)^k$$

$$\Big(\Big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,888\,\sqrt{3}\Big)\Big/$$

$$4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,093\,744\,833-x\Big)^k x^{-k} \quad \text{for } x<0$$

Integral representations:

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)-\pi-\phi = -\phi-\pi-\frac{7i}{2\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{1}{\Gamma(1-s)}\left(-1+\left(341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888\sqrt{3}\right)/4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\right)^{-s}\Gamma(-s)^2\,\Gamma(1+s)\,ds \quad \text{for } -1<\gamma<0$$

7ln(((((((((1728)^(5/2) * (((1-(1728)^(24*2-1)))(((1-(1728)^(24*2-23)))/(((1-(1728)^(24*2-11)))(((1-(1728)^(24*2-13))))))))))))))+11-golden ratio

where 11 is a Lucas number

Input:

$$7\log\left(1728^{5/2}\left(\left(1-1728^{24\times 2-1}\right)\times\frac{1-1728^{24\times 2-23}}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)\right)+11-\phi$$

log(x) is the natural logarithm

ϕ is the golden ratio

Exact result:

$$-\phi + 11 + 7 \log\Big((341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888 \sqrt{3}) / 4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\Big)$$

Decimal approximation:

139.83956512512012143885516085717550102420045921371538503 66...

139.839565… result practically equal to the rest mass of Pion meson 139.57 MeV

Property:

$$11 - \phi + 7 \log\Big((341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888 \sqrt{3}) / 4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\Big)$$ is a transcendental number

Alternate forms:

$$\frac{21}{2} - \frac{\sqrt{5}}{2} + 7 \log\Big((341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888 \sqrt{3}) / 4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\Big)$$

$$\frac{1}{2}\left(21-\sqrt{5}+14\log\left(\left(341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888\sqrt{3}\right)\Big/ 4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\right)\right)$$

$$\frac{1}{2}\left(21-\sqrt{5}\right)+7\log\left(\left(341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888\sqrt{3}\right)\Big/ 4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\right)$$

Alternative representations:

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)+11-\phi = 11-\phi+7\log_e\left(\frac{1728^{5/2}\left(1-1728^{25}\right)\left(1-1728^{47}\right)}{\left(1-1728^{35}\right)\left(1-1728^{37}\right)}\right)$$

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)+11-\phi = 11-\phi+7\log(a)\log_a\left(\frac{1728^{5/2}\left(1-1728^{25}\right)\left(1-1728^{47}\right)}{\left(1-1728^{35}\right)\left(1-1728^{37}\right)}\right)$$

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)+11-\phi = 11-\phi-7\,\mathrm{Li}_1\left(1-\frac{1728^{5/2}\left(1-1728^{25}\right)\left(1-1728^{47}\right)}{\left(1-1728^{35}\right)\left(1-1728^{37}\right)}\right)$$

Series representations:

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)+11-\phi=$$

$$11-\phi+14\,i\,\pi\left\lfloor\frac{\pi-\arg\left(\frac{1}{z_0}\right)-\arg(z_0)}{2\pi}\right\rfloor+7\log(z_0)-7\sum_{k=1}^{\infty}\frac{1}{k}(-1)^k$$

$$\Big(\big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,888\sqrt{3}\big)\Big/$$

$$4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,093\,744\,833-z_0\Big)^k z_0^{-k}$$

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times 2-1}\right)\left(1-1728^{24\times 2-23}\right)}{\left(1-1728^{24\times 2-11}\right)\left(1-1728^{24\times 2-13}\right)}\right)+11-\phi = 11-\phi+7\log\Big(-1+ \big(341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888\sqrt{3}\big)/ 4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\Big)-7\sum_{k=1}^{\infty}\frac{1}{k}\left(-\left(1\Big/\left(-1+\left(341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888\sqrt{3}\right)/4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\right)\right)\right)^{k}$$

$$7\log\left(\frac{1728^{5/2}\,(1-1728^{24\times 2-1})(1-1728^{24\times 2-23})}{(1-1728^{24\times 2-11})(1-1728^{24\times 2-13})}\right)+11-\phi = 11-\phi+14\,i\,\pi\left\lfloor\frac{1}{2\pi}\arg\Big(\big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,888\sqrt{3}\big)/4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,093\,744\,833-x\Big)\right\rfloor+$$

$$7\log(x)-7\sum_{k=1}^{\infty}\frac{1}{k}(-1)^k\Big(\big(341\,536\,273\,874\,334\,994\,676\,589\,712\,651\,414\,465\,400\,063\,546\,694\,620\,325\,951\,506\,940\,211\,459\,245\,746\,044\,036\,170\,270\,451\,083\,001\,806\,074\,030\,119\,362\,492\,189\,459\,398\,220\,908\,754\,639\,387\,533\,623\,581\,443\,805\,718\,576\,571\,394\,331\,948\,482\,515\,281\,607\,815\,312\,839\,795\,587\,004\,806\,244\,104\,399\,948\,709\,888\sqrt{3}\big)/4\,765\,825\,295\,144\,679\,758\,785\,681\,602\,382\,643\,730\,956\,355\,128\,586\,036\,266\,318\,279\,839\,681\,258\,140\,058\,743\,847\,975\,500\,259\,713\,994\,256\,279\,237\,531\,869\,176\,207\,590\,902\,518\,625\,392\,737\,517\,461\,374\,867\,011\,929\,091\,684\,418\,069\,342\,026\,302\,712\,038\,453\,424\,422\,713\,201\,334\,889\,476\,093\,744\,833-x\Big)^k x^{-k}\quad \text{for } x<0$$

Integral representations:

$$7\log\left(\frac{1728^{5/2}\left(1-1728^{24\times2-1}\right)\left(1-1728^{24\times2-23}\right)}{\left(1-1728^{24\times2-11}\right)\left(1-1728^{24\times2-13}\right)}\right)+11-\phi=$$

$$11-\phi-\frac{7i}{2\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{1}{\Gamma(1-s)}\left(-1+\left(341536273874334994676589712651414465400063546694620325951506940211459245746044036170270451083001806074030119362492189459398220908754639387533623581443805718576571394331948482515281607815312839795587004806244104399948709888\sqrt{3}\right)/4765825295144679758785681602382643730956355128586036266318279839681258140058743847975500259713994256279237531869176207590902518625392737517461374867011929091684418069342026302712038453424422713201334889476093744833\right)^{-s}\Gamma(-s)^2\,\Gamma(1+s)\,ds \quad \text{for } -1<\gamma<0$$

For q = 196884, we obtain:

((((((((196884)^(5/2) * (((1-(196884)^(24*2-1)))(((1-(196884)^(24*2-23)))/(((1-(196884)^(24*2-11)))(((1-(196884)^(24*2-13)))))))))))))

Input:

$$196884^{5/2}\left(\left(1-196884^{24\times2-1}\right)\times\frac{1-196884^{24\times2-23}}{\left(1-196884^{24\times2-11}\right)\left(1-196884^{24\times2-13}\right)}\right)$$

Decimal approximation:

$1.7199905482118821176482826253940784215327266575116713\ldots\times10^{13}$

$1.71999054*10^{13}$

ln((((((((196884)^(5/2) * (((1-(196884)^(24*2-1)))(((1-(196884)^(24*2-23)))/(((1-(196884)^(24*2-11)))(((1-(196884)^(24*2-13))))))))))))

Input:

$$\log\left(196\,884^{5/2}\left(\left(1-196\,884^{24\times2-1}\right)\times\frac{1-196\,884^{24\times2-23}}{\left(1-196\,884^{24\times2-11}\right)\left(1-196\,884^{24\times2-13}\right)}\right)\right)$$

log(x) is the natural logarithm

Exact result:

$$\log\Big(\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\big)/26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Big)$$

Decimal approximation:

30.47592500450720682711928143784856992384090374151471608611...

30.475925… result very near to the black hole entropy 30.4615

Property:

log(

(6 087 826 936 168 882 510 199 456 124 203 023 756 551 967 967 389 241 571 ⋱
252 188 139 793 402 423 376 370 238 387 611 001 405 480 301 665 547 774 ⋱
417 604 120 811 260 673 228 587 533 481 797 844 400 044 855 231 728 465 ⋱
704 371 900 431 092 567 922 634 776 057 351 018 167 633 773 707 827 000 ⋱
367 940 379 170 872 663 838 168 498 297 832 735 886 949 104 563 148 380 ⋱
520 195 197 434 433 563 579 575 567 538 160 020 935 474 895 870 164 480 ⋱
132 642 794 492 017 259 930 637 440 291 820 256 $\sqrt{5469}$) /
26 175 211 480 498 667 350 419 362 863 026 162 890 756 592 779 868 215 608 ⋱
789 359 005 039 689 231 156 626 755 570 498 372 419 636 804 507 674 500 ⋱
838 781 533 143 254 955 128 850 768 137 126 380 706 413 246 066 431 677 ⋱
916 847 222 468 702 512 820 367 346 359 248 227 566 862 744 448 276 466 ⋱
802 859 670 747 090 331 702 200 887 957 888 464 982 234 944 352 708 181 ⋱
347 344 495 671 709 972 843 620 847 540 313 297 714 892 943 131 338 077 ⋱
121 215 883 916 843 759 022 821) is a transcendental number

Alternate form:

$\frac{\log(5469)}{2}$ + log(
6 087 826 936 168 882 510 199 456 124 203 023 756 551 967 967 389 241 571 252 ⋱
188 139 793 402 423 376 370 238 387 611 001 405 480 301 665 547 774 417 604 ⋱
120 811 260 673 228 587 533 481 797 844 400 044 855 231 728 465 704 371 900 ⋱
431 092 567 922 634 776 057 351 018 167 633 773 707 827 000 367 940 379 170 ⋱
872 663 838 168 498 297 832 735 886 949 104 563 148 380 520 195 197 434 433 ⋱
563 579 575 567 538 160 020 935 474 895 870 164 480 132 642 794 492 017 259 ⋱
930 637 440 291 820 256 /
26 175 211 480 498 667 350 419 362 863 026 162 890 756 592 779 868 215 608 ⋱
789 359 005 039 689 231 156 626 755 570 498 372 419 636 804 507 674 500 ⋱
838 781 533 143 254 955 128 850 768 137 126 380 706 413 246 066 431 677 ⋱
916 847 222 468 702 512 820 367 346 359 248 227 566 862 744 448 276 466 ⋱
802 859 670 747 090 331 702 200 887 957 888 464 982 234 944 352 708 181 ⋱
347 344 495 671 709 972 843 620 847 540 313 297 714 892 943 131 338 077 ⋱
121 215 883 916 843 759 022 821)

Alternative representations:

$$\log\left(\frac{196\,884^{5/2}\,(1-196\,884^{24\times 2-1})(1-196\,884^{24\times 2-23})}{(1-196\,884^{24\times 2-11})(1-196\,884^{24\times 2-13})}\right) = \log_e\left(\frac{196\,884^{5/2}\,(1-196\,884^{25})(1-196\,884^{47})}{(1-196\,884^{35})(1-196\,884^{37})}\right)$$

$$\log\left(\frac{196\,884^{5/2}\,(1-196\,884^{24\times 2-1})(1-196\,884^{24\times 2-23})}{(1-196\,884^{24\times 2-11})(1-196\,884^{24\times 2-13})}\right) = \log(a)\log_a\left(\frac{196\,884^{5/2}\,(1-196\,884^{25})(1-196\,884^{47})}{(1-196\,884^{35})(1-196\,884^{37})}\right)$$

$$\log\left(\frac{196\,884^{5/2}\,(1-196\,884^{24\times 2-1})(1-196\,884^{24\times 2-23})}{(1-196\,884^{24\times 2-11})(1-196\,884^{24\times 2-13})}\right) = -\text{Li}_1\left(1-\frac{196\,884^{5/2}\,(1-196\,884^{25})(1-196\,884^{47})}{(1-196\,884^{35})(1-196\,884^{37})}\right)$$

Series representations:

$$\log\left(\frac{196\,884^{5/2}\,(1-196\,884^{24\times 2-1})(1-196\,884^{24\times 2-23})}{(1-196\,884^{24\times 2-11})(1-196\,884^{24\times 2-13})}\right) = 2\,i\,\pi\left\lfloor\frac{\pi-\arg\left(\frac{1}{z_0}\right)-\arg(z_0)}{2\,\pi}\right\rfloor + \log(z_0) - \sum_{k=1}^{\infty}\frac{1}{k}(-1)^k \Big(\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\Big)\Big/ 26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821 - z_0\Big)^k z_0^{-k}$$

$$\log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)=\log\Bigg(-1+$$

$$\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\Big)\Big/$$

$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Bigg)-$$

$$\sum_{k=1}^{\infty}\frac{1}{k}\Bigg(-\Bigg(1\Bigg/\Bigg(-1+$$

$$\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\Big)\Big/$$

$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Bigg)\Bigg)\Bigg)^{k}$$

$$\log\left(\frac{196884^{5/2}\,(1-196884^{24\times 2-1})(1-196884^{24\times 2-23})}{(1-196884^{24\times 2-11})(1-196884^{24\times 2-13})}\right) = 2\,i\,\pi\left\lfloor \frac{1}{2\pi}\arg\Big(\Big(6087826936168882510199456124203023756551967967389241571252188139793402423376370238387611001405480301665547774417604120811260673228587533481797844400044855231728465704371900431092567922634776057351018167633773707827000367940379170872663838168498297832735886949104563148380520195197434433563579575567538160020935474895870164480132642794492017259930637440291820256\sqrt{5469}\Big)\Big/ 26175211480498667350419362863026162890756592779868215608789359005039689231156626755570498372419636804507674500838781533143254955128850768137126380706413246066431677916847222468702512820367346359248227566862744448276466802859670747090331702200887957888464982234944352708181347344495671709972843620847540313297714892943131338077121215883916843759022821 - x\Big)\right\rfloor +$$

$$\log(x) - \sum_{k=1}^{\infty}\frac{1}{k}(-1)^k \Big(\Big(6087826936168882510199456124203023756551967967389241571252188139793402423376370238387611001405480301665547774417604120811260673228587533481797844400044855231728465704371900431092567922634776057351018167633773707827000367940379170872663838168498297832735886949104563148380520195197434433563579575567538160020935474895870164480132642794492017259930637440291820256\sqrt{5469}\Big)\Big/ 26175211480498667350419362863026162890756592779868215608789359005039689231156626755570498372419636804507674500838781533143254955128850768137126380706413246066431677916847222468702512820367346359248227566862744448276466802859670747090331702200887957888464982234944352708181347344495671709972843620847540313297714892943131338077121215883916843759022821 - x\Big)^k x^{-k} \quad \text{for } x < 0$$

Integral representations:

$$\log\left(\frac{196884^{5/2}\left(1-196884^{24\times 2-1}\right)\left(1-196884^{24\times 2-23}\right)}{\left(1-196884^{24\times 2-11}\right)\left(1-196884^{24\times 2-13}\right)}\right)=-\frac{i}{2\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{1}{\Gamma(1-s)}\left(-1+\left(6087826936168882510199456124203023756551967967389241571252188139793402423376370238387611001405480301665547774417604120811260673228587533481797844400044855231728465704371900431092567922634776057351018167633773707827000367940379170872663838168498297832735886949104563148380520195197434433563579575567538160020935474895870164480132642794492017259930637440291820256\sqrt{5469}\right)\Big/ 26175211480498667350419362863026162890756592779868215608789359005039689231156626755570498372419636804507674500838781533143254955128850768137126380706413246066431677916847222468702512820367346359248227566862744448276466802859670747090331702200887957888464982234944352708181347344495671709972843620847540313297714892943131338077121215883916843759022821\right)^{-s}\Gamma(-s)^2\,\Gamma(1+s)\,ds$$

for $-1<\gamma<0$

4ln(((((((((196884)^(5/2) * (((1-(196884)^(24*2-1)))(((1-(196884)^(24*2-23)))/(((1-(196884)^(24*2-11)))(((1-(196884)^(24*2-13)))))))))))))+Pi+1/golden ratio

where 4 is a Lucas number

Input:

$$4\log\left(196884^{5/2}\left(\left(1-196884^{24\times 2-1}\right)\times\frac{1-196884^{24\times 2-23}}{\left(1-196884^{24\times 2-11}\right)\left(1-196884^{24\times 2-13}\right)}\right)\right)+\pi+\frac{1}{\phi}$$

log(x) is the natural logarithm

ϕ is the golden ratio

Exact result:

$\frac{1}{\phi} + \pi + 4 \log\Big($

$\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\ddots$
252 188 139 793 402 423 376 370 238 387 611 001 405 480 301 665 547⋱
774 417 604 120 811 260 673 228 587 533 481 797 844 400 044 855 231⋱
728 465 704 371 900 431 092 567 922 634 776 057 351 018 167 633 773⋱
707 827 000 367 940 379 170 872 663 838 168 498 297 832 735 886 949⋱
104 563 148 380 520 195 197 434 433 563 579 575 567 538 160 020 935⋱
474 895 870 164 480 132 642 794 492 017 259 930 637 440 291 820 256
$\sqrt{5469}\Big)/$

26 175 211 480 498 667 350 419 362 863 026 162 890 756 592 779 868 215⋱
608 789 359 005 039 689 231 156 626 755 570 498 372 419 636 804 507 674⋱
500 838 781 533 143 254 955 128 850 768 137 126 380 706 413 246 066 431⋱
677 916 847 222 468 702 512 820 367 346 359 248 227 566 862 744 448 276⋱
466 802 859 670 747 090 331 702 200 887 957 888 464 982 234 944 352 708⋱
181 347 344 495 671 709 972 843 620 847 540 313 297 714 892 943 131 338⋱
077 121 215 883 916 843 759 022 821$\Big)$

Decimal approximation:

125.66332666036851539514435596903942069728109354523973302 75...

125.66332666… result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

Alternate forms:

$\frac{1}{\phi} + \pi + 2\,(\log(5469) + 2\log($

6 087 826 936 168 882 510 199 456 124 203 023 756 551 967 967 389 241⋱
571 252 188 139 793 402 423 376 370 238 387 611 001 405 480 301⋱
665 547 774 417 604 120 811 260 673 228 587 533 481 797 844 400⋱
044 855 231 728 465 704 371 900 431 092 567 922 634 776 057 351⋱
018 167 633 773 707 827 000 367 940 379 170 872 663 838 168 498⋱
297 832 735 886 949 104 563 148 380 520 195 197 434 433 563 579⋱
575 567 538 160 020 935 474 895 870 164 480 132 642 794 492 017⋱
259 930 637 440 291 820 256 /
26 175 211 480 498 667 350 419 362 863 026 162 890 756 592 779 868⋱
215 608 789 359 005 039 689 231 156 626 755 570 498 372 419 636⋱
804 507 674 500 838 781 533 143 254 955 128 850 768 137 126 380⋱
706 413 246 066 431 677 916 847 222 468 702 512 820 367 346 359⋱
248 227 566 862 744 448 276 466 802 859 670 747 090 331 702 200⋱
887 957 888 464 982 234 944 352 708 181 347 344 495 671 709 972⋱
843 620 847 540 313 297 714 892 943 131 338 077 121 215 883 916⋱
843 759 022 821))

$$\frac{1}{2}\left(\sqrt{5}-1\right)+\pi+4\log\Big(\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\Big)\Big/26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Big)$$

$$\frac{2}{1+\sqrt{5}}+\pi+4\left(\frac{\log(5469)}{2}+\log(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256/26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821)\right)$$

Alternative representations:

$$4\log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+\pi+\frac{1}{\phi}=$$

$$\pi+4\log_e\left(\frac{196\,884^{5/2}\left(1-196\,884^{25}\right)\left(1-196\,884^{47}\right)}{\left(1-196\,884^{35}\right)\left(1-196\,884^{37}\right)}\right)+\frac{1}{\phi}$$

$$4\log\left(\frac{196\,884^{5/2}\,(1-196\,884^{24\times 2-1})(1-196\,884^{24\times 2-23})}{(1-196\,884^{24\times 2-11})(1-196\,884^{24\times 2-13})}\right)+\pi+\frac{1}{\phi}=$$
$$\pi+4\log(a)\log_a\left(\frac{196\,884^{5/2}\,(1-196\,884^{25})(1-196\,884^{47})}{(1-196\,884^{35})(1-196\,884^{37})}\right)+\frac{1}{\phi}$$

$$4\log\left(\frac{196\,884^{5/2}\,(1-196\,884^{24\times 2-1})(1-196\,884^{24\times 2-23})}{(1-196\,884^{24\times 2-11})(1-196\,884^{24\times 2-13})}\right)+\pi+\frac{1}{\phi}=$$
$$\pi-4\,\mathrm{Li}_1\left(1-\frac{196\,884^{5/2}\,(1-196\,884^{25})(1-196\,884^{47})}{(1-196\,884^{35})(1-196\,884^{37})}\right)+\frac{1}{\phi}$$

Series representations:

$$4\log\left(\frac{196\,884^{5/2}\,(1-196\,884^{24\times 2-1})(1-196\,884^{24\times 2-23})}{(1-196\,884^{24\times 2-11})(1-196\,884^{24\times 2-13})}\right)+\pi+\frac{1}{\phi}=$$
$$\frac{1}{\phi}+\pi+8\,i\,\pi\left\lfloor\frac{\pi-\arg\left(\frac{1}{z_0}\right)-\arg(z_0)}{2\,\pi}\right\rfloor+4\log(z_0)-4\sum_{k=1}^{\infty}\frac{1}{k}(-1)^k$$
$$\Big(\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,\ddots$$
$$571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,\ddots$$
$$480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,\ddots$$
$$481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,\ddots$$
$$567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,\ddots$$
$$940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,\ddots$$
$$563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,\ddots$$
$$020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,\ddots$$
$$637\,440\,291\,820\,256\,\sqrt{5469}\Big)\Big/$$
$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,\ddots$$
$$779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,\ddots$$
$$498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,\ddots$$
$$128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,\ddots$$
$$222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,\ddots$$
$$276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,\ddots$$
$$982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,\ddots$$
$$847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,\ddots$$
$$843\,759\,022\,821-z_0\Big)^k\,z_0^{-k}$$

$$4\log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+\pi+\frac{1}{\phi}=\frac{1}{\phi}+\pi+4\log\Bigg(-1+\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\Big)\Big/26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Bigg)-4\sum_{k=1}^{\infty}\frac{1}{k}\Bigg(-\Bigg(1\Bigg/\Bigg(-1+\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\Big)\Big/26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Bigg)\Bigg)\Bigg)^{k}$$

$$4\log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+\pi+\frac{1}{\phi}=$$

$$\frac{1}{\phi}+\pi+8\,i\,\pi\left\lfloor\frac{1}{2\,\pi}\arg\left(\left(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\right)\Big/\,26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821-x\right)\right\rfloor+$$

$$4\log(x)-4\sum_{k=1}^{\infty}\frac{1}{k}(-1)^k\left(\left(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\right)\Big/\,26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821-x\right)^k x^{-k}\quad\text{for } x<0$$

Integral representations:

$$4\log\left(\frac{196884^{5/2}\left(1-196884^{24\times 2-1}\right)\left(1-196884^{24\times 2-23}\right)}{\left(1-196884^{24\times 2-11}\right)\left(1-196884^{24\times 2-13}\right)}\right)+\pi+\frac{1}{\phi}=$$

$$\frac{1}{\phi}+\pi-\frac{2i}{\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{1}{\Gamma(1-s)}\left(-1+\left(6087826936168882510199456124203023756551967\ldots967389241571252188139793402423376370238\ldots387611001405480301665547774417604120811\ldots260673228587533481797844400044855231728\ldots465704371900431092567922634776057351018\ldots167633773707827000367940379170872663838\ldots168498297832735886949104563148380520195\ldots197434433563579575567538160020935474895\ldots870164480132642794492017259930637440291\ldots820256\sqrt{5469}\right)\Big/26175211480498667350419362863026162890756592\ldots779868215608789359005039689231156626755570\ldots498372419636804507674500838781533143254955\ldots128850768137126380706413246066431677916847\ldots222468702512820367346359248227566862744448\ldots276466802859670747090331702200887957888464\ldots982234944352708181347344495671709972843620\ldots847540313297714892943131338077121215883916\ldots843759022821\right)^{-s}\Gamma(-s)^2\,\Gamma(1+s)\,ds$$

for $-1<\gamma<0$

4ln(((((((((196884)^(5/2) * (((1-(196884)^(24*2-1)))(((1-(196884)^(24*2-23)))/(((1-(196884)^(24*2-11)))(((1-(196884)^(24*2-13))))))))))))))+18-1/golden ratio

where 18 is a Lucas number

Input:

$$4\log\left(196884^{5/2}\left(\left(1-196884^{24\times 2-1}\right)\times\frac{1-196884^{24\times 2-23}}{\left(1-196884^{24\times 2-11}\right)\left(1-196884^{24\times 2-13}\right)}\right)\right)+18-\frac{1}{\phi}$$

$\log(x)$ is the natural logarithm

ϕ is the golden ratio

Exact result:

$$-\frac{1}{\phi} + 18 + 4 \log\Big(\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256 \sqrt{5469}\big) / 26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Big)$$

Decimal approximation:

139.2856660292789324602725389170286415776433057862531014823...

139.285666029… result practically equal to the rest mass of Pion meson 139.57 MeV

Property:

$$18-\frac{1}{\phi}+4\log\Big($$

(6 087 826 936 168 882 510 199 456 124 203 023 756 551 967 967 389 241 ⋱
571 252 188 139 793 402 423 376 370 238 387 611 001 405 480 301 ⋱
665 547 774 417 604 120 811 260 673 228 587 533 481 797 844 400 ⋱
044 855 231 728 465 704 371 900 431 092 567 922 634 776 057 351 ⋱
018 167 633 773 707 827 000 367 940 379 170 872 663 838 168 498 ⋱
297 832 735 886 949 104 563 148 380 520 195 197 434 433 563 579 ⋱
575 567 538 160 020 935 474 895 870 164 480 132 642 794 492 017 ⋱
259 930 637 440 291 820 256 $\sqrt{5469}$) /
26 175 211 480 498 667 350 419 362 863 026 162 890 756 592 779 868 215 ⋱
608 789 359 005 039 689 231 156 626 755 570 498 372 419 636 804 507 ⋱
674 500 838 781 533 143 254 955 128 850 768 137 126 380 706 413 246 ⋱
066 431 677 916 847 222 468 702 512 820 367 346 359 248 227 566 862 ⋱
744 448 276 466 802 859 670 747 090 331 702 200 887 957 888 464 982 ⋱
234 944 352 708 181 347 344 495 671 709 972 843 620 847 540 313 297 ⋱
714 892 943 131 338 077 121 215 883 916 843 759 022 821)

is a transcendental number

Alternate forms:

$$-\frac{1}{\phi}+18+2\left(\log(5469)+2\log(\right.$$

6 087 826 936 168 882 510 199 456 124 203 023 756 551 967 967 389 241 ⋱
571 252 188 139 793 402 423 376 370 238 387 611 001 405 480 301 ⋱
665 547 774 417 604 120 811 260 673 228 587 533 481 797 844 400 ⋱
044 855 231 728 465 704 371 900 431 092 567 922 634 776 057 351 ⋱
018 167 633 773 707 827 000 367 940 379 170 872 663 838 168 498 ⋱
297 832 735 886 949 104 563 148 380 520 195 197 434 433 563 579 ⋱
575 567 538 160 020 935 474 895 870 164 480 132 642 794 492 017 ⋱
259 930 637 440 291 820 256 /
26 175 211 480 498 667 350 419 362 863 026 162 890 756 592 779 868 ⋱
215 608 789 359 005 039 689 231 156 626 755 570 498 372 419 636 ⋱
804 507 674 500 838 781 533 143 254 955 128 850 768 137 126 380 ⋱
706 413 246 066 431 677 916 847 222 468 702 512 820 367 346 359 ⋱
248 227 566 862 744 448 276 466 802 859 670 747 090 331 702 200 ⋱
887 957 888 464 982 234 944 352 708 181 347 344 495 671 709 972 ⋱
843 620 847 540 313 297 714 892 943 131 338 077 121 215 883 916 ⋱
843 759 022 821))

$$\frac{1}{2}\left(37-\sqrt{5}\right)+4\log\left(\left(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\right)/26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\right)$$

$$18-\frac{2}{1+\sqrt{5}}+4\left(\frac{\log(5469)}{2}+\log(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256/26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821)\right)$$

Alternative representations:

$$4\log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+18-\frac{1}{\phi}=$$

$$18+4\log_e\left(\frac{196\,884^{5/2}\left(1-196\,884^{25}\right)\left(1-196\,884^{47}\right)}{\left(1-196\,884^{35}\right)\left(1-196\,884^{37}\right)}\right)-\frac{1}{\phi}$$

$$4\log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+18-\frac{1}{\phi}=$$
$$18+4\log(a)\log_a\left(\frac{196\,884^{5/2}\left(1-196\,884^{25}\right)\left(1-196\,884^{47}\right)}{\left(1-196\,884^{35}\right)\left(1-196\,884^{37}\right)}\right)-\frac{1}{\phi}$$

$$4\log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+18-\frac{1}{\phi}=$$
$$18-4\,\text{Li}_1\left(1-\frac{196\,884^{5/2}\left(1-196\,884^{25}\right)\left(1-196\,884^{47}\right)}{\left(1-196\,884^{35}\right)\left(1-196\,884^{37}\right)}\right)-\frac{1}{\phi}$$

Series representations:

$$4\log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+18-\frac{1}{\phi}=$$
$$18-\frac{1}{\phi}+8\,i\,\pi\left\lfloor\frac{\pi-\arg\left(\frac{1}{z_0}\right)-\arg(z_0)}{2\,\pi}\right\rfloor+4\log(z_0)-4\sum_{k=1}^{\infty}\frac{1}{k}(-1)^k$$
$$\Big(\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\Big)\Big/$$
$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821-z_0\Big)^k z_0^{-k}$$

$$4\log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+18-\frac{1}{\phi}=$$

$$18-\frac{1}{\phi}+4\log\Big(-1+\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\big)\Big/$$

$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Big)-4\sum_{k=1}^{\infty}\frac{1}{k}\Big(-\Big(1\Big/\Big(-1+$$

$$\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\big)\Big/$$

$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Big)\Big)\Big)^{k}$$

$$
\begin{aligned}
&4\log\left(\frac{196\,884^{5/2}\,(1-196\,884^{24\times 2-1})(1-196\,884^{24\times 2-23})}{(1-196\,884^{24\times 2-11})(1-196\,884^{24\times 2-13})}\right)+18-\frac{1}{\phi}= \\
&\quad 18-\frac{1}{\phi}+8\,i\,\pi\left\lfloor\frac{1}{2\pi}\arg\Bigg(\right. \\
&\qquad \Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\ddots \\
&\qquad\qquad 241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\ddots \\
&\qquad\qquad 480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\ddots \\
&\qquad\qquad 797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\ddots \\
&\qquad\qquad 634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\ddots \\
&\qquad\qquad 872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\ddots \\
&\qquad\qquad 195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\ddots \\
&\qquad\qquad 164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256 \\
&\qquad\quad \sqrt{5469}\Big)\Big/ \\
&\qquad 26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\ddots \\
&\qquad\quad 868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\ddots \\
&\qquad\quad 419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\ddots \\
&\qquad\quad 137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\ddots \\
&\qquad\quad 820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\ddots \\
&\qquad\quad 747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\ddots \\
&\qquad\quad 347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\ddots \\
&\qquad\quad \left.131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821-x\Bigg)\right\rfloor+ \\
&\quad 4\log(x)-4\sum_{k=1}^{\infty}\frac{1}{k}(-1)^k \\
&\qquad \Big(\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\ddots \\
&\qquad\qquad 241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\ddots \\
&\qquad\qquad 001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\ddots \\
&\qquad\qquad 228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\ddots \\
&\qquad\qquad 371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\ddots \\
&\qquad\qquad 773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\ddots \\
&\qquad\qquad 297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\ddots \\
&\qquad\qquad 433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\ddots \\
&\qquad\qquad 480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256 \\
&\qquad\quad \sqrt{5469}\Big)\Big/ \\
&\qquad 26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\ddots \\
&\qquad\quad 779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\ddots \\
&\qquad\quad 498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\ddots \\
&\qquad\quad 128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\ddots \\
&\qquad\quad 222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\ddots \\
&\qquad\quad 276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\ddots \\
&\qquad\quad 982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\ddots \\
&\qquad\quad 847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\ddots \\
&\qquad\quad 843\,759\,022\,821-x\Big)^k x^{-k}\quad \text{for } x<0
\end{aligned}
$$

Integral representations:

$$4 \log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+18-\frac{1}{\phi}=$$

$$18-\frac{1}{\phi}-\frac{2i}{\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{1}{\Gamma(1-s)}\Big(-1+$$
$$\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,\ddots$$
$$967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,\ddots$$
$$387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,\ddots$$
$$260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,\ddots$$
$$465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,\ddots$$
$$167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,\ddots$$
$$168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,\ddots$$
$$197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,\ddots$$
$$870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,\ddots$$
$$820\,256\sqrt{5469}\big)\Big/$$
$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,\ddots$$
$$779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,\ddots$$
$$498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,\ddots$$
$$128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,\ddots$$
$$222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,\ddots$$
$$276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,\ddots$$
$$982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,\ddots$$
$$847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,\ddots$$
$$843\,759\,022\,821\Big)^{-s}\,\Gamma(-s)^2\,\Gamma(1+s)\,ds$$

for $-1 < \gamma < 0$

55ln((((((((196884)^(5/2) * (((1-(196884)^(24*2-1)))(((1-(196884)^(24*2-23)))/(((1-(196884)^(24*2-11)))(((1-(196884)^(24*2-13)))))))))))))+47+4+golden ratio

where 55 is a Fibonacci number, while 47 and 4 are Lucas numbers

Input:

$$55 \log\left(196\,884^{5/2}\left(\left(1-196\,884^{24\times 2-1}\right)\times\frac{1-196\,884^{24\times 2-23}}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)\right)+$$
$$47+4+\phi$$

$\log(x)$ is the natural logarithm

ϕ is the golden ratio

Exact result:

$$\phi + 51 + 55 \log\Big(\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571 \cdots$$
$$252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547 \cdots$$
$$774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231 \cdots$$
$$728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773 \cdots$$
$$707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949 \cdots$$
$$104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935 \cdots$$
$$474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256$$
$$\sqrt{5469} \big) \Big/$$
$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215 \cdots$$
$$608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674 \cdots$$
$$500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431 \cdots$$
$$677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276 \cdots$$
$$466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708 \cdots$$
$$181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338 \cdots$$
$$077\,121\,215\,883\,916\,843\,759\,022\,821 \Big)$$

Decimal approximation:

1728.793909236646270339765065916036983928970014963115147598...

1728.79390923…

This result is very near to the mass of candidate glueball $f_0(1710)$ meson. Furthermore, 1728 occurs in the algebraic formula for the j-invariant of an elliptic curve. As a consequence, it is sometimes called a Zagier as a pun on the Gross–Zagier theorem. The number 1728 is one less than the Hardy–Ramanujan number 1729

Property:

$$
\begin{gathered}
51+\phi+55\log\Big(\\
\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\ddots \\
571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\ddots \\
665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\ddots \\
044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\ddots \\
018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\ddots \\
297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\ddots \\
575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\ddots \\
259\,930\,637\,440\,291\,820\,256\sqrt{5469}\big)\Big/ \\
26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\ddots \\
608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\ddots \\
674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\ddots \\
066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\ddots \\
744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\ddots \\
234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\ddots \\
714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Big)
\end{gathered}
$$

is a transcendental number

Alternate forms:

$$
\begin{gathered}
\frac{1}{2}\Big(103+\sqrt{5}+110\log\Big(\\
\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\ddots \\
571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\ddots \\
665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\ddots \\
044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\ddots \\
018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\ddots \\
297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\ddots \\
575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\ddots \\
259\,930\,637\,440\,291\,820\,256\sqrt{5469}\big)\Big/ \\
26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\ddots \\
215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\ddots \\
804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\ddots \\
706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\ddots \\
248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\ddots \\
887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\ddots \\
843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\ddots \\
843\,759\,022\,821\Big)\Big)
\end{gathered}
$$

$$\frac{103}{2}+\frac{\sqrt{5}}{2}+55\log\Big($$

$$\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571 \ddots$$
$$252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547 \ddots$$
$$774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231 \ddots$$
$$728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773 \ddots$$
$$707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949 \ddots$$
$$104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935 \ddots$$
$$474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256$$
$$\sqrt{5469}\Big)\Big/$$
$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215 \ddots$$
$$608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674 \ddots$$
$$500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431 \ddots$$
$$677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276 \ddots$$
$$466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708 \ddots$$
$$181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338 \ddots$$
$$077\,121\,215\,883\,916\,843\,759\,022\,821\Big)$$

$$\frac{1}{2}\left(103+\sqrt{5}\right)+55\log\Big($$

$$\Big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571 \ddots$$
$$252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547 \ddots$$
$$774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231 \ddots$$
$$728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773 \ddots$$
$$707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949 \ddots$$
$$104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935 \ddots$$
$$474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256$$
$$\sqrt{5469}\Big)\Big/$$
$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215 \ddots$$
$$608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674 \ddots$$
$$500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431 \ddots$$
$$677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276 \ddots$$
$$466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708 \ddots$$
$$181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338 \ddots$$
$$077\,121\,215\,883\,916\,843\,759\,022\,821\Big)$$

Alternative representations:

$$55\log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+47+4+\phi=$$
$$51+\phi+55\log_e\left(\frac{196\,884^{5/2}\left(1-196\,884^{25}\right)\left(1-196\,884^{47}\right)}{\left(1-196\,884^{35}\right)\left(1-196\,884^{37}\right)}\right)$$

$$55 \log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+47+4+\phi = 51+\phi+55\log(a)\log_a\left(\frac{196\,884^{5/2}\left(1-196\,884^{25}\right)\left(1-196\,884^{47}\right)}{\left(1-196\,884^{35}\right)\left(1-196\,884^{37}\right)}\right)$$

$$55 \log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+47+4+\phi = 51+\phi-55\,\mathrm{Li}_1\left(1-\frac{196\,884^{5/2}\left(1-196\,884^{25}\right)\left(1-196\,884^{47}\right)}{\left(1-196\,884^{35}\right)\left(1-196\,884^{37}\right)}\right)$$

Series representations:

$$55 \log\left(\frac{196\,884^{5/2}\left(1-196\,884^{24\times 2-1}\right)\left(1-196\,884^{24\times 2-23}\right)}{\left(1-196\,884^{24\times 2-11}\right)\left(1-196\,884^{24\times 2-13}\right)}\right)+47+4+\phi = 51+\phi+110\,i\,\pi\left\lfloor\frac{\pi-\arg\left(\frac{1}{z_0}\right)-\arg(z_0)}{2\,\pi}\right\rfloor+55\log(z_0)-55\sum_{k=1}^{\infty}\frac{1}{k}(-1)^k \left(\left(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256\sqrt{5469}\right) / 26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821-z_0\right)^k z_0^{-k}$$

$$55 \log\left(\frac{196\,884^{5/2}\,(1-196\,884^{24\times 2-1})(1-196\,884^{24\times 2-23})}{(1-196\,884^{24\times 2-11})(1-196\,884^{24\times 2-13})}\right)+47+4+\phi =$$

$$51+\phi+55\log\Big(-1+$$
$$\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,\backslash$$
$$571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,\backslash$$
$$665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,\backslash$$
$$044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,\backslash$$
$$018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,\backslash$$
$$297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,\backslash$$
$$575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,\backslash$$
$$259\,930\,637\,440\,291\,820\,256\,\sqrt{5469}\big)\Big/$$
$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,\backslash$$
$$215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,\backslash$$
$$804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,\backslash$$
$$706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,\backslash$$
$$248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,\backslash$$
$$887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,\backslash$$
$$843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,\backslash$$
$$843\,759\,022\,821\Big)-55\sum_{k=1}^{\infty}\frac{1}{k}\Big(-\Big(1\Big/\Big(-1+$$
$$\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,\backslash$$
$$967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,\backslash$$
$$370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,\backslash$$
$$604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,\backslash$$
$$044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,\backslash$$
$$634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,\backslash$$
$$940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,\backslash$$
$$949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,\backslash$$
$$575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,\backslash$$
$$642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256$$
$$\sqrt{5469}\big)\Big/$$
$$26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,\backslash$$
$$592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,\backslash$$
$$755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,\backslash$$
$$143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,\backslash$$
$$431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,\backslash$$
$$227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,\backslash$$
$$702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,\backslash$$
$$344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,\backslash$$
$$943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Big)\Big)\Big)^{k}$$

$$
\begin{aligned}
&55 \log\left(\frac{196\,884^{5/2}\,(1-196\,884^{24\times 2-1})(1-196\,884^{24\times 2-23})}{(1-196\,884^{24\times 2-11})(1-196\,884^{24\times 2-13})}\right)+47+4+\phi = \\
&\quad 51+\phi+110\, i\,\pi \left\lfloor \frac{1}{2\pi} \arg\Big(\right. \\
&\qquad \big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389 \ddots \\
&\qquad\qquad 241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405 \ddots \\
&\qquad\qquad 480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481 \ddots \\
&\qquad\qquad 797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922 \ddots \\
&\qquad\qquad 634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170 \ddots \\
&\qquad\qquad 872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520 \ddots \\
&\qquad\qquad 195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870 \ddots \\
&\qquad\qquad 164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256 \\
&\qquad\quad \sqrt{5469}\big) \Big/ \\
&\qquad 26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779 \ddots \\
&\qquad\quad 868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372 \ddots \\
&\qquad\quad 419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768 \ddots \\
&\qquad\quad 137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512 \ddots \\
&\qquad\quad 820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670 \ddots \\
&\qquad\quad 747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181 \ddots \\
&\qquad\quad 347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943 \ddots \\
&\qquad\quad \left. 131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821 - x\Big) \right\rfloor + \\
&\quad 55 \log(x) - 55 \sum_{k=1}^{\infty} \frac{1}{k} (-1)^k \\
&\qquad \Big(\big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389 \ddots \\
&\qquad\qquad 241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611 \ddots \\
&\qquad\qquad 001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673 \ddots \\
&\qquad\qquad 228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704 \ddots \\
&\qquad\qquad 371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633 \ddots \\
&\qquad\qquad 773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498 \ddots \\
&\qquad\qquad 297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434 \ddots \\
&\qquad\qquad 433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164 \ddots \\
&\qquad\qquad 480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256 \\
&\qquad\quad \sqrt{5469}\big) \Big/ \\
&\qquad 26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592 \ddots \\
&\qquad\quad 779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570 \ddots \\
&\qquad\quad 498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955 \ddots \\
&\qquad\quad 128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847 \ddots \\
&\qquad\quad 222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448 \ddots \\
&\qquad\quad 276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464 \ddots \\
&\qquad\quad 982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620 \ddots \\
&\qquad\quad 847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916 \ddots \\
&\qquad\quad 843\,759\,022\,821 - x\Big)^k x^{-k} \quad \text{for } x < 0
\end{aligned}
$$

Integral representations:

$$55 \log\left(\frac{196\,884^{5/2} \left(1 - 196\,884^{24 \times 2-1}\right)\left(1 - 196\,884^{24 \times 2-23}\right)}{\left(1 - 196\,884^{24 \times 2-11}\right)\left(1 - 196\,884^{24 \times 2-13}\right)}\right) + 47 + 4 + \phi =$$

$$51 + \phi - \frac{55\, i}{2\pi} \int_{-i\,\infty+\gamma}^{i\,\infty+\gamma} \frac{1}{\Gamma(1-s)} \Big(-1 + \big(6\,087\,826\,936\,168\,882\,510\,199\,456\,124\,203\,023\,756\,551\,967\,967\,389\,241\,571\,252\,188\,139\,793\,402\,423\,376\,370\,238\,387\,611\,001\,405\,480\,301\,665\,547\,774\,417\,604\,120\,811\,260\,673\,228\,587\,533\,481\,797\,844\,400\,044\,855\,231\,728\,465\,704\,371\,900\,431\,092\,567\,922\,634\,776\,057\,351\,018\,167\,633\,773\,707\,827\,000\,367\,940\,379\,170\,872\,663\,838\,168\,498\,297\,832\,735\,886\,949\,104\,563\,148\,380\,520\,195\,197\,434\,433\,563\,579\,575\,567\,538\,160\,020\,935\,474\,895\,870\,164\,480\,132\,642\,794\,492\,017\,259\,930\,637\,440\,291\,820\,256 \sqrt{5469}\big) \big/ 26\,175\,211\,480\,498\,667\,350\,419\,362\,863\,026\,162\,890\,756\,592\,779\,868\,215\,608\,789\,359\,005\,039\,689\,231\,156\,626\,755\,570\,498\,372\,419\,636\,804\,507\,674\,500\,838\,781\,533\,143\,254\,955\,128\,850\,768\,137\,126\,380\,706\,413\,246\,066\,431\,677\,916\,847\,222\,468\,702\,512\,820\,367\,346\,359\,248\,227\,566\,862\,744\,448\,276\,466\,802\,859\,670\,747\,090\,331\,702\,200\,887\,957\,888\,464\,982\,234\,944\,352\,708\,181\,347\,344\,495\,671\,709\,972\,843\,620\,847\,540\,313\,297\,714\,892\,943\,131\,338\,077\,121\,215\,883\,916\,843\,759\,022\,821\Big)^{-s} \Gamma(-s)^2\, \Gamma(1+s)\, ds$$

for $-1 < \gamma < 0$

Order 48

$$W_{11}(q) = q^{1/2} \prod_{n=1}^{\infty} \frac{(1-q^{48n-11})(1-q^{48n-37})}{(1-q^{48n-13})(1-q^{48n-35})}$$

$$W_{7}(q) = q^{5/2} \prod_{n=1}^{\infty} \frac{(1-q^{48n-7})(1-q^{48n-41})}{(1-q^{48n-17})(1-q^{48n-31})}$$

$$W_{5}(q) = q^{7/2} \prod_{n=1}^{\infty} \frac{(1-q^{48n-5})(1-q^{48n-43})}{(1-q^{48n-19})(1-q^{48n-29})}$$

$$W_{1}(q) = q^{11/2} \prod_{n=1}^{\infty} \frac{(1-q^{48n-1})(1-q^{48n-47})}{(1-q^{48n-23})(1-q^{48n-25})}$$

0.5^(1/2) * product (((1-0.5^(48n-11)))(((1-0.5^(48n-37)))/(((1-0.5^(48n-13)))(((1-0.5^(48n-35))))))), n=1 to infinity

Input interpretation:

$$\sqrt{0.5} \prod_{n=1}^{\infty} (1-0.5^{48n-11}) \times \frac{1-0.5^{48n-37}}{(1-0.5^{48n-13})(1-0.5^{48n-35})}$$

Result:

0.706848

0.706848

0.5^(5/2) * product (((1-0.5^(48n-7)))(((1-0.5^(48n-41)))/(((1-0.5^(48n-17)))(((1-0.5^(48n-31))))))), n=1 to infinity

Input interpretation:

$$0.5^{5/2} \prod_{n=1}^{\infty} (1-0.5^{48n-7}) \times \frac{1-0.5^{48n-41}}{(1-0.5^{48n-17})(1-0.5^{48n-31})}$$

Result:

0.175397

0.175397

0.5^(7/2) * product (((1-0.5^(48n-5)))(((1-0.5^(48n-43)))/(((1-0.5^(48n-19)))(((1-0.5^(48n-29))))))), n=1 to infinity

Input interpretation:

$$0.5^{7/2} \prod_{n=1}^{\infty} (1 - 0.5^{48n-5}) \times \frac{1 - 0.5^{48n-43}}{(1 - 0.5^{48n-19})(1 - 0.5^{48n-29})}$$

Result:

0.0856264

0.0856264

0.5^(11/2) * product (((1-0.5^(48n-1)))(((1-0.5^(48n-47)))/(((1-0.5^(48n-23)))(((1-0.5^(48n-25))))))), n=1 to infinity

Input interpretation:

$$0.5^{11/2} \prod_{n=1}^{\infty} (1 - 0.5^{48n-1}) \times \frac{1 - 0.5^{48n-47}}{(1 - 0.5^{48n-23})(1 - 0.5^{48n-25})}$$

Result:

0.0110485

0.0110485

(0.706848+0.175397+0.0856264+0.0110485)

Input interpretation:

0.706848 + 0.175397 + 0.0856264 + 0.0110485

Result:

0.9789199

0.978199

(((0.706848+0.175397+0.0856264+0.0110485)))^1/64

Input interpretation:

$$\sqrt[64]{0.706848 + 0.175397 + 0.0856264 + 0.0110485}$$

Result:

0.99966716...

0.99966716... result very near to the value of the following Rogers-Ramanujan continued fraction:

$$\frac{e^{-\frac{\pi}{\sqrt{5}}}}{\frac{\sqrt{5}}{1+\sqrt[5]{\sqrt{\varphi^5\sqrt[4]{5^3}}-1}}-\varphi+1} = 1-\cfrac{e^{-\pi\sqrt{5}}}{1+\cfrac{e^{-2\pi\sqrt{5}}}{1+\cfrac{e^{-3\pi\sqrt{5}}}{1+\cfrac{e^{-4\pi\sqrt{5}}}{1+\dots}}}} \approx 0.9991104684$$

and to the dilaton value **0.989117352243 = ϕ**

2 log base 0.99966716(((0.706848+0.175397+0.0856264+0.0110485)))-Pi+1/golden ratio

where 2 is a Fibonacci number

Input interpretation:

$$2 \log_{0.99966716}(0.706848 + 0.175397 + 0.0856264 + 0.0110485) - \pi + \frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

125.477...

125.477… result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

Alternative representation:

$$2\log_{0.999667}(0.706848+0.175397+0.0856264+0.0110485)-\pi+\frac{1}{\phi}=$$
$$-\pi+\frac{1}{\phi}+\frac{2\log(0.97892)}{\log(0.999667)}$$

Series representations:

$$2\log_{0.999667}(0.706848+0.175397+0.0856264+0.0110485)-\pi+\frac{1}{\phi}=$$
$$\frac{1}{\phi}-\pi-\frac{2\sum_{k=1}^{\infty}\frac{(-1)^k(-0.0210801)^k}{k}}{\log(0.999667)}$$

$$2\log_{0.999667}(0.706848+0.175397+0.0856264+0.0110485)-\pi+\frac{1}{\phi}=$$
$$\frac{1}{\phi}-\pi-6007.89\log(0.97892)-2\log(0.97892)\sum_{k=0}^{\infty}(-0.00033284)^k\,G(k)$$
$$\text{for}\left(G(0)=0\text{ and }\frac{(-1)^k\,k}{2(1+k)(2+k)}+G(k)=\sum_{j=1}^{k}\frac{(-1)^{1+j}\,G(-j+k)}{1+j}\right)$$

2 log base 0.99966716(((0.706848+0.175397+0.0856264+0.0110485)))+11+1/golden ratio

where 11 is a Lucas number

Input interpretation:

$$2\log_{0.99966716}(0.706848+0.175397+0.0856264+0.0110485)+11+\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

139.619...

139.619… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternative representation:

$$2\log_{0.999667}(0.706848+0.175397+0.0856264+0.0110485)+11+\frac{1}{\phi}=$$
$$11+\frac{1}{\phi}+\frac{2\log(0.97892)}{\log(0.999667)}$$

Series representations:

$$2\log_{0.999667}(0.706848+0.175397+0.0856264+0.0110485)+11+\frac{1}{\phi}=$$
$$11+\frac{1}{\phi}-\frac{2\sum_{k=1}^{\infty}\frac{(-1)^k(-0.0210801)^k}{k}}{\log(0.999667)}$$

$$2\log_{0.999667}(0.706848+0.175397+0.0856264+0.0110485)+11+\frac{1}{\phi}=$$
$$11+\frac{1}{\phi}-6007.89\log(0.97892)-2\log(0.97892)\sum_{k=0}^{\infty}(-0.00033284)^k G(k)$$
$$\text{for }\left(G(0)=0\text{ and }\frac{(-1)^k k}{2(1+k)(2+k)}+G(k)=\sum_{j=1}^{k}\frac{(-1)^{1+j}G(-j+k)}{1+j}\right)$$

27 log base 0.99966716(((0.706848+0.175397+0.0856264+0.0110485)))

Input interpretation:

$$27\log_{0.99966716}(0.706848+0.175397+0.0856264+0.0110485)$$

$\log_b(x)$ is the base- b logarithm

Result:

1728.01...

1728.01…

This result is very near to the mass of candidate glueball $f_0(1710)$ meson. Furthermore, 1728 occurs in the algebraic formula for the j-invariant of an elliptic curve. As a consequence, it is sometimes called a Zagier as a pun on the Gross–Zagier theorem. The number 1728 is one less than the Hardy–Ramanujan number 1729

Alternative representation:

$$27 \log_{0.999667}(0.706848 + 0.175397 + 0.0856264 + 0.0110485) = \frac{27 \log(0.97892)}{\log(0.999667)}$$

Series representations:

$$27 \log_{0.999667}(0.706848 + 0.175397 + 0.0856264 + 0.0110485) = -\frac{27 \sum_{k=1}^{\infty} \frac{(-1)^k (-0.0210801)^k}{k}}{\log(0.999667)}$$

$$27 \log_{0.999667}(0.706848 + 0.175397 + 0.0856264 + 0.0110485) = -81\,106.6 \log(0.97892) - 27 \log(0.97892) \sum_{k=0}^{\infty} (-0.00033284)^k G(k)$$

$$\text{for } \left(G(0) = 0 \text{ and } \frac{(-1)^k k}{2(1+k)(2+k)} + G(k) = \sum_{j=1}^{k} \frac{(-1)^{1+j} G(-j+k)}{1+j}\right)$$

27 log base 0.99966716(((0.706848+0.175397+0.0856264+0.0110485)))+55

where 55 is a Fibonacci number

Input interpretation:

$$27 \log_{0.99966716}(0.706848 + 0.175397 + 0.0856264 + 0.0110485) + 55$$

$\log_b(x)$ is the base- b logarithm

Result:

1783.01...

1783.01… result in the range of the hypothetical mass of Gluino (gluino = 1785.16 GeV).

Alternative representation:

$$27 \log_{0.999667}(0.706848 + 0.175397 + 0.0856264 + 0.0110485) + 55 = 55 + \frac{27 \log(0.97892)}{\log(0.999667)}$$

Series representations:

$$27 \log_{0.999667}(0.706848 + 0.175397 + 0.0856264 + 0.0110485) + 55 = 55 - \frac{27 \sum_{k=1}^{\infty} \frac{(-1)^k (-0.0210801)^k}{k}}{\log(0.999667)}$$

$$27 \log_{0.999667}(0.706848 + 0.175397 + 0.0856264 + 0.0110485) + 55 = 55. - 81106.6 \log(0.97892) - 27 \log(0.97892) \sum_{k=0}^{\infty} (-0.00033284)^k G(k)$$

$$\text{for } \left(G(0) = 0 \text{ and } \frac{(-1)^k k}{2(1+k)(2+k)} + G(k) = \sum_{j=1}^{k} \frac{(-1)^{1+j} G(-j+k)}{1+j}\right)$$

From the sum of all results, we obtain:

(0.413266+0.63891+0.3813+0.178511+0.690407+0.309974+0.0884423+0.706848 +0.175397+0.0856264+0.0110485)*34

where 34 is a Fibonacci number

Input interpretation:

$$(0.413266 + 0.63891 + 0.3813 + 0.178511 + 0.690407 + 0.309974 + 0.0884423 + 0.706848 + 0.175397 + 0.0856264 + 0.0110485) \times 34$$

Result:

125.1108268

125.1108268 result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

(0.413266+0.63891+0.3813+0.178511+0.690407+0.309974+0.0884423+0.706848 +0.175397+0.0856264+0.0110485)*34+13+golden ratio

where 13 is a Fibonacci number

Input interpretation:

$$(0.413266 + 0.63891 + 0.3813 + 0.178511 + 0.690407 + 0.309974 + 0.0884423 + 0.706848 + 0.175397 + 0.0856264 + 0.0110485) \times 34 + 13 + \phi$$

ϕ is the golden ratio

Result:

139.729...

139.729... result practically equal to the rest mass of Pion meson 139.57 MeV

(0.413266+0.63891+0.3813+0.178511+0.690407+0.309974+0.0884423+0.706848+0.175397+0.0856264+0.0110485)^6-729-21-4

where 729 = 9^3 (see Ramanujan cubes), 21 is a Fibonacci number and 4 is a Lucas number

Input interpretation:

$$(0.413266+0.63891+0.3813+0.178511+0.690407+0.309974+0.0884423+0.706848+0.175397+0.0856264+0.0110485)^6-729-21-4$$

Result:

1728.5377584548070805466711589130501327346816 64

1728.537758....

This result is very near to the mass of candidate glueball $f_0(1710)$ meson. Furthermore, 1728 occurs in the algebraic formula for the j-invariant of an elliptic curve. As a consequence, it is sometimes called a Zagier as a pun on the Gross–Zagier theorem. The number 1728 is one less than the Hardy–Ramanujan number 1729

(0.413266+0.63891+0.3813+0.178511+0.690407+0.309974+0.0884423+0.706848+0.175397+0.0856264+0.0110485)^6-729+21+8

where 21 and 8 are Fibonacci numbers

Input interpretation:

$$(0.413266+0.63891+0.3813+0.178511+0.690407+0.309974+0.0884423+0.706848+0.175397+0.0856264+0.0110485)^6-729+21+8$$

Result:

1782.537758454807080546671158913050132734681664

1782.537758... result in the range of the hypothetical mass of Gluino (gluino = 1785.16 GeV).

For the last expression, for q = 535.49165, n = 2, we obtain:

535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25)))))))

Input interpretation:

$$535.49165^{11/2}\left(\left(1-535.49165^{48\times 2-1}\right)\times\frac{1-535.49165^{48\times 2-47}}{\left(1-535.49165^{48\times 2-23}\right)\left(1-535.49165^{48\times 2-25}\right)}\right)$$

Result:

$1.0189194854612264922015310646726129668275858852833310\ldots \times 10^{15}$

$1.01891948546\ldots * 10^{15}$

ln(((535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25))))))))))

Input interpretation:

$$\log\left(535.49165^{11/2}\left(\left(1-535.49165^{48\times 2-1}\right)\times\frac{1-535.49165^{48\times 2-47}}{\left(1-535.49165^{48\times 2-23}\right)\left(1-535.49165^{48\times 2-25}\right)}\right)\right)$$

log(x) is the natural logarithm

Result:

34.55752...

34.55752…

Alternative representations:

$$\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)=$$
$$\log_e\left(\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)$$

$$\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)=$$
$$\log(a)\log_a\left(\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)$$

$$\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)=$$
$$-\mathrm{Li}_1\left(1-\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)$$

Series representations:

$$\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)=$$
$$\log\left(1.01892\times 10^{15}\right)-\sum_{k=1}^{\infty}\frac{(-1)^k e^{-34.5575k}}{k}$$

$$\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)=$$
$$2i\pi\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-x\right)}{2\pi}\right\rfloor+\log(x)-$$
$$\sum_{k=1}^{\infty}\frac{(-1)^k\left(1.01892\times 10^{15}-x\right)^k x^{-k}}{k}\quad\text{for } x<0$$

$$\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)=$$
$$\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-z_0\right)}{2\pi}\right\rfloor\log\left(\frac{1}{z_0}\right)+\log(z_0)+$$
$$\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-z_0\right)}{2\pi}\right\rfloor\log(z_0)-\sum_{k=1}^{\infty}\frac{(-1)^k\left(1.01892\times 10^{15}-z_0\right)^k z_0^{-k}}{k}$$

Integral representations:

$$\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)=\int_1^{1.01892\times 10^{15}}\frac{1}{t}\,dt$$

$$\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)=\frac{1}{2i\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{-34.5575 s}\,\Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}\,ds \quad \text{for } -1<\gamma<0$$

4*ln(((535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25))))))))))+golden ratio

where 4 is a Lucas number

Input interpretation:

$$4\log\left(535.49165^{11/2}\left(\left(1-535.49165^{48\times 2-1}\right)\times\frac{1-535.49165^{48\times 2-47}}{\left(1-535.49165^{48\times 2-23}\right)\left(1-535.49165^{48\times 2-25}\right)}\right)\right)+\phi$$

log(x) is the natural logarithm

ϕ is the golden ratio

Result:

139.8481...

139.8481… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternative representations:

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi=\phi+4\log_e\left(\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)$$

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi+4\log(a)\log_a\left(\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)$$

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi-4\,\mathrm{Li}_1\left(1-\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)$$

Series representations:

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi+4\log\left(1.01892\times 10^{15}\right)-4\sum_{k=1}^{\infty}\frac{(-1)^k e^{-34.5575\,k}}{k}$$

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi+8\,i\,\pi\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-x\right)}{2\,\pi}\right\rfloor+4\log(x)-4\sum_{k=1}^{\infty}\frac{(-1)^k\left(1.01892\times 10^{15}-x\right)^k x^{-k}}{k} \quad \text{for } x<0$$

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi+4\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-z_0\right)}{2\,\pi}\right\rfloor\log\left(\frac{1}{z_0}\right)+4\log(z_0)+4\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-z_0\right)}{2\,\pi}\right\rfloor\log(z_0)-4\sum_{k=1}^{\infty}\frac{(-1)^k\left(1.01892\times 10^{15}-z_0\right)^k z_0^{-k}}{k}$$

Integral representations:

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi+4\int_1^{1.01892\times 10^{15}}\frac{1}{t}\,dt$$

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi =$$
$$\phi+\frac{2}{i\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{-34.5575 s}\,\Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}\,ds \quad \text{for } -1<\gamma<0$$

4*ln(((535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25)))))))))))-13+1/golden ratio

where 13 is a Fibonacci number

Input interpretation:

$$4\log\left(535.49165^{11/2}\left(\left(1-535.49165^{48\times 2-1}\right)\times \frac{1-535.49165^{48\times 2-47}}{\left(1-535.49165^{48\times 2-23}\right)\left(1-535.49165^{48\times 2-25}\right)}\right)\right)-13+\frac{1}{\phi}$$

$\log(x)$ is the natural logarithm

ϕ is the golden ratio

Result:

125.8481...

125.8481… result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

Alternative representations:

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)-13+\frac{1}{\phi}=$$
$$-13+4\log_e\left(\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)+\frac{1}{\phi}$$

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)-13+\frac{1}{\phi}=$$
$$-13+4\log(a)\log_a\left(\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)+\frac{1}{\phi}$$

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)-13+\frac{1}{\phi}=$$
$$-13-4\,\text{Li}_1\left(1-\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)+\frac{1}{\phi}$$

Series representations:

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)-13+\frac{1}{\phi}=$$
$$-13+\frac{1}{\phi}+4\log\left(1.01892\times 10^{15}\right)-4\sum_{k=1}^{\infty}\frac{(-1)^k e^{-34.5575\,k}}{k}$$

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)-13+\frac{1}{\phi}=$$
$$-13+\frac{1}{\phi}+8\,i\,\pi\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-x\right)}{2\,\pi}\right\rfloor+4\log(x)-$$
$$4\sum_{k=1}^{\infty}\frac{(-1)^k\left(1.01892\times 10^{15}-x\right)^k x^{-k}}{k}\quad\text{for } x<0$$

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)-13+\frac{1}{\phi}=$$
$$-13+\frac{1}{\phi}+4\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-z_0\right)}{2\,\pi}\right\rfloor\log\left(\frac{1}{z_0}\right)+4\log(z_0)+$$
$$4\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-z_0\right)}{2\,\pi}\right\rfloor\log(z_0)-4\sum_{k=1}^{\infty}\frac{(-1)^k\left(1.01892\times 10^{15}-z_0\right)^k z_0^{-k}}{k}$$

Integral representations:

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)-13+\frac{1}{\phi}=$$
$$-13+\frac{1}{\phi}+4\int_1^{1.01892\times 10^{15}}\frac{1}{t}\,dt$$

$$4\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)-13+\frac{1}{\phi}=$$
$$-13+\frac{1}{\phi}+\frac{2}{i\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{-34.5575\,s}\,\Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}\,ds \quad \text{for } -1<\gamma<0$$

5*10*ln(((535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25)))))))))+golden ratio

where 5 is a Fibonacci number

Input interpretation:

$$5\times 10\log\left(535.49165^{11/2}\left(\left(1-535.49165^{48\times 2-1}\right)\times\frac{1-535.49165^{48\times 2-47}}{\left(1-535.49165^{48\times 2-23}\right)\left(1-535.49165^{48\times 2-25}\right)}\right)\right)+\phi$$

log(x) is the natural logarithm

ϕ is the golden ratio

Result:

1729.494...

1729.494…

This result is very near to the mass of candidate glueball $f_0(1710)$ meson. Furthermore, 1728 occurs in the algebraic formula for the j-invariant of an elliptic curve. As a consequence, it is sometimes called a Zagier as a pun on the Gross–Zagier theorem. The number 1728 is one less than the Hardy–Ramanujan number 1729

Alternative representations:

$$5\times 10\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi=$$
$$\phi+50\log_e\left(\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)$$

$$5\times 10\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi+50\log(a)\log_a\left(\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)$$

$$5\times 10\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi-50\,\mathrm{Li}_1\left(1-\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}\right)$$

Series representations:

$$5\times 10\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi+50\log\left(1.01892\times 10^{15}\right)-50\sum_{k=1}^{\infty}\frac{(-1)^k e^{-34.5575\,k}}{k}$$

$$5\times 10\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi+100\,i\,\pi\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-x\right)}{2\pi}\right\rfloor+50\log(x)-50\sum_{k=1}^{\infty}\frac{(-1)^k\left(1.01892\times 10^{15}-x\right)^k x^{-k}}{k}\quad\text{for } x<0$$

$$5\times 10\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi+50\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-z_0\right)}{2\pi}\right\rfloor\log\left(\frac{1}{z_0}\right)+50\log(z_0)+50\left\lfloor\frac{\arg\left(1.01892\times 10^{15}-z_0\right)}{2\pi}\right\rfloor\log(z_0)-50\sum_{k=1}^{\infty}\frac{(-1)^k\left(1.01892\times 10^{15}-z_0\right)^k z_0^{-k}}{k}$$

Integral representations:

$$5\times 10\log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+\phi = \phi+50\int_1^{1.01892\times 10^{15}}\frac{1}{t}\,dt$$

$$5\times 10\log\left(\frac{535.492^{11/2}\,(1-535.492^{48\times 2-1})(1-535.492^{48\times 2-47})}{(1-535.492^{48\times 2-23})(1-535.492^{48\times 2-25})}\right)+\phi =$$
$$\phi+\frac{25}{i\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{-34.5575 s}\,\Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}\,ds \quad \text{for } -1<\gamma<0$$

5*10*ln(((535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25)))))))))+55-1/golden ratio

where 55 is a Fibonacci number

Input interpretation:

$$5\times 10\log\left(535.49165^{11/2}\left((1-535.49165^{48\times 2-1})\times\frac{1-535.49165^{48\times 2-47}}{(1-535.49165^{48\times 2-23})(1-535.49165^{48\times 2-25})}\right)\right)+55-\frac{1}{\phi}$$

log(x) is the natural logarithm

ϕ is the golden ratio

Result:

1782.258...

1782.258…

result in the range of the hypothetical mass of Gluino (gluino = 1785.16 GeV).

Alternative representations:

$$5\times 10\log\left(\frac{535.492^{11/2}\,(1-535.492^{48\times 2-1})(1-535.492^{48\times 2-47})}{(1-535.492^{48\times 2-23})(1-535.492^{48\times 2-25})}\right)+55-\frac{1}{\phi}=$$
$$55+50\log_e\left(\frac{535.492^{11/2}\,(1-535.492^{49})(1-535.492^{95})}{(1-535.492^{71})(1-535.492^{73})}\right)-\frac{1}{\phi}$$

$$5 \times 10 \log\left(\frac{535.492^{11/2}\,(1-535.492^{48\times 2-1})\,(1-535.492^{48\times 2-47})}{(1-535.492^{48\times 2-23})\,(1-535.492^{48\times 2-25})}\right)+55-\frac{1}{\phi} =$$
$$55+50\log(a)\log_a\left(\frac{535.492^{11/2}\,(1-535.492^{49})\,(1-535.492^{95})}{(1-535.492^{71})\,(1-535.492^{73})}\right)-\frac{1}{\phi}$$

$$5 \times 10 \log\left(\frac{535.492^{11/2}\,(1-535.492^{48\times 2-1})\,(1-535.492^{48\times 2-47})}{(1-535.492^{48\times 2-23})\,(1-535.492^{48\times 2-25})}\right)+55-\frac{1}{\phi} =$$
$$55-50\,\mathrm{Li}_1\left(1-\frac{535.492^{11/2}\,(1-535.492^{49})\,(1-535.492^{95})}{(1-535.492^{71})\,(1-535.492^{73})}\right)-\frac{1}{\phi}$$

Series representations:

$$5 \times 10 \log\left(\frac{535.492^{11/2}\,(1-535.492^{48\times 2-1})\,(1-535.492^{48\times 2-47})}{(1-535.492^{48\times 2-23})\,(1-535.492^{48\times 2-25})}\right)+55-\frac{1}{\phi} =$$
$$55-\frac{1}{\phi}+50\log(1.01892\times 10^{15})-50\sum_{k=1}^{\infty}\frac{(-1)^k e^{-34.5575\,k}}{k}$$

$$5 \times 10 \log\left(\frac{535.492^{11/2}\,(1-535.492^{48\times 2-1})\,(1-535.492^{48\times 2-47})}{(1-535.492^{48\times 2-23})\,(1-535.492^{48\times 2-25})}\right)+55-\frac{1}{\phi} =$$
$$55-\frac{1}{\phi}+100\,i\,\pi\left\lfloor\frac{\arg(1.01892\times 10^{15}-x)}{2\,\pi}\right\rfloor+50\log(x)-50\sum_{k=1}^{\infty}\frac{(-1)^k\,(1.01892\times 10^{15}-x)^k\,x^{-k}}{k} \quad \text{for } x<0$$

$$5 \times 10 \log\left(\frac{535.492^{11/2}\,(1-535.492^{48\times 2-1})\,(1-535.492^{48\times 2-47})}{(1-535.492^{48\times 2-23})\,(1-535.492^{48\times 2-25})}\right)+55-\frac{1}{\phi} =$$
$$55-\frac{1}{\phi}+50\left\lfloor\frac{\arg(1.01892\times 10^{15}-z_0)}{2\,\pi}\right\rfloor\log\left(\frac{1}{z_0}\right)+50\log(z_0)+50\left\lfloor\frac{\arg(1.01892\times 10^{15}-z_0)}{2\,\pi}\right\rfloor\log(z_0)-50\sum_{k=1}^{\infty}\frac{(-1)^k\,(1.01892\times 10^{15}-z_0)^k\,z_0^{-k}}{k}$$

Integral representations:

$$5 \times 10 \log\left(\frac{535.492^{11/2}\,(1-535.492^{48\times 2-1})\,(1-535.492^{48\times 2-47})}{(1-535.492^{48\times 2-23})\,(1-535.492^{48\times 2-25})}\right)+55-\frac{1}{\phi} =$$
$$55-\frac{1}{\phi}+50\int_1^{1.01892\times 10^{15}}\frac{1}{t}\,dt$$

$$5 \times 10 \log\left(\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}\right)+55-\frac{1}{\phi}=$$
$$55-\frac{1}{\phi}+\frac{25}{i\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{-34.5575 s}\,\Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}\,ds \quad \text{for } -1<\gamma<0$$

(((1/((535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25)))))))))))^1/4096

Input interpretation:

$$\sqrt[4096]{\frac{1}{535.49165^{11/2}\left(\left(1-535.49165^{48\times 2-1}\right)\times\frac{1-535.49165^{48\times 2-47}}{\left(1-535.49165^{48\times 2-23}\right)\left(1-535.49165^{48\times 2-25}\right)}\right)}}$$

Result:

0.991598596...

0.991598596… result very near to the value of the following Rogers-Ramanujan continued fraction:

$$\frac{e^{-\frac{\pi}{\sqrt{5}}}}{\frac{\sqrt{5}}{1+\sqrt[5]{\sqrt{\varphi^5\sqrt[4]{5^3}}-1}}-\varphi+1}=1-\cfrac{e^{-\pi\sqrt{5}}}{1+\cfrac{e^{-2\pi\sqrt{5}}}{1+\cfrac{e^{-3\pi\sqrt{5}}}{1+\cfrac{e^{-4\pi\sqrt{5}}}{1+\ldots}}}}\approx 0.9991104684$$

and to the dilaton value $\mathbf{0.989117352243} = \boldsymbol{\phi}$

2 sqrt (((log base 0.991598596(((1/((535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25))))))))))))))-Pi+1/golden ratio

Input interpretation:

$$2\sqrt{\log_{0.991598596}\left(\frac{1}{535.49165^{11/2}\left(\left(1-535.49165^{48\times 2-1}\right)\times\frac{1-535.49165^{48\times 2-47}}{\left(1-535.49165^{48\times 2-23}\right)\left(1-535.49165^{48\times 2-25}\right)}\right)}\right)}-\pi+\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

125.4764...

125.4764… result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

Alternative representation:

$$2\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)}-\pi+\frac{1}{\phi}=$$

$$-\pi+\frac{1}{\phi}+2\sqrt{\frac{\log\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}}\right)}{\log(0.991599)}}$$

Series representations:

$$2\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)} - \pi + \frac{1}{\phi} = \frac{1}{\phi} - \pi + 2\sqrt{-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)}\sum_{k=0}^{\infty}\binom{\frac{1}{2}}{k}\left(-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)\right)^{-k}$$

$$2\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)} - \pi + \frac{1}{\phi} = \frac{1}{\phi} - \pi + 2\sqrt{-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)}\sum_{k=0}^{\infty}\frac{(-1)^k\left(-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)\right)^{-k}\left(-\frac{1}{2}\right)_k}{k!}$$

$$2\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)} - \pi + \frac{1}{\phi} = \frac{1}{\phi} - \pi + 2\sqrt{-\log\left(9.81432\times 10^{-16}\right)\left(118.528+\sum_{k=0}^{\infty}(-0.0084014)^k G(k)\right)}$$

$$\text{for }\left(G(0)=0 \text{ and } \frac{(-1)^k k}{2(1+k)(2+k)} + G(k) = \sum_{j=1}^{k}\frac{(-1)^{1+j} G(-j+k)}{1+j}\right)$$

2 sqrt (((log base 0.991598596(((1/((535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25))))))))))))))+11+1/golden ratio

where 11 is a Lucas number

Input interpretation:

$$2\sqrt{\log_{0.991598596}\left(\frac{1}{535.49165^{11/2}\left((1-535.49165^{48\times2-1})\times\frac{1-535.49165^{48\times2-47}}{(1-535.49165^{48\times2-23})(1-535.49165^{48\times2-25})}\right)}\right)}+11+\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

139.6180...

139.6180… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternative representation:

$$2\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}(1-535.492^{48\times2-1})(1-535.492^{48\times2-47})}{(1-535.492^{48\times2-23})(1-535.492^{48\times2-25})}}\right)}+11+\frac{1}{\phi}=$$

$$11+\frac{1}{\phi}+2\sqrt{\frac{\log\left(\frac{1}{\frac{535.492^{11/2}(1-535.492^{49})(1-535.492^{95})}{(1-535.492^{71})(1-535.492^{73})}}\right)}{\log(0.991599)}}$$

Series representations:

$$2\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}(1-535.492^{48\times2-1})(1-535.492^{48\times2-47})}{(1-535.492^{48\times2-23})(1-535.492^{48\times2-25})}}\right)}+11+\frac{1}{\phi}=11+\frac{1}{\phi}+$$

$$2\sqrt{-1+\log_{0.991599}(9.81432\times10^{-16})}\sum_{k=0}^{\infty}\binom{\frac{1}{2}}{k}\left(-1+\log_{0.991599}(9.81432\times10^{-16})\right)^{-k}$$

$$2\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\,(1-535.492^{48\times 2-1})(1-535.492^{48\times 2-47})}{(1-535.492^{48\times 2-23})(1-535.492^{48\times 2-25})}}\right)}+11+\frac{1}{\phi}=$$

$$11+\frac{1}{\phi}+2\sqrt{-1+\log_{0.991599}(9.81432\times 10^{-16})}\sum_{k=0}^{\infty}\frac{(-1)^k\,(-1+\log_{0.991599}(9.81432\times 10^{-16}))^{-k}\left(-\frac{1}{2}\right)_k}{k!}$$

$$2\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\,(1-535.492^{48\times 2-1})(1-535.492^{48\times 2-47})}{(1-535.492^{48\times 2-23})(1-535.492^{48\times 2-25})}}\right)}+11+\frac{1}{\phi}=$$

$$11+\frac{1}{\phi}+2\sqrt{-\log(9.81432\times 10^{-16})\left(118.528+\sum_{k=0}^{\infty}(-0.0084014)^k\,G(k)\right)}$$

$$\text{for}\left(G(0)=0\text{ and }\frac{(-1)^k\,k}{2\,(1+k)\,(2+k)}+G(k)=\sum_{j=1}^{k}\frac{(-1)^{1+j}\,G(-j+k)}{1+j}\right)$$

27 sqrt (((log base 0.991598596(((1/((535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25)))))))))))))))+1/golden ratio

Input interpretation:

$$27\sqrt{\log_{0.991598596}\left(\frac{1}{535.49165^{11/2}\left((1-535.49165^{48\times 2-1})\times\frac{1-535.49165^{48\times 2-47}}{(1-535.49165^{48\times 2-23})(1-535.49165^{48\times 2-25})}\right)}\right)}+\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

1728.618...

1728.618…

This result is very near to the mass of candidate glueball $f_0(1710)$ meson. Furthermore, 1728 occurs in the algebraic formula for the j-invariant of an elliptic curve. As a consequence, it is sometimes called a Zagier as a pun on the Gross–Zagier theorem. The number 1728 is one less than the Hardy–Ramanujan number 1729

Alternative representation:

$$27\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)}+\frac{1}{\phi}=$$

$$\frac{1}{\phi}+27\sqrt{\frac{\log\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}}\right)}{\log(0.991599)}}$$

Series representations:

$$27\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)}+\frac{1}{\phi}=$$

$$\frac{1}{\phi}+27\sqrt{-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)}\sum_{k=0}^{\infty}\binom{\frac{1}{2}}{k}\left(-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)\right)^{-k}$$

$$27\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)}+\frac{1}{\phi}=$$

$$\frac{1}{\phi}+27\sqrt{-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)}\sum_{k=0}^{\infty}\frac{(-1)^k\left(-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)\right)^{-k}\left(-\frac{1}{2}\right)_k}{k!}$$

$$27\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)}+\frac{1}{\phi}=$$

$$\frac{1}{\phi}+27\sqrt{-\log\left(9.81432\times 10^{-16}\right)\left(118.528+\sum_{k=0}^{\infty}(-0.0084014)^k\, G(k)\right)}$$

$$\text{for}\left(G(0)=0 \text{ and } \frac{(-1)^k\, k}{2\,(1+k)\,(2+k)}+G(k)=\sum_{j=1}^{k}\frac{(-1)^{1+j}\, G(-j+k)}{1+j}\right)$$

27 sqrt (((log base 0.991598596(((1/((535.49165^(11/2) * (((1-535.49165^(48*2-1)))(((1-535.49165^(48*2-47)))/(((1-535.49165^(48*2-23)))(((1-535.49165^(48*2-25))))))))))))))+55-1/golden ratio

where 55 is a Fibonacci number

Input interpretation:

$$27\sqrt{\log_{0.991598596}\left(\frac{1}{535.49165^{11/2}\left(\left(1-535.49165^{48\times 2-1}\right)\times\frac{1-535.49165^{48\times 2-47}}{\left(1-535.49165^{48\times 2-23}\right)\left(1-535.49165^{48\times 2-25}\right)}\right)}\right)}+55-\frac{1}{\phi}$$

$\log_b(x)$ is the base- b logarithm

ϕ is the golden ratio

Result:

1782.382...

1782.382… result in the range of the hypothetical mass of Gluino (gluino = 1785.16 GeV).

Alternative representation:

$$27\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)}+55-\frac{1}{\phi}=$$

$$55-\frac{1}{\phi}+27\sqrt{\frac{\log\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{49}\right)\left(1-535.492^{95}\right)}{\left(1-535.492^{71}\right)\left(1-535.492^{73}\right)}}\right)}{\log(0.991599)}}$$

Series representations:

$$27\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)}+55-\frac{1}{\phi}=$$

$$55-\frac{1}{\phi}+27\sqrt{-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)}\sum_{k=0}^{\infty}\binom{\frac{1}{2}}{k}\left(-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)\right)^{-k}$$

$$27\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}\left(1-535.492^{48\times 2-1}\right)\left(1-535.492^{48\times 2-47}\right)}{\left(1-535.492^{48\times 2-23}\right)\left(1-535.492^{48\times 2-25}\right)}}\right)}+55-\frac{1}{\phi}=$$

$$55-\frac{1}{\phi}+27\sqrt{-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)}\sum_{k=0}^{\infty}\frac{(-1)^k\left(-1+\log_{0.991599}\left(9.81432\times 10^{-16}\right)\right)^{-k}\left(-\frac{1}{2}\right)_k}{k!}$$

$$27\sqrt{\log_{0.991599}\left(\frac{1}{\frac{535.492^{11/2}(1-535.492^{48\times2-1})(1-535.492^{48\times2-47})}{(1-535.492^{48\times2-23})(1-535.492^{48\times2-25})}}\right)}+55-\frac{1}{\phi}=$$

$$55-\frac{1}{\phi}+27\sqrt{-\log(9.81432\times10^{-16})\left(118.528+\sum_{k=0}^{\infty}(-0.0084014)^k\,G(k)\right)}$$

$$\text{for}\left(G(0)=0\text{ and }\frac{(-1)^k\,k}{2\,(1+k)\,(2+k)}+G(k)=\sum_{j=1}^{k}\frac{(-1)^{1+j}\,G(-j+k)}{1+j}\right)$$

Now, we consider q = 8.080174e+53, that is the Monster Group order, and n = 2. We obtain

(8.080174e+53)^(11/2) * (((1-(8.080174e+53)^(48*2-1)))(((1-(8.080174e+53)^(48*2-47)))/(((1-(8.080174e+53)^(48*2-23)))(((1-(8.080174e+53)^(48*2-25)))))))

Input interpretation:

$$(8.080174\times10^{53})^{11/2}\left((1-(8.080174\times10^{53})^{48\times2-1})\times\frac{1-(8.080174\times10^{53})^{48\times2-47}}{(1-(8.080174\times10^{53})^{48\times2-23})(1-(8.080174\times10^{53})^{48\times2-25})}\right)$$

Result:

$3.09609...\times10^{296}$

$3.09609...*10^{296}$

2.718281828*ln((((8.080174e+53)^(11/2) * (((1-(8.080174e+53)^(48*2-1)))(((1-(8.080174e+53)^(48*2-47)))/(((1-(8.080174e+53)^(48*2-23)))(((1-(8.080174e+53)^(48*2-25)))))))))+13+0.618034

where 2.718281828 is the Euler number and 13 is a Fibonacci number

Input interpretation:

$$2.718281828\log\left((8.080174\times10^{53})^{11/2}\left((1-(8.080174\times10^{53})^{48\times2-1})\times\frac{1-(8.080174\times10^{53})^{48\times2-47}}{(1-(8.080174\times10^{53})^{48\times2-23})(1-(8.080174\times10^{53})^{48\times2-25})}\right)\right)+13+0.618034$$

log(x) is the natural logarithm

Result:

1869.376...

1869.376.... result practically equal to the rest mass of D meson 1869.61

2.718281828*ln((((8.080174e+53)^(11/2) * (((1-(8.080174e+53)^(48*2-1)))(((1-(8.080174e+53)^(48*2-47)))/(((1-(8.080174e+53)^(48*2-23)))(((1-(8.080174e+53)^(48*2-25)))))))))-123-4

where 123 and 4 are Lucas numbers

Input interpretation:

$$2.718281828 \log\left((8.080174\times 10^{53})^{11/2}\left((1-(8.080174\times 10^{53})^{48\times 2-1})\times \frac{1-(8.080174\times 10^{53})^{48\times 2-47}}{(1-(8.080174\times 10^{53})^{48\times 2-23})(1-(8.080174\times 10^{53})^{48\times 2-25})}\right)\right)-123-4$$

log(x) is the natural logarithm

Result:

1728.758...

1728.758…

This result is very near to the mass of candidate glueball $f_0(1710)$ meson. Furthermore, 1728 occurs in the algebraic formula for the j-invariant of an elliptic curve. As a consequence, it is sometimes called a Zagier as a pun on the Gross–Zagier theorem. The number 1728 is one less than the Hardy–Ramanujan number 1729

Pi*ln((((8.080174e+53)^(11/2) * (((1-(8.080174e+53)^(48*2-1)))(((1-(8.080174e+53)^(48*2-47)))/(((1-(8.080174e+53)^(48*2-23)))(((1-(8.080174e+53)^(48*2-25)))))))))-34+golden ratio

where 34 is a Fibonacci number

Input interpretation:

$$\pi \log\left((8.080174\times 10^{53})^{11/2}\left((1-(8.080174\times 10^{53})^{48\times 2-1})\times \frac{1-(8.080174\times 10^{53})^{48\times 2-47}}{(1-(8.080174\times 10^{53})^{48\times 2-23})(1-(8.080174\times 10^{53})^{48\times 2-25})}\right)\right)-34+\phi$$

log(x) is the natural logarithm

ϕ is the golden ratio

Result:

2112.369...

2112.369... result practically equal to the rest mass of strange D meson 2112.1

2*ln((((8.080174e+53)^(11/2) * (((1-(8.080174e+53)^(48*2-1)))(((1-(8.080174e+53)^(48*2-47)))/(((1-(8.080174e+53)^(48*2-23)))(((1-(8.080174e+53)^(48*2-25)))))))))+21+1/golden ratio

where 21 is a Fibonacci number

Input interpretation:

$$2 \log\left((8.080174\times 10^{53})^{11/2}\left((1-(8.080174\times 10^{53})^{48\times 2-1})\times \frac{1-(8.080174\times 10^{53})^{48\times 2-47}}{(1-(8.080174\times 10^{53})^{48\times 2-23})(1-(8.080174\times 10^{53})^{48\times 2-25})}\right)\right)+21+\frac{1}{\phi}$$

log(x) is the natural logarithm

ϕ is the golden ratio

Result:

1387.009...

1387.009... result practically equal to the rest mass of Sigma baryon 1387.2

(((1/((((8.080174e+53)^(11/2) * (((1-(8.080174e+53)^(48*2-1)))(((1-(8.080174e+53)^(48*2-47)))/(((1-(8.080174e+53)^(48*2-23)))(((1-(8.080174e+53)^(48*2-25))))))))))))^1/(64*128)

Input interpretation:

$$\left(1\Big/\left(\left(8.080174\times10^{53}\right)^{11/2}\left(\left(1-\left(8.080174\times10^{53}\right)^{48\times2-1}\right)\times\frac{1-\left(8.080174\times10^{53}\right)^{48\times2-47}}{\left(1-\left(8.080174\times10^{53}\right)^{48\times2-23}\right)\left(1-\left(8.080174\times10^{53}\right)^{48\times2-25}\right)}\right)\right)\right)^{\wedge}\left(\frac{1}{64\times128}\right)$$

Result:

0.920041195638616812113521028079655070306990435811761560286...

0.9200411956... result very near to the range of the Regge slope of Omega meson 0.910-0.918 (see below)

From:

Rotating strings confronting PDG mesons
Jacob Sonnenschein and Dorin Weissman

Traj.	N	m	α'	a
π/b	4	$m_{u/d} = 90 - 185$	$0.808 - 0.863$	$(-0.23) - 0.00$
ρ/a	6	$m_{u/d} = 0 - 180$	$0.883 - 0.933$	$0.47 - 0.66$
η/h	5	$m_{u/d} = 0 - 70$	$0.839 - 0.854$	$(-0.25) - (-0.21)$
ω	6	$m_{u/d} = 0 - 60$	$0.910 - 0.918$	$0.45 - 0.50$
K^*	5	$m_{u/d} = 0 - 240$ $m_s = 0 - 390$	$0.848 - 0.927$	$0.32 - 0.62$
ϕ	3	$m_s = 400$	1.078	0.82
D	3	$m_{u/d} = 80$ $m_c = 1640$	1.073	−0.07
D_s^*	3	$m_s = 400$ $m_c = 1580$	1.093	0.89
Ψ	3	$m_c = 1500$	0.979	−0.09
Υ	3	$m_b = 4730$	0.635	1.00

Table 1. The results of the meson fits in the (J, M^2) plane. For the uneven K^* fit the higher values of m_s require $m_{u/d}$ to take a correspondingly low value. $m_{u/d} + m_s$ never exceeds 480 MeV, and the highest masses quoted for the s are obtained when $m_{u/d} = 0$. The ranges listed are those where χ^2 is within 10% of its optimal value. N is the number of data points in the trajectory.

1/64 log base 0.920041(((1/((((8.080174e+53)^(11/2) * (((1-(8.080174e+53)^(48*2-1)))(((1-(8.080174e+53)^(48*2-47)))/(((1-(8.080174e+53)^(48*2-23)))(((1-(8.080174e+53)^(48*2-25))))))))))))-Pi+0.618034

Input interpretation:

$$\frac{1}{64}\log_{0.920041}\left(1\left/\left((8.080174\times 10^{53})^{11/2}\left((1-(8.080174\times 10^{53})^{48\times 2-1})\times \frac{1-(8.080174\times 10^{53})^{48\times 2-47}}{(1-(8.080174\times 10^{53})^{48\times 2-23})(1-(8.080174\times 10^{53})^{48\times 2-25})}\right)\right)\right.\right)-\pi+0.618034$$

$\log_b(x)$ is the base- b logarithm

Result:

125.476...

125.476… result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

1/64 log base 0.920041(((1/((((8.080174e+53)^(11/2) * (((1-(8.080174e+53)^(48*2-1)))(((1-(8.080174e+53)^(48*2-47)))/(((1-(8.080174e+53)^(48*2-23)))(((1-(8.080174e+53)^(48*2-25))))))))))))+11+0.618034

where 11 is a Lucas number

Input interpretation:

$$\frac{1}{64}\log_{0.920041}\left(1\left/\left((8.080174\times 10^{53})^{11/2}\left((1-(8.080174\times 10^{53})^{48\times 2-1})\times \frac{1-(8.080174\times 10^{53})^{48\times 2-47}}{(1-(8.080174\times 10^{53})^{48\times 2-23})(1-(8.080174\times 10^{53})^{48\times 2-25})}\right)\right)\right.\right)+11+0.618034$$

$\log_b(x)$ is the base- b logarithm

Result:

139.618...

139.618… result practically equal to the rest mass of Pion meson 139.57 MeV

From:

Canad. Math. Bull. Vol. 42 (4), 1999 pp. 427–440
Ramanujan and the Modular *j*-Invariant
Bruce C. Berndt and Heng Huat Chan

Now, we have that:

Theorem 1.1 *For $q = \exp(-\pi\sqrt{n})$, define*

$$t := t_n := \sqrt{3}q^{1/18}\frac{f(q^{1/3})f(q^3)}{f^2(q)}. \tag{1.13}$$

Then

$$t_n = \left(2\sqrt{64J_n^2 - 24J_n + 9} - (16J_n - 3)\right)^{1/6}. \tag{1.14}$$

Ramanujan then gives a table of polynomials satisfied by t_n, for five values of n.

Theorem 1.2 *For the values of n given below, we have the following table of polynomials $p_n(t)$ satisfied by t_n.*

n	$p_n(t)$
11	$t-1$
35	t^2+t-1
59	t^3+2t-1
83	t^3+2t^2+2t-1
107	t^3-2t^2+4t-1

From

$$J_{35} = \sqrt{5}\left(\frac{\sqrt{5}+1}{2}\right)^4.$$

The eq. (1.14) become:

$$t_{35} = \left(2\sqrt{64\cdot 5\left(\frac{\sqrt{5}+1}{2}\right)^8 - 24\sqrt{5}\left(\frac{\sqrt{5}+1}{2}\right)^4 + 9} - \left(16\sqrt{5}\left(\frac{\sqrt{5}+1}{2}\right)^4 - 3\right)\right)^{1/6}$$

$$= \left(2\sqrt{7349 + 3276\sqrt{5}} - 117 - 56\sqrt{5}\right)^{1/6}.$$

((((((((((2*((((64*5((sqrt5+1)/2)^8-24sqrt5((sqrt5+1)/2)^4+9)))^1/2))))-(16sqrt5((sqrt5+1)/2)^4-3))))))))^1/6

Input:

$$\sqrt[6]{2\sqrt{64\times 5\left(\frac{1}{2}\left(\sqrt{5}+1\right)\right)^8 - 24\sqrt{5}\left(\frac{1}{2}\left(\sqrt{5}+1\right)\right)^4 + 9} - \left(16\sqrt{5}\left(\frac{1}{2}\left(\sqrt{5}+1\right)\right)^4 - 3\right)}$$

Result:

$$\sqrt[6]{3 - \sqrt{5}\left(1+\sqrt{5}\right)^4 + 2\sqrt{9 - \frac{3}{2}\sqrt{5}\left(1+\sqrt{5}\right)^4 + \frac{5}{4}\left(1+\sqrt{5}\right)^8}}$$

Decimal approximation:

0.6180339887498948482045868343656381177203091798057628621354...

0.618033988749…..

Alternate forms:

$$\frac{1}{2}\left(\sqrt{5}-1\right)$$

$$\sqrt[6]{-117 - 56\sqrt{5} + 2\sqrt{7349 + 3276\sqrt{5}}}$$

$$\sqrt[6]{3 - \sqrt{5}\left(1+\sqrt{5}\right)^4 + 2\sqrt{7529 - 36\sqrt{5}\left(\sqrt{5}-91\right)}}$$

Minimal polynomial:

$x^2 + x - 1$

Continued fraction:

$$\cfrac{1}{1+\cfrac{1}{\cdots}}}}}}}}}}}}}}}}}}}}}}}}$$

All 6th roots of 3 - sqrt(5) (1 + sqrt(5))^4 + 2 sqrt(9 - 3/2 sqrt(5) (1 + sqrt(5))^4 + 5/4 (1 + sqrt(5))^8):

$$\sqrt[6]{3-\sqrt{5}\left(1+\sqrt{5}\right)^4+2\sqrt{9-\frac{3}{2}\sqrt{5}\left(1+\sqrt{5}\right)^4+\frac{5}{4}\left(1+\sqrt{5}\right)^8}}\; e^0 \approx 0.6$$

(real, principal root)

$$\sqrt[6]{3-\sqrt{5}\left(1+\sqrt{5}\right)^4+2\sqrt{9-\frac{3}{2}\sqrt{5}\left(1+\sqrt{5}\right)^4+\frac{5}{4}\left(1+\sqrt{5}\right)^8}}\; e^{(i\pi)/3} \approx 0.3+0.5\,i$$

$$\sqrt[6]{3-\sqrt{5}\left(1+\sqrt{5}\right)^4+2\sqrt{9-\frac{3}{2}\sqrt{5}\left(1+\sqrt{5}\right)^4+\frac{5}{4}\left(1+\sqrt{5}\right)^8}}\ e^{(2i\pi)/3} \approx -0.3+0.5\,i$$

$$\sqrt[6]{3-\sqrt{5}\left(1+\sqrt{5}\right)^4+2\sqrt{9-\frac{3}{2}\sqrt{5}\left(1+\sqrt{5}\right)^4+\frac{5}{4}\left(1+\sqrt{5}\right)^8}}\ e^{i\pi} \approx -0.6 \quad \text{(real root)}$$

$$\sqrt[6]{3-\sqrt{5}\left(1+\sqrt{5}\right)^4+2\sqrt{9-\frac{3}{2}\sqrt{5}\left(1+\sqrt{5}\right)^4+\frac{5}{4}\left(1+\sqrt{5}\right)^8}}\ e^{-(2i\pi)/3} \approx -0.3-0.5\,i$$

((((2(7349+3276sqrt5)^1/2-117-56sqrt5)))^1/6

Input:

$$\sqrt[6]{2\sqrt{7349+3276\sqrt{5}}-117-56\sqrt{5}}$$

Decimal approximation:

0.6180339887498948482045868343656381177203091798057628621354...

0.618033988749…..

Alternate forms:

$$\frac{1}{2}\left(\sqrt{5}-1\right)$$

$$\sqrt[6]{9-4\sqrt{5}}$$

$$\sqrt[6]{-117-56\sqrt{5}+2\left(63+26\sqrt{5}\right)}$$

Minimal polynomial:

$$x^2+x-1$$

All 6th roots of -117 - 56 sqrt(5) + 2 sqrt(7349 + 3276 sqrt(5)):

$$\sqrt[6]{-117-56\sqrt{5}+2\sqrt{7349+3276\sqrt{5}}}\ e^{0} \approx 0.6 \quad \text{(real, principal root)}$$

$$\sqrt[6]{-117-56\sqrt{5}+2\sqrt{7349+3276\sqrt{5}}}\ e^{(i\pi)/3} \approx 0.31+0.5\,i$$

$$\sqrt[6]{-117-56\sqrt{5}+2\sqrt{7349+3276\sqrt{5}}}\ e^{(2i\pi)/3} \approx -0.31+0.5i$$

$$\sqrt[6]{-117-56\sqrt{5}+2\sqrt{7349+3276\sqrt{5}}}\ e^{i\pi} \approx -0.6 \text{ (real root)}$$

$$\sqrt[6]{-117-56\sqrt{5}+2\sqrt{7349+3276\sqrt{5}}}\ e^{-(2i\pi)/3} \approx -0.31-0.5i$$

1/((((((2(7349+3276sqrt5)^1/2-117-56sqrt5)))^1/6)))

Input:

$$\frac{1}{\sqrt[6]{2\sqrt{7349+3276\sqrt{5}}-117-56\sqrt{5}}}$$

Decimal approximation:

1.618033988749894848204586834365638117720309179805762862135...

1.61803398874989….. result that is the value of the golden ratio

Alternate forms:

$$\frac{1}{2}\left(1+\sqrt{5}\right)$$

$$\frac{1}{\sqrt[6]{9-4\sqrt{5}}}$$

$$\frac{1}{\sqrt[6]{-117-56\sqrt{5}+2\left(63+26\sqrt{5}\right)}}$$

Minimal polynomial:

x^2-x-1

Continued fraction:

$$1+\cfrac{1}{\cdots}}}}}}}}}}}}}}}}}}}}}}}$$

Appendix

Three-dimensional AdS gravity and extremal CFTs at c = 8m

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m	L_0	d	S	S_{BH}
3	1	196883	12.1904	12.5664
	2	21296876	16.8741	17.7715
	3	842609326	20.5520	21.7656
4	2/3	139503	11.8458	11.8477
	5/3	69193488	18.0524	18.7328
	8/3	6928824200	22.6589	23.6954
5	1/3	20619	9.9340	9.3664
	4/3	86645620	18.2773	18.7328
	7/3	24157197490	23.9078	24.7812
6	1	42987519	17.5764	17.7715
	2	40448921875	24.4233	25.1327
	3	8463511703277	29.7668	30.7812
7	2/3	7402775	15.8174	15.6730
	5/3	33934039437	24.2477	24.7812
	8/3	16953652012291	30.4615	31.3460
8	1/3	278511	12.5372	11.8477
	4/3	13996384631	23.3621	23.6954
	7/3	19400406113385	30.5963	31.3460

Table 1: Degeneracies, microscopic entropies and semiclassical entropies for the first few values of m and L_0.

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