Further mathematical connections between various solutions of Ramanujan's equations and some particle masses and Cosmological parameters: Pion meson (139.57 MeV), Higgs boson, scalar meson $f_0(1710)$, hypothetical gluino and Cosmological Constant value. XIV

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Abstract

In this research thesis, we have analyzed further Ramanujan formulas and described further possible mathematical connections with some parameters of Particle Physics and Cosmology: Pion meson mass (139.57 MeV), Higgs boson mass, scalar meson $f_0(1710)$ mass, hypothetical gluino mass and Cosmological Constant value.

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From:

https://www.wikiwand.com/en/Pi

Srinivasa Ramanujan, working in isolation in India, produced many innovative series for computing π.

From:

Modular equations and approximations to π - *Srinivasa Ramanujan* - Quarterly Journal of Mathematics, XLV, 1914, 350 – 372

$$\pi = \frac{24}{\sqrt{142}} \log \left\{ \sqrt{\left(\frac{10+11\sqrt{2}}{4}\right)} + \sqrt{\left(\frac{10+7\sqrt{2}}{4}\right)} \right\}$$

Summary

In this research thesis, we have analyzed the possible and new connections between different formulas of Ramanujan's mathematics and some formulas concerning particle physics and cosmology. In the course of the discussion we describe and highlight the connections between some developments of Ramanujan equations and particles type solutions such as the mass of the Higgs boson, and the masses of some baryons and mesons.

Moreover solutions of Ramanujan equations, connected with the mass of candidate glueball f_0(1710) meson and with the hypothetical mass of Gluino (gluino = 1785.16 GeV), the masses of the π mesons (139.57 MeV) have been described and highlighted. Furthermore, we have obtained also the value of the Cosmological Constant.

All the results of the most important connections are highlighted in blue throughout the drafting of the paper

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MANUSCRIPT BOOK 1 OF SRINIVASA RAMANUJAN

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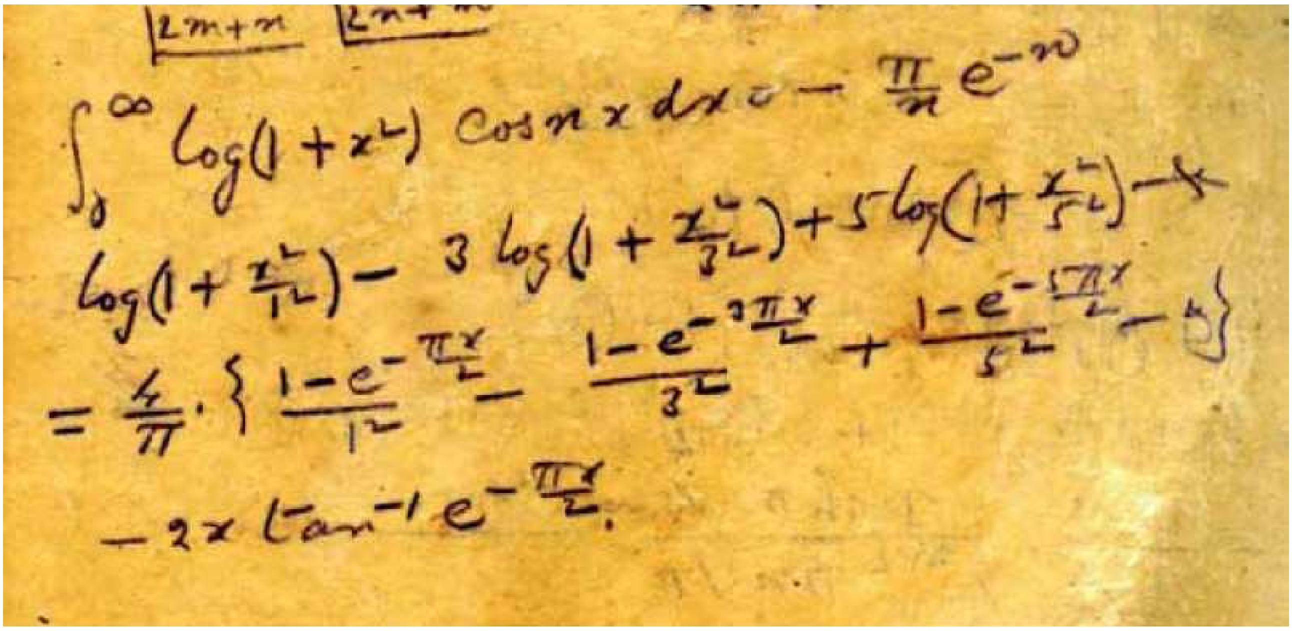

for x = 2 and n = 8, we obtain:

4/Pi * (((1-e^(-Pi) – (1-e^(-3Pi)/(3^2)) + (1-e^(-5Pi)/(5^2))))) – 4 tan^-1(e^-Pi)

Input:

$$\frac{4}{\pi}\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)-4\tan^{-1}\left(e^{-\pi}\right)$$

$\tan^{-1}(x)$ is the inverse tangent function

Exact Result:

$$\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)$$

(result in radians)

Decimal approximation:

1.045481089990804929843170409244130499174030865104459079924...

(result in radians)

1.045481089…..

Alternate forms:

$$\frac{4-\frac{4e^{-5\pi}}{25}+\frac{4e^{-3\pi}}{9}-4e^{-\pi}}{\pi}-4\cot^{-1}(e^{\pi})$$

$$-\frac{4\left(-225+9e^{-5\pi}-25e^{-3\pi}+225e^{-\pi}+225\pi\tan^{-1}(e^{-\pi})\right)}{225\pi}$$

$$\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\cot^{-1}(e^{\pi})$$

$\cot^{-1}(x)$ is the inverse cotangent function

Alternative representations:

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}(e^{-\pi})=$$
$$-4\,\mathrm{sc}^{-1}(e^{-\pi}\mid 0)+\frac{4\left(1+\frac{e^{-3\pi}}{9}-e^{-\pi}-\frac{e^{-5\pi}}{5^2}\right)}{\pi}$$

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}(e^{-\pi})=$$
$$-4\tan^{-1}(1,e^{-\pi})+\frac{4\left(1+\frac{e^{-3\pi}}{9}-e^{-\pi}-\frac{e^{-5\pi}}{5^2}\right)}{\pi}$$

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}(e^{-\pi})=$$
$$-4\cot^{-1}\left(\frac{1}{e^{-\pi}}\right)+\frac{4\left(1+\frac{e^{-3\pi}}{9}-e^{-\pi}-\frac{e^{-5\pi}}{5^2}\right)}{\pi}$$

Series representations:

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}(e^{-\pi})=$$
$$\frac{4}{\pi}-\frac{4e^{-5\pi}}{25\pi}+\frac{4e^{-3\pi}}{9\pi}-\frac{4e^{-\pi}}{\pi}-4\sum_{k=0}^{\infty}\frac{e^{(-1-(2-i)k)\pi}}{1+2k}$$

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}(e^{-\pi})=$$
$$\frac{4}{\pi}-\frac{4e^{-5\pi}}{25\pi}+\frac{4e^{-3\pi}}{9\pi}-\frac{4e^{-\pi}}{\pi}-2i\log(2)+2i\log\left(i\left(-i+e^{-\pi}\right)\right)+2i\sum_{k=1}^{\infty}\frac{\left(\frac{1}{2}+\frac{ie^{-\pi}}{2}\right)^k}{k}$$

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)=$$
$$\frac{4}{\pi}-\frac{4e^{-5\pi}}{25\pi}+\frac{4e^{-3\pi}}{9\pi}-\frac{4e^{-\pi}}{\pi}+2i\log(2)-2i\log\left(-i\left(i+e^{-\pi}\right)\right)-2i\sum_{k=1}^{\infty}\frac{\left(-\frac{1}{2}i\left(i+e^{-\pi}\right)\right)^k}{k}$$

Integral representations:

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)=$$
$$\frac{4}{\pi}-\frac{4e^{-5\pi}}{25\pi}+\frac{4e^{-3\pi}}{9\pi}-\frac{4e^{-\pi}}{\pi}-4e^{-\pi}\int_0^1\frac{1}{1+e^{-2\pi}t^2}\,dt$$

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)=\frac{4}{\pi}-\frac{4e^{-5\pi}}{25\pi}+\frac{4e^{-3\pi}}{9\pi}-$$
$$\frac{4e^{-\pi}}{\pi}+\frac{ie^{-\pi}}{\pi^{3/2}}\int_{-i\infty+\gamma}^{i\infty+\gamma}\left(1+e^{-2\pi}\right)^{-s}\Gamma\left(\frac{1}{2}-s\right)\Gamma(1-s)\Gamma(s)^2\,ds \quad \text{for } 0<\gamma<\frac{1}{2}$$

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)=\frac{4}{\pi}-\frac{4e^{-5\pi}}{25\pi}+\frac{4e^{-3\pi}}{9\pi}-$$
$$\frac{4e^{-\pi}}{\pi}+\frac{ie^{-\pi}}{\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{2\pi s}\,\Gamma\left(\frac{1}{2}-s\right)\Gamma(1-s)\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\,ds \quad \text{for } 0<\gamma<\frac{1}{2}$$

Continued fraction representations:

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)=$$
$$\frac{4-\frac{4e^{-5\pi}}{25}+\frac{4e^{-3\pi}}{9}-4e^{-\pi}}{\pi}-\frac{4e^{-\pi}}{1+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{e^{-2\pi}k^2}{1+2k}}=$$
$$\frac{4-\frac{4e^{-5\pi}}{25}+\frac{4e^{-3\pi}}{9}-4e^{-\pi}}{\pi}-\frac{4e^{-\pi}}{1+\frac{e^{-2\pi}}{3+\frac{4e^{-2\pi}}{5+\frac{9e^{-2\pi}}{7+\frac{16e^{-2\pi}}{9+\dots}}}}}$$

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)=$$

$$\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\left(e^{-\pi}-\frac{e^{-3\pi}}{3+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{e^{-2\pi}\left(1+(-1)^{1+k}+k\right)^2}{3+2k}}\right)=$$

$$\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\left(e^{-\pi}-\frac{e^{-3\pi}}{3+\frac{9e^{-2\pi}}{5+\frac{4e^{-2\pi}}{7+\frac{25e^{-2\pi}}{9+\frac{16e^{-2\pi}}{11+\dots}}}}}\right)$$

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)=$$

$$\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4e^{-\pi}}{1+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{e^{-2\pi}(-1+2k)^2}{1+2k-e^{-2\pi}(-1+2k)}}=$$

$$\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4e^{-\pi}}{1+\frac{e^{-2\pi}}{3-e^{-2\pi}+\frac{9e^{-2\pi}}{5-3e^{-2\pi}+\frac{25e^{-2\pi}}{7-5e^{-2\pi}+\frac{49e^{-2\pi}}{9+\dots-7e^{-2\pi}}}}}}$$

$$\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)=$$

$$\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4e^{-\pi}}{1+e^{-2\pi}+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{2e^{-2\pi}\left(1-2\left\lfloor\frac{1+k}{2}\right\rfloor\right)\left\lfloor\frac{1+k}{2}\right\rfloor}{\left(1+\frac{1}{2}\left(1+(-1)^k\right)e^{-2\pi}\right)(1+2k)}}=$$

$$\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4e^{-\pi}}{1+e^{-2\pi}+-\frac{2e^{-2\pi}}{3-\frac{2e^{-2\pi}}{5\left(1+e^{-2\pi}\right)-\frac{12e^{-2\pi}}{7-\frac{12e^{-2\pi}}{9\left(1+e^{-2\pi}\right)+\dots}}}}}$$

From which, we obtain:

1/10^52(((((((4/Pi * (((1-e^(-Pi) – (1-e^(-3Pi)/(3^2)) + (1-e^(-5Pi)/(5^2))))) – 4 tan^-1(e^-Pi))))+((1/golden ratio*1/10))-16/10^4))))

Input:

$$\frac{1}{10^{52}}\left(\left(\frac{4}{\pi}\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi}\times\frac{1}{10}-\frac{16}{10^4}\right)$$

$\tan^{-1}(x)$ is the inverse tangent function

ϕ is the golden ratio

Exact Result:

$$\frac{\frac{1}{10\phi}-\frac{1}{625}+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\tan^{-1}(e^{-\pi})}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

(result in radians)

Decimal approximation:

$1.1056844888657944146636290926806943109460617830850353\ldots\times10^{-52}$

(result in radians)

1.10568448…*10^{-52} result practically equal to the value of Cosmological Constant 1.1056*10^{-52} m^{-2}

Alternate forms:

$$\frac{\frac{1}{10\phi}-\frac{1}{625}-4\cot^{-1}(e^{\pi})+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}+\sinh(\pi)-\cosh(\pi)\right)}{\pi}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$-\left(\left(1800\,e^{-5\pi}\,\phi-5000\,e^{-3\pi}\,\phi+45\,000\,e^{-\pi}\,\phi-9\,(2\,(2500-\pi)\,\phi+125\,\pi)+45\,000\,\pi\,\phi\tan^{-1}(e^{-\pi})\right)/\left(112\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi\,\phi\right)\right)$$

$$\frac{-\frac{1}{625}+\frac{1}{5\left(1+\sqrt{5}\right)}+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\cot^{-1}(e^{\pi})}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Alternative representations:

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=\frac{-4\,\mathrm{sc}^{-1}(e^{-\pi}\mid 0)+\frac{1}{10\,\phi}+\frac{4\left(1+\frac{e^{-3\pi}}{9}-e^{-\pi}-\frac{e^{-5\pi}}{5^2}\right)}{\pi}-\frac{16}{10^4}}{10^{52}}$$

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=\frac{-4\tan^{-1}(1,e^{-\pi})+\frac{1}{10\,\phi}+\frac{4\left(1+\frac{e^{-3\pi}}{9}-e^{-\pi}-\frac{e^{-5\pi}}{5^2}\right)}{\pi}-\frac{16}{10^4}}{10^{52}}$$

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=\frac{-4\cot^{-1}\left(\frac{1}{e^{-\pi}}\right)+\frac{1}{10\,\phi}+\frac{4\left(1+\frac{e^{-3\pi}}{9}-e^{-\pi}-\frac{e^{-5\pi}}{5^2}\right)}{\pi}-\frac{16}{10^4}}{10^{52}}$$

Series representations:

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=$$

$$-\frac{1}{6\,250\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{1}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\phi}+\frac{1}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-5\pi}}{62\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}+\frac{e^{-3\pi}}{22\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-\pi}}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{\sum_{k=0}^{\infty}\frac{e^{(-1-(2-i)k)\pi}}{1+2k}}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=$$

$$-\frac{1}{6\,250\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{1}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\phi}+\frac{1}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-5\pi}}{62\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}+\frac{e^{-3\pi}}{22\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-\pi}}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{\sum_{k=0}^{\infty}\frac{\left(-\frac{1}{5}\right)^k 2^{1+2k}\,e^{-(1+2k)\pi}\left(1+\sqrt{1+\frac{4e^{-2\pi}}{5}}\right)^{-1-2k}F_{1+2k}}{1+2k}}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=$$

$$-\frac{1}{6\,250\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{1}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\phi}+\frac{1}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-5\pi}}{62\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}+\frac{e^{-3\pi}}{22\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-\pi}}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-\pi}\sum_{j=0}^{\infty}\text{Res}_{s=-j}\frac{e^{2\pi s}\,\Gamma\left(\frac{1}{2}-s\right)\Gamma(1-s)\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}}{5\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Integral representations:

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=$$

$$-\frac{1}{6\,250\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{1}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\phi}+\frac{1}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-5\pi}}{62\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}+\frac{e^{-3\pi}}{22\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-\pi}}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-\pi}}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}\int_0^1\frac{1}{1+e^{-2\pi}t^2}\,dt$$

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=$$

$$-\frac{1}{6\,250\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+1\Big/\left(50\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(1+\sqrt{5}\right)\right)+$$

$$\frac{1}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-5\pi}}{62\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}+$$

$$\frac{e^{-3\pi}}{22\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-\pi}}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}+$$

$$\frac{i\,e^{-\pi}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi^{3/2}}\int_{-i\infty+\gamma}^{i\infty+\gamma}\left(1+e^{-2\pi}\right)^{-s}\Gamma\left(\frac{1}{2}-s\right)\Gamma(1-s)\,\Gamma(s)^2\,ds \quad \text{for } 0<\gamma<\frac{1}{2}$$

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=$$

$$-\frac{1}{6\,250\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{1}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\phi}+$$

$$\frac{1}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-5\pi}}{62\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}+$$

$$\frac{e^{-3\pi}}{22\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}-\frac{e^{-\pi}}{2\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}+$$

$$\frac{i\,e^{-\pi}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{2\pi s}\,\Gamma\left(\frac{1}{2}-s\right)\Gamma(1-s)\,\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\,ds \quad \text{for } 0<\gamma<\frac{1}{2}$$

Continued fraction representations:

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=$$

$$\frac{-\frac{1}{625}+\frac{1}{10\,\phi}+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4\,e^{-\pi}}{1+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{e^{-2\pi}\,k^2}{1+2\,k}}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}=$$

$$\frac{-\frac{1}{625}+\frac{1}{10\,\phi}+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4\,e^{-\pi}}{1+\frac{e^{-2\pi}}{3+\frac{4\,e^{-2\pi}}{5+\frac{9\,e^{-2\pi}}{7+\frac{16\,e^{-2\pi}}{9+\dots}}}}}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=$$

$$\frac{-\frac{1}{625}+\frac{1}{10\,\phi}+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\left(e^{-\pi}-\frac{e^{-3\pi}}{3+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{e^{-2\pi}\left(1+(-1)^{1+k}+k\right)^2}{3+2\,k}}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}=$$

$$\frac{-\frac{1}{625}+\frac{1}{10\,\phi}+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\left(e^{-\pi}-\frac{e^{-3\pi}}{3+\frac{9\,e^{-2\pi}}{5+\frac{4\,e^{-2\pi}}{7+\frac{25\,e^{-2\pi}}{9+\frac{16\,e^{-2\pi}}{11+\dots}}}}}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=$$

$$\frac{-\frac{1}{625}+\frac{1}{10\,\phi}+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4\,e^{-\pi}}{1+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{e^{-2\pi}(-1+2k)^2}{1+2k-e^{-2\pi}(-1+2k)}}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}=$$

$$\frac{-\frac{1}{625}+\frac{1}{10\,\phi}+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4\,e^{-\pi}}{1+\frac{e^{-2\pi}}{3-e^{-2\pi}+\frac{9\,e^{-2\pi}}{5-3\,e^{-2\pi}+\frac{25\,e^{-2\pi}}{7-5\,e^{-2\pi}+\frac{49\,e^{-2\pi}}{9+\ldots-7\,e^{-2\pi}}}}}}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\left(\frac{4\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)}{\pi}-4\tan^{-1}(e^{-\pi})\right)+\frac{1}{\phi\,10}-\frac{16}{10^4}}{10^{52}}=$$

$$\frac{-\frac{1}{625}+\frac{1}{10\,\phi}+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4\,e^{-\pi}}{1+e^{-2\pi}+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{2\,e^{-2\pi}\left(1-2\left\lfloor\frac{1+k}{2}\right\rfloor\right)\left\lfloor\frac{1+k}{2}\right\rfloor}{\left(1+\frac{1}{2}\left(1+(-1)^k\right)e^{-2\pi}\right)(1+2k)}}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}=$$

$$\frac{-\frac{1}{625}+\frac{1}{10\,\phi}+\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4\,e^{-\pi}}{1+e^{-2\pi}+-\frac{2\,e^{-2\pi}}{3-\frac{2\,e^{-2\pi}}{5\left(1+e^{-2\pi}\right)-\frac{12\,e^{-2\pi}}{7-\frac{12\,e^{-2\pi}}{9\left(1+e^{-2\pi}\right)+\ldots}}}}}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

And again:

10^3*(((4/Pi * (((1-e^(-Pi) – (1-e^(-3Pi)/(3^2)) + (1-e^(-5Pi)/(5^2))))) – 4 tan^-1(e^-Pi))))+27^2+8

Where 8 is a Fibonacci number

Input:

$$10^3\left(\frac{4}{\pi}\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8$$

$\tan^{-1}(x)$ is the inverse tangent function

Exact Result:

$$737+1000\left(\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)$$

(result in radians)

Decimal approximation:

1782.481089990804929843170409244130499174030865104459079924...

(result in radians)

1782.481089…. result in the range of the hypothetical mass of Gluino (gluino = 1785.16 GeV).

Alternate forms:

$$737+1000\left(\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\cot^{-1}\left(e^{\pi}\right)\right)$$

$$737+1000\left(\frac{4-\frac{4e^{-5\pi}}{25}+\frac{4e^{-3\pi}}{9}-4e^{-\pi}}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)$$

$$-\frac{1440e^{-5\pi}-4000e^{-3\pi}+36000e^{-\pi}-9(4000+737\pi)+36000\pi\tan^{-1}(e^{-\pi})}{9\pi}$$

$\cot^{-1}(x)$ is the inverse cotangent function

Alternative representations:

$$10^3\left(\frac{\left(\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8=$$

$$8+27^2+10^3\left(-4\,\mathrm{sc}^{-1}\left(e^{-\pi}\mid 0\right)+\frac{4\left(1+\frac{e^{-3\pi}}{9}-e^{-\pi}-\frac{e^{-5\pi}}{5^2}\right)}{\pi}\right)$$

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8=$$
$$8+27^2+10^3\left(-4\tan^{-1}\left(1,e^{-\pi}\right)+\frac{4\left(1+\frac{e^{-3\pi}}{9}-e^{-\pi}-\frac{e^{-5\pi}}{5^2}\right)}{\pi}\right)$$

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8=$$
$$8+27^2+10^3\left(-4\cot^{-1}\left(\frac{1}{e^{-\pi}}\right)+\frac{4\left(1+\frac{e^{-3\pi}}{9}-e^{-\pi}-\frac{e^{-5\pi}}{5^2}\right)}{\pi}\right)$$

Series representations:

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8=$$
$$737+\frac{4000}{\pi}-\frac{160\,e^{-5\pi}}{\pi}+\frac{4000\,e^{-3\pi}}{9\pi}-\frac{4000\,e^{-\pi}}{\pi}-4000\sum_{k=0}^{\infty}\frac{e^{(-1-(2-i)k)\pi}}{1+2k}$$

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8=$$
$$737+\frac{4000}{\pi}-\frac{160\,e^{-5\pi}}{\pi}+\frac{4000\,e^{-3\pi}}{9\pi}-\frac{4000\,e^{-\pi}}{\pi}-$$
$$2000\,i\log(2)+2000\,i\log\left(i\left(-i+e^{-\pi}\right)\right)+2000\,i\sum_{k=1}^{\infty}\frac{\left(\frac{1}{2}+\frac{i\,e^{-\pi}}{2}\right)^k}{k}$$

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8=$$
$$737+\frac{4000}{\pi}-\frac{160\,e^{-5\pi}}{\pi}+\frac{4000\,e^{-3\pi}}{9\pi}-\frac{4000\,e^{-\pi}}{\pi}+$$
$$2000\,i\log(2)-2000\,i\log\left(-i\left(i+e^{-\pi}\right)\right)-2000\,i\sum_{k=1}^{\infty}\frac{\left(-\frac{1}{2}\,i\left(i+e^{-\pi}\right)\right)^k}{k}$$

Integral representations:

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8 =$$

$$737+\frac{4000}{\pi}-\frac{160\,e^{-5\pi}}{\pi}+\frac{4000\,e^{-3\pi}}{9\pi}-\frac{4000\,e^{-\pi}}{\pi}-4000\,e^{-\pi}\int_0^1 \frac{1}{1+e^{-2\pi}\,t^2}\,dt$$

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8 =$$

$$737+\frac{4000}{\pi}-\frac{160\,e^{-5\pi}}{\pi}+\frac{4000\,e^{-3\pi}}{9\pi}-\frac{4000\,e^{-\pi}}{\pi}+ \frac{1000\,i\,e^{-\pi}}{\pi^{3/2}}\int_{-i\infty+\gamma}^{i\infty+\gamma}\left(1+e^{-2\pi}\right)^{-s}\,\Gamma\left(\frac{1}{2}-s\right)\Gamma(1-s)\,\Gamma(s)^2\,ds \quad \text{for } 0<\gamma<\frac{1}{2}$$

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8 =$$

$$737+\frac{4000}{\pi}-\frac{160\,e^{-5\pi}}{\pi}+\frac{4000\,e^{-3\pi}}{9\pi}-\frac{4000\,e^{-\pi}}{\pi}+ \frac{1000\,i\,e^{-\pi}}{\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{2\pi s}\,\Gamma\left(\frac{1}{2}-s\right)\Gamma(1-s)\,\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\,ds \quad \text{for } 0<\gamma<\frac{1}{2}$$

Continued fraction representations:

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8 =$$

$$737+1000\left(\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4\,e^{-\pi}}{1+\mathop{\mathrm{K}}_{k=1}^{\infty}\frac{e^{-2\pi}\,k^2}{1+2k}}\right)=$$

$$737+1000\left(\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4\,e^{-\pi}}{1+\frac{e^{-2\pi}}{3+\frac{4\,e^{-2\pi}}{5+\frac{9\,e^{-2\pi}}{7+\frac{16\,e^{-2\pi}}{9+\dots}}}}}\right)$$

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8=$$

$$737+1000\left(\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\left(e^{-\pi}-\frac{e^{-3\pi}}{3+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{e^{-2\pi}\left(1+(-1)^{1+k}+k\right)^2}{3+2k}}\right)\right)=$$

$$737+1000\left(\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-4\left(e^{-\pi}-\frac{e^{-3\pi}}{3+\frac{9e^{-2\pi}}{5+\frac{4e^{-2\pi}}{7+\frac{25e^{-2\pi}}{9+\frac{16e^{-2\pi}}{11+\dots}}}}}\right)\right)$$

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8=$$

$$737+1000\left(\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4e^{-\pi}}{1+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{e^{-2\pi}(-1+2k)^2}{1+2k-e^{-2\pi}(-1+2k)}}\right)=737+1000$$

$$\left(\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4e^{-\pi}}{1+\frac{e^{-2\pi}}{3-e^{-2\pi}+\frac{9e^{-2\pi}}{5-3e^{-2\pi}+\frac{25e^{-2\pi}}{7-5e^{-2\pi}+\frac{49e^{-2\pi}}{9+\dots-7e^{-2\pi}}}}}}\right)$$

$$10^3\left(\frac{\left(1-e^{-\pi}-\left(1-\frac{e^{-3\pi}}{3^2}\right)+\left(1-\frac{e^{-5\pi}}{5^2}\right)\right)4}{\pi}-4\tan^{-1}\left(e^{-\pi}\right)\right)+27^2+8=737+$$

$$1000\left(\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4e^{-\pi}}{1+e^{-2\pi}+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{2e^{-2\pi}\left(1-2\left\lfloor\frac{1+k}{2}\right\rfloor\right)\left\lfloor\frac{1+k}{2}\right\rfloor}{\left(1+\frac{1}{2}\left(1+(-1)^k\right)e^{-2\pi}\right)(1+2k)}}\right)=737+$$

$$1000\left(\frac{4\left(1-\frac{e^{-5\pi}}{25}+\frac{e^{-3\pi}}{9}-e^{-\pi}\right)}{\pi}-\frac{4e^{-\pi}}{1+e^{-2\pi}+-\frac{2e^{-2\pi}}{3-\frac{2e^{-2\pi}}{5\left(1+e^{-2\pi}\right)-\frac{12e^{-2\pi}}{7-\frac{12e^{-2\pi}}{9\left(1+e^{-2\pi}\right)+\dots}}}}}\right)$$

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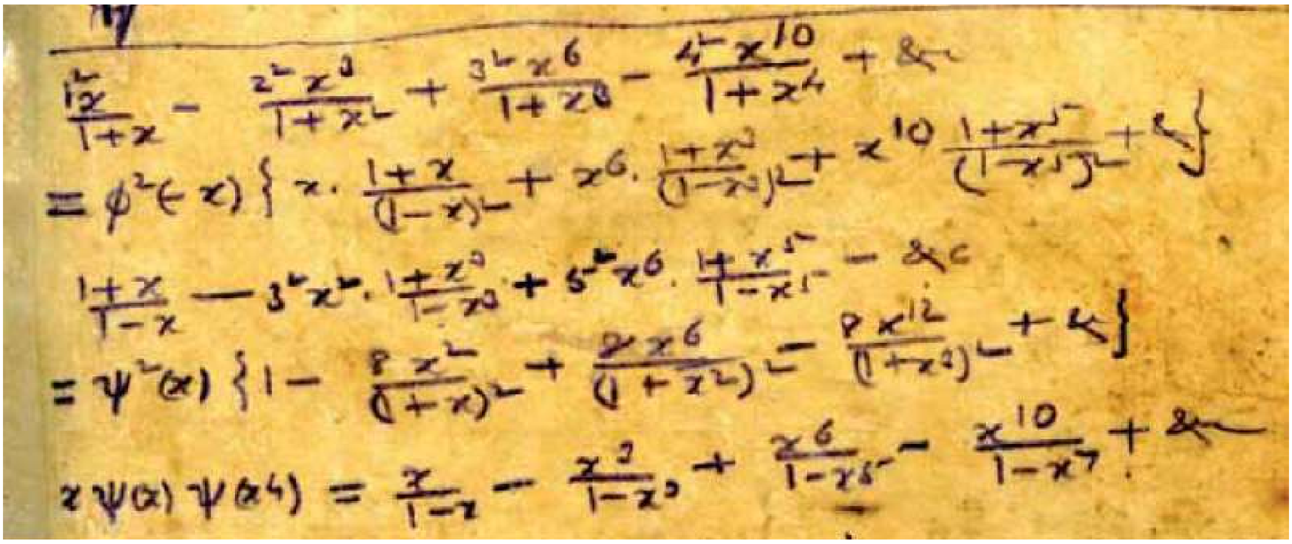
$$\frac{1^2 x}{1+x}-\frac{2^2 x^3}{1+x^2}+\frac{3^2 x^6}{1+x^3}-\frac{4^2 x^{10}}{1+x^4}+\&c$$
$$=\phi^2(-x)\left\{x\cdot\frac{1+x}{(1-x)^2}+x^6\cdot\frac{1+x^3}{(1-x^3)^2}+x^{10}\frac{1+x^5}{(1-x^5)^2}+\&c\right\}$$
$$\frac{1+x}{1-x}-3^2x^2\cdot\frac{1+x^3}{1-x^3}+5^2x^6\cdot\frac{1+x^5}{1-x^5}-\&c$$
$$=\psi^2(x)\left\{1-\frac{8x^2}{(1+x)^2}+\frac{8x^6}{(1+x^2)^2}-\frac{8x^{12}}{(1+x^3)^2}+\&c\right\}$$
$$x\psi(x)\psi(x^4)=\frac{x}{1-x}-\frac{x^3}{1-x^3}+\frac{x^6}{1-x^5}-\frac{x^{10}}{1-x^7}+\&c$$

For 2.91563611528…. = y = ϕ; 0.0395671… = z = ψ and x = 2, we obtain:

2.91563611528^2(-2)*((((2*(1+2)/(1-2)^2+2^6*(1+2^3)/(1-2^3)^2+2^10*(1+2^5)/(1-2^5)^2))))*(1+2)/(1-2)-3^2*2^2*(1+2^3)/(1-2^3)+5^2*2^6*(1+2^5)/(1-2^5)

Input interpretation:

$$2.91563611528^2\times(-2)\left(2\times\frac{1+2}{(1-2)^2}+2^6\times\frac{1+2^3}{(1-2^3)^2}+2^{10}\times\frac{1+2^5}{(1-2^5)^2}\right)\times\frac{1+2}{1-2}-3^2\times2^2\times\frac{1+2^3}{1-2^3}+5^2\times2^6\times\frac{1+2^5}{1-2^5}$$

Result:

1042.198599190821988838242872246172142113869481195183588523...

1042.19859919...

1/8(((2.91563611528^2(-2)*((((2*(1+2)/(1-2)^2+2^6*(1+2^3)/(1-2^3)^2+2^10*(1+2^5)/(1-2^5)^2))))*(1+2)/(1-2)-3^2*2^2*(1+2^3)/(1-2^3)+5^2*2^6*(1+2^5)/(1-2^5))))+11-golden ratio

Where 11 is a Lucas number

Input interpretation:

$$\frac{1}{8}\left(2.91563611528^2\times(-2)\left(2\times\frac{1+2}{(1-2)^2}+2^6\times\frac{1+2^3}{(1-2^3)^2}+2^{10}\times\frac{1+2^5}{(1-2^5)^2}\right)\times\frac{1+2}{1-2}-3^2\times2^2\times\frac{1+2^3}{1-2^3}+5^2\times2^6\times\frac{1+2^5}{1-2^5}\right)+11-\phi$$

ϕ is the golden ratio

Result:

139.65679091...

139.65679091… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternative representations:

$$\frac{1}{8}\left(\frac{2.915636115280000^2\,(1+2)\,(-2)\left(\frac{2\,(1+2)}{(1-2)^2}+\frac{2^6\,(1+2^3)}{(1-2^3)^2}+\frac{2^{10}\,(1+2^5)}{(1-2^5)^2}\right)}{1-2}-\frac{(1+2^3)\,3^2\times 2^2}{1-2^3}+\frac{5^2\times 2^6\,(1+2^5)}{1-2^5}\right)+11-\phi=$$

$$11+\frac{1}{8}\left(\frac{-324}{-7}+\frac{(1+2^5)\,2^6\times 5^2}{1-2^5}+6\times 2.915636115280000^2\left(6\times\frac{1}{1}+\frac{9\times 2^6}{(-7)^2}+\frac{(1+2^5)\,2^{10}}{(1-2^5)^2}\right)\right)-2\sin(54\,^\circ)$$

$$\frac{1}{8}\left(\frac{2.915636115280000^2\,(1+2)\,(-2)\left(\frac{2\,(1+2)}{(1-2)^2}+\frac{2^6\,(1+2^3)}{(1-2^3)^2}+\frac{2^{10}\,(1+2^5)}{(1-2^5)^2}\right)}{1-2}-\frac{(1+2^3)\,3^2\times 2^2}{1-2^3}+\frac{5^2\times 2^6\,(1+2^5)}{1-2^5}\right)+11-\phi=$$

$$11+2\cos(216\,^\circ)+\frac{1}{8}\left(\frac{-324}{-7}+\frac{(1+2^5)\,2^6\times 5^2}{1-2^5}+6\times 2.915636115280000^2\left(6\times\frac{1}{1}+\frac{9\times 2^6}{(-7)^2}+\frac{(1+2^5)\,2^{10}}{(1-2^5)^2}\right)\right)$$

$$\frac{1}{8}\left(\frac{2.915636115280000^2\,(1+2)\,(-2)\left(\frac{2\,(1+2)}{(1-2)^2}+\frac{2^6\,(1+2^3)}{(1-2^3)^2}+\frac{2^{10}\,(1+2^5)}{(1-2^5)^2}\right)}{1-2}-\frac{(1+2^3)\,3^2\times 2^2}{1-2^3}+\frac{5^2\times 2^6\,(1+2^5)}{1-2^5}\right)+11-\phi=$$

$$11+\frac{1}{8}\left(\frac{-324}{-7}+\frac{(1+2^5)\,2^6\times 5^2}{1-2^5}+6\times 2.915636115280000^2\left(6\times\frac{1}{1}+\frac{9\times 2^6}{(-7)^2}+\frac{(1+2^5)\,2^{10}}{(1-2^5)^2}\right)\right)+2\sin(666\,^\circ)$$

10^-52(((1/10^3(((2.91563611528^2(-2)*((((2*(1+2)/(1-2)^2+2^6*(1+2^3)/(1-2^3)^2+2^10*(1+2^5)/(1-2^5)^2))))*(1+2)/(1-2)-3^2*2^2*(1+2^3)/(1-2^3)+5^2*2^6*(1+2^5)/(1-2^5))))+1/golden ratio*1/10+16/10^4)))

Input interpretation:

$$\frac{1}{10^{52}}\left(\frac{1}{10^3}\left(2.91563611528^2\times(-2)\left(2\times\frac{1+2}{(1-2)^2}+2^6\times\frac{1+2^3}{(1-2^3)^2}+2^{10}\times\frac{1+2^5}{(1-2^5)^2}\right)\times\frac{1+2}{1-2}-3^2\times2^2\times\frac{1+2^3}{1-2^3}+5^2\times2^6\times\frac{1+2^5}{1-2^5}\right)+\frac{1}{\phi}\times\frac{1}{10}+\frac{16}{10^4}\right)$$

ϕ is the golden ratio

Result:

$1.1056019981\ldots\times10^{-52}$

1.1056019981…*10^{-52} result practically equal to the value of Cosmological Constant 1.1056*10^{-52} m^{-2}

Alternative representations:

$$\frac{1}{10^{52}}\left(\frac{\frac{2.915636115280000^2(1+2)(-2)\left(\frac{2(1+2)}{(1-2)^2}+\frac{2^6(1+2^3)}{(1-2^3)^2}+\frac{2^{10}(1+2^5)}{(1-2^5)^2}\right)}{1-2}-\frac{(1+2^3)3^2\times2^2}{1-2^3}+\frac{5^2\times2^6(1+2^5)}{1-2^5}}{10^3}+\frac{1}{10\phi}+\frac{16}{10^4}\right)=$$

$$\frac{\frac{16}{10^4}+\frac{\frac{-324}{-7}+\frac{(1+2^5)2^6\times5^2}{1-2^5}+6\times2.915636115280000^2\left(6\times\frac{1}{1}+\frac{9\times2^6}{(-7)^2}+\frac{(1+2^5)2^{10}}{(1-2^5)^2}\right)}{10^3}+\frac{1}{10(2\sin(54^\circ))}}{10^{52}}$$

$$\frac{1}{10^{52}}\left(\frac{\frac{2.915636115280000^2 (1+2)(-2)\left(\frac{2(1+2)}{(1-2)^2}+\frac{2^6(1+2^3)}{(1-2^3)^2}+\frac{2^{10}(1+2^5)}{(1-2^5)^2}\right)}{1-2}-\frac{(1+2^3)3^2\times 2^2}{1-2^3}+\frac{5^2\times 2^6(1+2^5)}{1-2^5}}{10^3}+\frac{1}{10\,\phi}+\frac{16}{10^4}\right)=$$

$$\frac{\frac{1}{10(-2\cos(216°))}+\frac{16}{10^4}+\frac{\frac{-324}{-7}+\frac{(1+2^5)2^6\times 5^2}{1-2^5}+6\times 2.915636115280000^2\left(6\times\frac{1}{1}+\frac{9\times 2^6}{(-7)^2}+\frac{(1+2^5)2^{10}}{(1-2^5)^2}\right)}{10^3}}{10^{52}}$$

$$\frac{1}{10^{52}}\left(\frac{\frac{2.915636115280000^2 (1+2)(-2)\left(\frac{2(1+2)}{(1-2)^2}+\frac{2^6(1+2^3)}{(1-2^3)^2}+\frac{2^{10}(1+2^5)}{(1-2^5)^2}\right)}{1-2}-\frac{(1+2^3)3^2\times 2^2}{1-2^3}+\frac{5^2\times 2^6(1+2^5)}{1-2^5}}{10^3}+\frac{1}{10\,\phi}+\frac{16}{10^4}\right)=$$

$$\frac{\frac{16}{10^4}+\frac{\frac{-324}{-7}+\frac{(1+2^5)2^6\times 5^2}{1-2^5}+6\times 2.915636115280000^2\left(6\times\frac{1}{1}+\frac{9\times 2^6}{(-7)^2}+\frac{(1+2^5)2^{10}}{(1-2^5)^2}\right)}{10^3}+\frac{1}{10(-2\sin(666°))}}{10^{52}}$$

27^2+(((2.91563611528^2(-2)*((((2*(1+2)/(1-2)^2+2^6*(1+2^3)/(1-2^3)^2+2^10*(1+2^5)/(1-2^5)^2))))*(1+2)/(1-2)-3^2*2^2*(1+2^3)/(1-2^3)+5^2*2^6*(1+2^5)/(1-2^5))))-47+4

Where 47 and 4 are Lucas number

Input interpretation:

$$27^2+\left(2.91563611528^2\times(-2)\left(2\times\frac{1+2}{(1-2)^2}+2^6\times\frac{1+2^3}{(1-2^3)^2}+2^{10}\times\frac{1+2^5}{(1-2^5)^2}\right)\times\frac{1+2}{1-2}-3^2\times 2^2\times\frac{1+2^3}{1-2^3}+5^2\times 2^6\times\frac{1+2^5}{1-2^5}\right)-47+4$$

Result:

1728.198599190821988838242872246172142113869481195183588523...

1728.19859919...

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

27^2+(((2.91563611528^2(-2)*((((2*(1+2)/(1-2)^2+2^6*(1+2^3)/(1-2^3)^2+2^10*(1+2^5)/(1-2^5)^2))))*(1+2)/(1-2)-3^2*2^2*(1+2^3)/(1-2^3)+5^2*2^6*(1+2^5)/(1-2^5))))+11

Where 11 is a Lucas number

Input interpretation:

$$27^2+\left(2.91563611528^2\times(-2)\left(2\times\frac{1+2}{(1-2)^2}+2^6\times\frac{1+2^3}{(1-2^3)^2}+2^{10}\times\frac{1+2^5}{(1-2^5)^2}\right)\times\frac{1+2}{1-2}-3^2\times2^2\times\frac{1+2^3}{1-2^3}+5^2\times2^6\times\frac{1+2^5}{1-2^5}\right)+11$$

Result:

1782.198599190821988838242872246172142113869481195183588523...

1782.19859919... result in the range of the hypothetical mass of Gluino (gluino = 1785.16 GeV).

We have that:

2/(1-2)-(2^3)/(1-2^3)+(2^6)/(1-2^5)-(2^10)/(1-2^7)

Input:

$$\frac{2}{1-2}-\frac{2^3}{1-2^3}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}$$

Exact result:

$$\frac{141690}{27559}$$

Decimal approximation:

5.1413331398091367611306651184730940890453209477847527123 62...

5.1413331398...

27(((2/(1-2)-(2^3)/(1-2^3)+(2^6)/(1-2^5)-(2^10)/(1-2^7))))+1/golden ratio

Input:

$$27\left(\frac{2}{1-2}-\frac{2^3}{1-2^3}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+\frac{1}{\phi}$$

ϕ is the golden ratio

Result:

$$\frac{1}{\phi}+\frac{3825630}{27559}$$

Decimal approximation:

139.43402876359658739873254503313917852194397476999408609 59...

139.43402876 result practically equal to the rest mass of Pion meson 139.57 MeV

Alternate forms:

$$\frac{7623701+27559\sqrt{5}}{55118}$$

$$\frac{3825630\,\phi+27559}{27559\,\phi}$$

$$\frac{\sqrt{5}}{2}+\frac{7623701}{55118}$$

Alternative representations:

$$27\left(\frac{2}{1-2}-\frac{2^3}{1-2^3}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+\frac{1}{\phi}=27\left(-2--\frac{8}{7}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+\frac{1}{2\sin(54^\circ)}$$

$$27\left(\frac{2}{1-2}-\frac{2^3}{1-2^3}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+\frac{1}{\phi}=-\frac{1}{2\cos(216^\circ)}+27\left(-2--\frac{8}{7}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)$$

$$27\left(\frac{2}{1-2}-\frac{2^3}{1-2^3}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+\frac{1}{\phi}=$$
$$27\left(-2--\frac{8}{7}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+-\frac{1}{2\sin(666°)}$$

And:

24(((2/(1-2)-(2^3)/(1-2^3)+(2^6)/(1-2^5)-(2^10)/(1-2^7))))+golden ratio

Input:

$$24\left(\frac{2}{1-2}-\frac{2^3}{1-2^3}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+\phi$$

ϕ is the golden ratio

Result:

$$\phi+\frac{3400560}{27559}$$

Decimal approximation:

125.01002934416917711534054967771989625480801192663982795 88...

125.010029344… 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:

$$\frac{6828679+27559\sqrt{5}}{55118}$$

$$\frac{27559\phi+3400560}{27559}$$

$$\frac{6828679}{55118}+\frac{\sqrt{5}}{2}$$

Alternative representations:

$$24\left(\frac{2}{1-2}-\frac{2^3}{1-2^3}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+\phi=24\left(-2--\frac{8}{7}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+2\sin(54°)$$

$$24\left(\frac{2}{1-2}-\frac{2^3}{1-2^3}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+\phi =$$
$$-2\cos(216°)+24\left(-2--\frac{8}{7}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)$$

$$24\left(\frac{2}{1-2}-\frac{2^3}{1-2^3}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+\phi = 24\left(-2--\frac{8}{7}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)-2\sin(666°)$$

And:

1/10^52(((1/5(((2/(1-2)-(2^3)/(1-2^3)+(2^6)/(1-2^5)-(2^10)/(1-2^7))))+76/10^3+(11+3)/10^4)))

Where 76, 11 and 3 are Lucas numbers

Input:

$$\frac{1}{10^{52}}\left(\frac{1}{5}\left(\frac{2}{1-2}-\frac{2^3}{1-2^3}+\frac{2^6}{1-2^5}-\frac{2^{10}}{1-2^7}\right)+\frac{76}{10^3}+\frac{11+3}{10^4}\right)$$

Exact result:

$$\frac{152\,355\,333}{1\,377\,950\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

$1.1056666279618273522261330236946188178090641895569505... \times 10^{-52}$

$1.105666...*10^{-52}$ result practically equal to the value of Cosmological Constant $1.1056*10^{-52}$ m^{-2}

Alternate form:

$$\frac{152\,355\,333}{1\,377\,950\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

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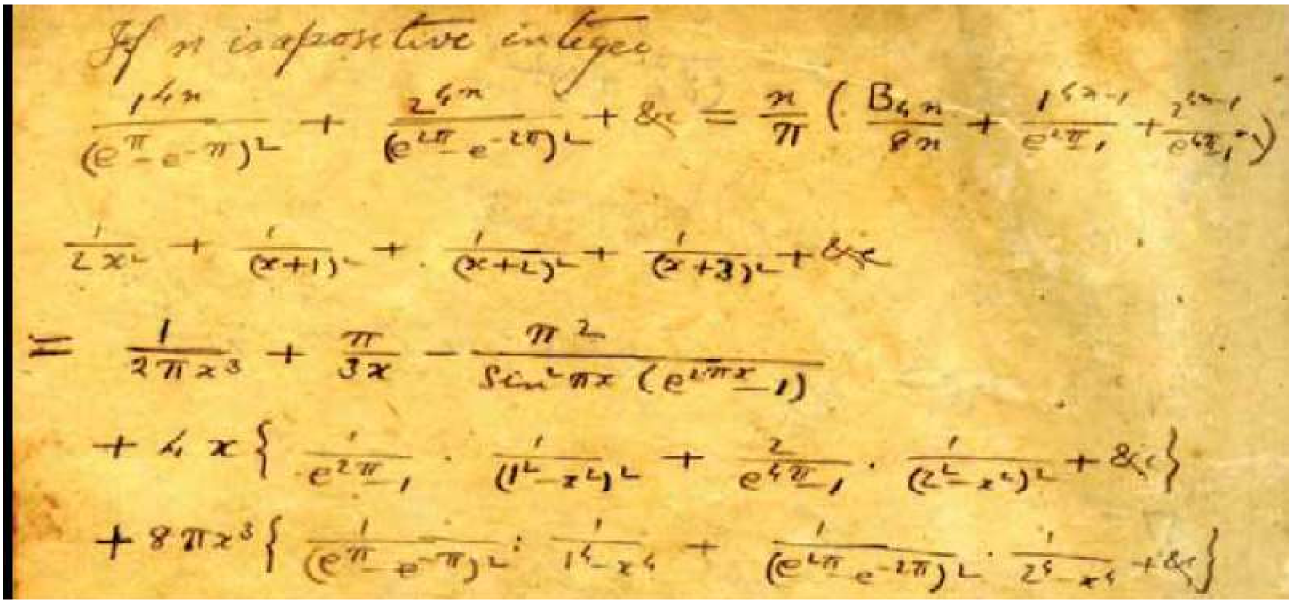
If n is a positive integer

$$\frac{1^{4n}}{(e^{\pi}-e^{-\pi})^2} + \frac{2^{4n}}{(e^{2\pi}-e^{-2\pi})^2} + \&c = \frac{n}{\pi}\left(\frac{B_{4n}}{8n} + \frac{1^{4n-1}}{e^{2\pi}-1} + \frac{2^{4n-1}}{e^{4\pi}-1} + \&c\right)$$

$$\frac{1}{2x^2} + \frac{1}{(x+1)^2} + \frac{1}{(x+2)^2} + \frac{1}{(x+3)^2} + \&c$$

$$= \frac{1}{2\pi x^3} + \frac{\pi}{3x} - \frac{\pi^2}{\sin^2 \pi x\,(e^{2\pi x}-1)}$$

$$+ 4x\left\{\frac{1}{e^{2\pi}-1}\cdot\frac{1}{(1^2-x^2)^2} + \frac{2}{e^{4\pi}-1}\cdot\frac{1}{(2^2-x^2)^2} + \&c\right\}$$

$$+ 8\pi x^3\left\{\frac{1}{(e^{\pi}-e^{-\pi})^2}\cdot\frac{1}{1^4-x^4} + \frac{1}{(e^{2\pi}-e^{-2\pi})^2}\cdot\frac{1}{2^4-x^4} + \&c\right\}$$

For x = 1/2, we obtain:

8Pi*0.5^3*[1/(((e^(Pi)-e^(-Pi)))^2)*-1*1/(0.5^4)+1/((((e^(2Pi)-e^(-2Pi)))^2))1/(16-0.5^4)]

Input:

$$8\pi\times 0.5^3\left(\frac{1}{(e^{\pi}-e^{-\pi})^2}\times(-1)\times\frac{1}{0.5^4} + \frac{1}{(e^{2\pi}-e^{-2\pi})^2}\times\frac{1}{16-0.5^4}\right)$$

Result:

-0.0942188...

-0.0942188… partial result

Alternative representations:

$$8\pi\, 0.5^3\left(-\frac{1}{0.5^4\,(e^{\pi}-e^{-\pi})^2} + \frac{1}{(16-0.5^4)(e^{2\pi}-e^{-2\pi})^2}\right) = 1440°\, 0.5^3\left(-\frac{1}{0.5^4\,(-e^{-180°}+e^{180°})^2} + \frac{1}{(16-0.5^4)(-e^{-360°}+e^{360°})^2}\right)$$

$$8\pi\, 0.5^3\left(-\frac{1}{0.5^4\,(e^{\pi}-e^{-\pi})^2} + \frac{1}{(16-0.5^4)(e^{2\pi}-e^{-2\pi})^2}\right) = 8\pi\, 0.5^3\left(-\frac{1}{0.5^4\,(\exp^{\pi}(z)-\exp^{-\pi}(z))^2} + \frac{1}{(16-0.5^4)(\exp^{2\pi}(z)-\exp^{-2\pi}(z))^2}\right) \text{ for } z = 1$$

$$8\pi\, 0.5^3 \left(-\frac{1}{0.5^4 (e^{\pi} - e^{-\pi})^2} + \frac{1}{(16 - 0.5^4)(e^{2\pi} - e^{-2\pi})^2}\right) = -8\, i \log(-1)\, 0.5^3 \left(-\frac{1}{0.5^4 (e^{-i\log(-1)} - e^{i\log(-1)})^2} + \frac{1}{(16 - 0.5^4)(e^{-2i\log(-1)} - e^{2i\log(-1)})^2}\right)$$

Integral representations:

$$8\pi\, 0.5^3 \left(-\frac{1}{0.5^4 (e^{\pi} - e^{-\pi})^2} + \frac{1}{(16 - 0.5^4)(e^{2\pi} - e^{-2\pi})^2}\right) = -\frac{1}{\left(-1 + e^{8\int_0^\infty \sin(t)/t\,dt}\right)^2} 32\, e^{4\int_0^\infty \sin(t)/t\,dt} \left(\int_0^\infty \frac{\sin(t)}{t}\,dt + 1.99608\, e^{4\int_0^\infty \sin(t)/t\,dt} \int_0^\infty \frac{\sin(t)}{t}\,dt + e^{8\int_0^\infty \sin(t)/t\,dt} \int_0^\infty \frac{\sin(t)}{t}\,dt\right)$$

$$8\pi\, 0.5^3 \left(-\frac{1}{0.5^4 (e^{\pi} - e^{-\pi})^2} + \frac{1}{(16 - 0.5^4)(e^{2\pi} - e^{-2\pi})^2}\right) = -\left(\left(32\, e^{4\int_0^\infty 1/(1+t^2)\,dt} \left(\int_0^\infty \frac{1}{1+t^2}\,dt + 1.99608\, e^{4\int_0^\infty 1/(1+t^2)\,dt} \int_0^\infty \frac{1}{1+t^2}\,dt + e^{8\int_0^\infty 1/(1+t^2)\,dt} \int_0^\infty \frac{1}{1+t^2}\,dt\right)\right) \Big/ \left(-1 + e^{8\int_0^\infty 1/(1+t^2)\,dt}\right)^2\right)$$

$$8\pi\, 0.5^3 \left(-\frac{1}{0.5^4 (e^{\pi} - e^{-\pi})^2} + \frac{1}{(16 - 0.5^4)(e^{2\pi} - e^{-2\pi})^2}\right) = -\left(\left(32\, e^{4\int_0^\infty \sin^2(t)/t^2\,dt} \left(\int_0^\infty \frac{\sin^2(t)}{t^2}\,dt + 1.99608\, e^{4\int_0^\infty \sin^2(t)/t^2\,dt} \int_0^\infty \frac{\sin^2(t)}{t^2}\,dt + e^{8\int_0^\infty \sin^2(t)/t^2\,dt} \int_0^\infty \frac{\sin^2(t)}{t^2}\,dt\right)\right) \Big/ \left(-1 + e^{8\int_0^\infty \sin^2(t)/t^2\,dt}\right)^2\right)$$

1/(2Pi*0.5^3)+Pi/(3*0.5)-(Pi^2)/(sin^2(0.5*Pi)*(e^(2*0.5*Pi)-1))+2((((1/(e^(2Pi)-1))*1/(1-0.5^2)^2+2/((e^(4Pi)-1))*1/(4-0.5^2)^2)))-0.0942188

Input interpretation:

$$\frac{1}{2\pi \times 0.5^3} + \frac{\pi}{3 \times 0.5} - \frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times 0.5\pi} - 1\right)} + 2\left(\frac{1}{e^{2\pi} - 1} \times \frac{1}{(1 - 0.5^2)^2} + \frac{2}{e^{4\pi} - 1} \times \frac{1}{(4 - 0.5^2)^2}\right) - 0.0942188$$

Result:

2.83430…

2.83430… final result

Alternative representations:

$$\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\,\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188=-0.0942188+\frac{\pi}{1.5}+\frac{1}{2\pi\,0.5^3}-\frac{\pi^2}{(-1+e^{\pi})\cos^2(0)}+2\left(\frac{1}{(-1+e^{2\pi})(1-0.5^2)^2}+\frac{2}{(-1+e^{4\pi})(4-0.5^2)^2}\right)$$

$$\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\,\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188=-0.0942188+\frac{\pi}{1.5}+\frac{1}{2\pi\,0.5^3}-\frac{\pi^2}{(-1+e^{\pi})\cosh^2(0)}+2\left(\frac{1}{(-1+e^{2\pi})(1-0.5^2)^2}+\frac{2}{(-1+e^{4\pi})(4-0.5^2)^2}\right)$$

$$\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\,\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188=-0.0942188+\frac{\pi}{1.5}+\frac{1}{2\pi\,0.5^3}+2\left(\frac{1}{(-1+e^{2\pi})(1-0.5^2)^2}+\frac{2}{(-1+e^{4\pi})(4-0.5^2)^2}\right)-\frac{\pi^2}{(-1+e^{\pi})\left(\frac{1}{\sec(0)}\right)^2}$$

Multiple-argument formulas:

$$\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\,\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188=-0.0942188+\frac{3.55556}{-1+e^{2\pi}}+\frac{0.284444}{-1+e^{4\pi}}+\frac{4}{\pi}+0.666667\,\pi-\frac{\pi^2}{(-1+e^{\pi})\left(3\sin(0.166667\,\pi)-4\sin^3(0.166667\,\pi)\right)^2}$$

$$\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{\left(1-0.5^2\right)^2\left(e^{2\pi}-1\right)}+\frac{2}{\left(4-0.5^2\right)^2\left(e^{4\pi}-1\right)}\right)-0.0942188=-0.0942188+\frac{3.55556}{-1+e^{2\pi}}+\frac{0.284444}{-1+e^{4\pi}}+\frac{4}{\pi}+0.666667\,\pi-\frac{\pi^2}{4\left(-1+e^{\pi}\right)\cos^2(0.25\,\pi)\sin^2(0.25\,\pi)}$$

$$\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{\left(1-0.5^2\right)^2\left(e^{2\pi}-1\right)}+\frac{2}{\left(4-0.5^2\right)^2\left(e^{4\pi}-1\right)}\right)-0.0942188=-0.0942188+\frac{3.55556}{-1+e^{2\pi}}+\frac{0.284444}{-1+e^{4\pi}}+\frac{4}{\pi}+0.666667\,\pi-\frac{\pi^2}{\left(-1+e^{\pi}\right)U_{-0.5}(\cos(\pi))^2\sin^2(\pi)}$$

47(((1/(2Pi*0.5^3)+Pi/(3*0.5)-(Pi^2)/(sin^2(0.5*Pi)*(e^(2*0.5*Pi)-1))+2((((1/(e^(2Pi)-1))*1/(1-0.5^2)^2+2/((e^(4Pi)-1))*1/(4-0.5^2)^2)))-0.0942188)))+e+(5+sqrt5)/2

where 47 is a Lucas number

Input interpretation:

$$47\left(\frac{1}{2\pi\times 0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{e^{2\pi}-1}\times\frac{1}{\left(1-0.5^2\right)^2}+\frac{2}{e^{4\pi}-1}\times\frac{1}{\left(4-0.5^2\right)^2}\right)-0.0942188\right)+e+\frac{1}{2}\left(5+\sqrt{5}\right)$$

Result:

139.548...

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

Alternative representations:

$$47\left(\frac{1}{2\pi 0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188\right)+e+\frac{1}{2}\left(5+\sqrt{5}\right)=e+47\left(-0.0942188+\frac{\pi}{1.5}+\frac{1}{2\pi 0.5^3}-\frac{\pi^2}{(-1+e^\pi)\cos^2(0)}+2\left(\frac{1}{(-1+e^{2\pi})(1-0.5^2)^2}+\frac{2}{(-1+e^{4\pi})(4-0.5^2)^2}\right)\right)+\frac{1}{2}\left(5+\sqrt{5}\right)$$

$$47\left(\frac{1}{2\pi 0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188\right)+e+\frac{1}{2}\left(5+\sqrt{5}\right)=e+47\left(-0.0942188+\frac{\pi}{1.5}+\frac{1}{2\pi 0.5^3}-\frac{\pi^2}{(-1+e^\pi)\cosh^2(0)}+2\left(\frac{1}{(-1+e^{2\pi})(1-0.5^2)^2}+\frac{2}{(-1+e^{4\pi})(4-0.5^2)^2}\right)\right)+\frac{1}{2}\left(5+\sqrt{5}\right)$$

$$47\left(\frac{1}{2\pi 0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188\right)+e+\frac{1}{2}\left(5+\sqrt{5}\right)=e+47\left(-0.0942188+\frac{\pi}{1.5}+\frac{1}{2\pi 0.5^3}+2\left(\frac{1}{(-1+e^{2\pi})(1-0.5^2)^2}+\frac{2}{(-1+e^{4\pi})(4-0.5^2)^2}\right)-\frac{\pi^2}{(-1+e^\pi)\left(\frac{1}{\sec(0)}\right)^2}\right)+\frac{1}{2}\left(5+\sqrt{5}\right)$$

Series representations:

$$47\left(\frac{1}{2\pi 0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188\right)+e+\frac{1}{2}\left(5+\sqrt{5}\right)=-1.92828+e+\frac{167.111}{-1+e^{2\pi}}+\frac{13.3689}{-1+e^{4\pi}}+\frac{188}{\pi}+31.3333\pi-\frac{47\pi^2}{4(-1+e^\pi)\left(\sum_{k=0}^{\infty}(-1)^k J_{1+2k}(0.5\pi)\right)^2}+\frac{1}{2}\sqrt{4}\sum_{k=0}^{\infty}4^{-k}\binom{\frac{1}{2}}{k}$$

$$47\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188\right)+e+\frac{1}{2}\left(5+\sqrt{5}\right)=-1.92828+e+\frac{167.111}{-1+e^{2\pi}}+\frac{13.3689}{-1+e^{4\pi}}+\frac{188}{\pi}+31.3333\,\pi-\frac{47\,\pi^2}{4\left(-1+e^{\pi}\right)\left(\sum_{k=0}^{\infty}(-1)^k J_{1+2k}(0.5\,\pi)\right)^2}+\frac{1}{2}\sqrt{4}\sum_{k=0}^{\infty}\frac{\left(-\frac{1}{4}\right)^k\left(-\frac{1}{2}\right)_k}{k!}$$

$$47\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188\right)+e+\frac{1}{2}\left(5+\sqrt{5}\right)=-1.92828+e+\frac{167.111}{-1+e^{2\pi}}+\frac{13.3689}{-1+e^{4\pi}}+\frac{188}{\pi}+31.3333\,\pi-\frac{47\,\pi^2}{4\left(-1+e^{\pi}\right)\left(\sum_{k=0}^{\infty}(-1)^k J_{1+2k}(0.5\,\pi)\right)^2}+\frac{1}{2}\exp\left(i\,\pi\left\lfloor\frac{\arg(5-x)}{2\pi}\right\rfloor\right)\sqrt{x}\sum_{k=0}^{\infty}\frac{(-1)^k(5-x)^k x^{-k}\left(-\frac{1}{2}\right)_k}{k!}\quad \text{for } (x\in\mathbb{R} \text{ and } x<0)$$

Multiple-argument formulas:

$$47\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188\right)+e+\frac{1}{2}\left(5+\sqrt{5}\right)=-1.92828+e+\frac{167.111}{-1+e^{2\pi}}+\frac{13.3689}{-1+e^{4\pi}}+\frac{188}{\pi}+31.3333\,\pi-\frac{47\,\pi^2}{\left(-1+e^{\pi}\right)\left(3\sin(0.166667\,\pi)-4\sin^3(0.166667\,\pi)\right)^2}+\frac{\sqrt{5}}{2}$$

$$47\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188\right)+e+\frac{1}{2}\left(5+\sqrt{5}\right)=-1.92828+e+\frac{167.111}{-1+e^{2\pi}}+\frac{13.3689}{-1+e^{4\pi}}+\frac{188}{\pi}+31.3333\,\pi-\frac{47\,\pi^2}{4\left(-1+e^{\pi}\right)\cos^2(0.25\,\pi)\sin^2(0.25\,\pi)}+\frac{\sqrt{5}}{2}$$

$$47\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times0.5\pi}-1\right)}+2\left(\frac{1}{(1-0.5^2)^2\left(e^{2\pi}-1\right)}+\frac{2}{(4-0.5^2)^2\left(e^{4\pi}-1\right)}\right)-0.0942188\right)+e+\frac{1}{2}\left(5+\sqrt{5}\right)=e+47\left(-0.0942188+2\left(\frac{1.77778}{-1+e^{2\pi}}+\frac{0.142222}{-1+e^{4\pi}}\right)+\frac{4}{\pi}+0.666667\pi-\frac{\pi^2}{(-1+e^{\pi})\left(3\sin(0.166667\pi)-4\sin^3(0.166667\pi)\right)^2}\right)+\frac{1}{2}\left(5+\sqrt{5}\right)$$

We have also:

1/10^52[(((1/(2Pi*0.5^3)+Pi/(3*0.5)-(Pi^2)/(sin^2(0.5*Pi)*(e^(2*0.5*Pi)-1))+2((((1/(e^(2Pi)-1))*1/(1-0.5^2)^2+2/((e^(4Pi)-1))*1/(4-0.5^2)^2)))-0.0942188)))-sqrt3+34/10^4]

Input interpretation:

$$\frac{1}{10^{52}}\left(\left(\frac{1}{2\pi\times0.5^3}+\frac{\pi}{3\times0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times0.5\pi}-1\right)}+2\left(\frac{1}{e^{2\pi}-1}\times\frac{1}{(1-0.5^2)^2}+\frac{2}{e^{4\pi}-1}\times\frac{1}{(4-0.5^2)^2}\right)-0.0942188\right)-\sqrt{3}+\frac{34}{10^4}\right)$$

Result:

$1.10565\ldots\times10^{-52}$

$1.10565\ldots*10^{-52}$ result practically equal to the value of Cosmological Constant $1.1056*10^{-52}$ m^{-2}

Alternative representations:

$$\frac{1}{10^{52}}\left(\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times0.5\pi}-1\right)}+2\left(\frac{1}{\left(e^{2\pi}-1\right)(1-0.5^2)^2}+\frac{2}{\left(e^{4\pi}-1\right)(4-0.5^2)^2}\right)-0.0942188\right)-\sqrt{3}+\frac{34}{10^4}\right)=\frac{1}{10^{52}}\left(-0.0942188+\frac{\pi}{1.5}+\frac{1}{2\pi\,0.5^3}+\frac{34}{10^4}-\frac{\pi^2}{(-1+e^{\pi})\cos^2(0)}+2\left(\frac{1}{(-1+e^{2\pi})(1-0.5^2)^2}+\frac{2}{(-1+e^{4\pi})(4-0.5^2)^2}\right)-\sqrt{3}\right)$$

$$\frac{1}{10^{52}}\left(\left(\frac{1}{2\pi\, 0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{\left(e^{2\pi}-1\right)\left(1-0.5^2\right)^2}+\frac{2}{\left(e^{4\pi}-1\right)\left(4-0.5^2\right)^2}\right)-0.0942188\right)-\sqrt{3}+\frac{34}{10^4}\right)=$$

$$\frac{1}{10^{52}}\left(-0.0942188+\frac{\pi}{1.5}+\frac{1}{2\pi\, 0.5^3}+\frac{34}{10^4}-\frac{\pi^2}{\left(-1+e^{\pi}\right)\cosh^2(0)}+2\left(\frac{1}{\left(-1+e^{2\pi}\right)\left(1-0.5^2\right)^2}+\frac{2}{\left(-1+e^{4\pi}\right)\left(4-0.5^2\right)^2}\right)-\sqrt{3}\right)$$

$$\frac{1}{10^{52}}\left(\left(\frac{1}{2\pi\, 0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{\left(e^{2\pi}-1\right)\left(1-0.5^2\right)^2}+\frac{2}{\left(e^{4\pi}-1\right)\left(4-0.5^2\right)^2}\right)-0.0942188\right)-\sqrt{3}+\frac{34}{10^4}\right)=$$

$$\frac{1}{10^{52}}\left(-0.0942188+\frac{\pi}{1.5}+\frac{1}{2\pi\, 0.5^3}+\frac{34}{10^4}+2\left(\frac{1}{\left(-1+e^{2\pi}\right)\left(1-0.5^2\right)^2}+\frac{2}{\left(-1+e^{4\pi}\right)\left(4-0.5^2\right)^2}\right)-\frac{\pi^2}{\left(-1+e^{\pi}\right)\left(\frac{1}{\sec(0)}\right)^2}-\sqrt{3}\right)$$

Series representations:

$$\frac{1}{10^{52}}\left(\left(\frac{1}{2\pi\, 0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\,\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{\left(e^{2\pi}-1\right)\left(1-0.5^2\right)^2}+\frac{2}{\left(e^{4\pi}-1\right)\left(4-0.5^2\right)^2}\right)-0.0942188\right)-\sqrt{3}+\frac{34}{10^4}\right)=$$

$$-9.08188\times 10^{-54}+\frac{3.55556\times 10^{-52}}{-1+e^{2\pi}}+\frac{2.84444\times 10^{-53}}{-1+e^{4\pi}}+\frac{4\times 10^{-52}}{\pi}+6.66667\times 10^{-53}\,\pi-\pi^2\Big/\left(40\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi}\right)\left(\sum_{k=0}^{\infty}(-1)^k J_{1+2k}(0.5\,\pi)\right)^2\right)-\frac{\sqrt{2}\,\sum_{k=0}^{\infty} 2^{-k}\binom{\frac{1}{2}}{k}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{1}{10^{52}}\left(\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{\left(e^{2\pi}-1\right)\left(1-0.5^2\right)^2}+\frac{2}{\left(e^{4\pi}-1\right)\left(4-0.5^2\right)^2}\right)-0.0942188\right)-\sqrt{3}+\frac{34}{10^4}\right)=$$

$$-9.08188\times 10^{-54}+\frac{3.55556\times 10^{-52}}{-1+e^{2\pi}}+\frac{2.84444\times 10^{-53}}{-1+e^{4\pi}}+\frac{4\times 10^{-52}}{\pi}+6.66667\times 10^{-53}\pi-\pi^2\Bigg/\left(40\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi}\right)\left(\sum_{k=0}^{\infty}(-1)^k J_{1+2k}(0.5\pi)\right)^2\right)-\frac{\sqrt{2}\sum_{k=0}^{\infty}\frac{\left(-\frac{1}{2}\right)^k\left(-\frac{1}{2}\right)_k}{k!}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{1}{10^{52}}\left(\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{\left(e^{2\pi}-1\right)\left(1-0.5^2\right)^2}+\frac{2}{\left(e^{4\pi}-1\right)\left(4-0.5^2\right)^2}\right)-0.0942188\right)-\sqrt{3}+\frac{34}{10^4}\right)=-9.08188\times 10^{-54}+\frac{3.55556\times 10^{-52}}{-1+e^{2\pi}}+$$

$$\frac{2.84444\times 10^{-53}}{-1+e^{4\pi}}+\frac{4\times 10^{-52}}{\pi}+6.66667\times 10^{-53}\pi-\pi^2\Bigg/\left(10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi}\right)\left(\sum_{k=0}^{\infty}\frac{(-1)^k\,0.5^{1+2k}\,\pi^{1+2k}}{(1+2k)!}\right)^2\right)-\frac{\exp\left(i\pi\left\lfloor\frac{\arg(3-x)}{2\pi}\right\rfloor\right)\sqrt{x}\sum_{k=0}^{\infty}\frac{(-1)^k(3-x)^k x^{-k}\left(-\frac{1}{2}\right)_k}{k!}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

for ($x \in \mathbb{R}$ and $x < 0$)

Multiple-argument formulas:

$$\frac{1}{10^{52}}\left(\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{\left(e^{2\pi}-1\right)\left(1-0.5^2\right)^2}+\frac{2}{\left(e^{4\pi}-1\right)\left(4-0.5^2\right)^2}\right)-0.0942188\right)-\sqrt{3}+\frac{34}{10^4}\right)=$$

$$\left(-0.0908188+\frac{3.55556}{-1+e^{2\pi}}+\frac{0.284444}{-1+e^{4\pi}}+\frac{4}{\pi}+0.666667\pi-\frac{\pi^2}{\left(-1+e^{\pi}\right)\left(3\sin(0.166667\pi)-4\sin^3(0.166667\pi)\right)^2}-\sqrt{3}\right)\Bigg/10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000$$

$$\frac{1}{10^{52}}\left(\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{\left(e^{2\pi}-1\right)\left(1-0.5^2\right)^2}+\frac{2}{\left(e^{4\pi}-1\right)\left(4-0.5^2\right)^2}\right)-0.0942188\right)-\sqrt{3}+\frac{34}{10^4}\right)=$$

$$\left(-0.0908188+2\left(\frac{1.77778}{-1+e^{2\pi}}+\frac{0.142222}{-1+e^{4\pi}}\right)+\frac{4}{\pi}+0.666667\pi-\frac{\pi^2}{\left(-1+e^{\pi}\right)\left(3\sin(0.166667\pi)-4\sin^3(0.166667\pi)\right)^2}-\sqrt{3}\right)\Big/ 10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000$$

$$\frac{1}{10^{52}}\left(\left(\frac{1}{2\pi\,0.5^3}+\frac{\pi}{3\times 0.5}-\frac{\pi^2}{\sin^2(0.5\pi)\left(e^{2\times 0.5\pi}-1\right)}+2\left(\frac{1}{\left(e^{2\pi}-1\right)\left(1-0.5^2\right)^2}+\frac{2}{\left(e^{4\pi}-1\right)\left(4-0.5^2\right)^2}\right)-0.0942188\right)-\sqrt{3}+\frac{34}{10^4}\right)=$$

$$\frac{-0.0908188+\frac{3.55556}{-1+e^{2\pi}}+\frac{0.284444}{-1+e^{4\pi}}+\frac{4}{\pi}+0.666667\pi-\frac{\pi^2}{4\left(-1+e^{\pi}\right)\cos^2(0.25\pi)\sin^2(0.25\pi)}-\sqrt{3}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

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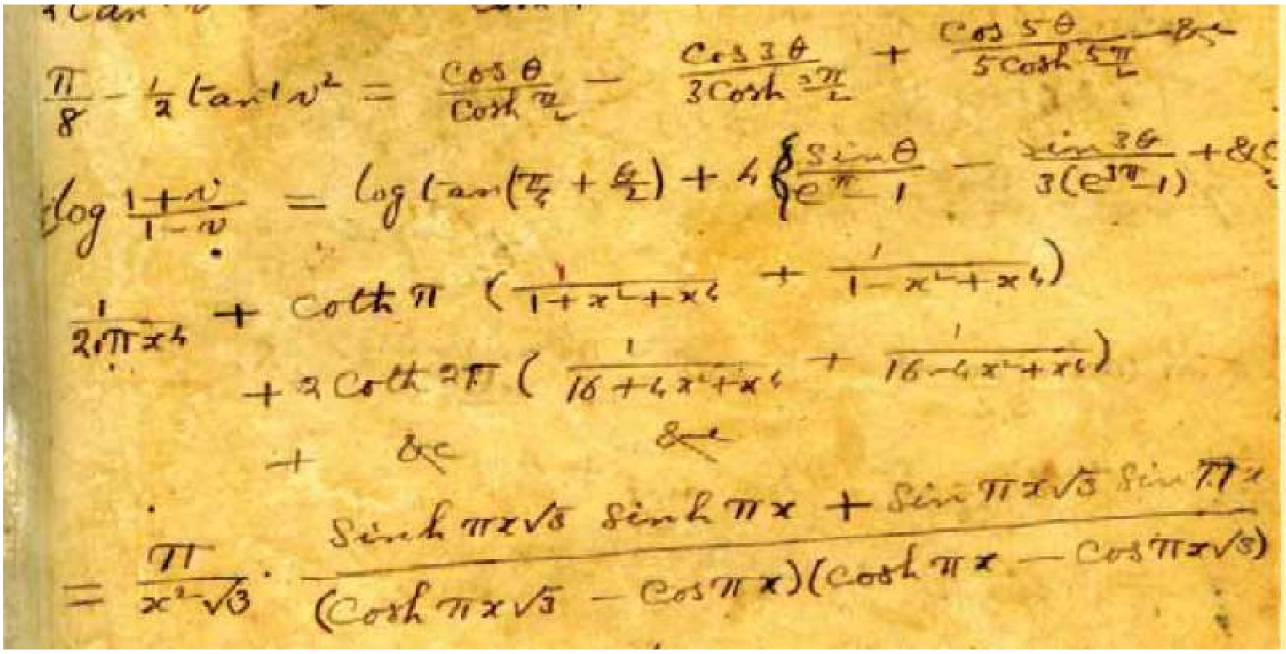


$$\frac{\pi}{8}-\frac{1}{2}\tan^{-1}v^2=\frac{\cos\theta}{\cosh\frac{\pi}{2}}-\frac{\cos 3\theta}{3\cosh\frac{3\pi}{2}}+\frac{\cos 5\theta}{5\cosh\frac{5\pi}{2}}-\&c$$

$$\frac{1}{2}\log\frac{1+v}{1-v}=\log\tan\left(\frac{\pi}{4}+\frac{\theta}{2}\right)+4\left\{\frac{\sin\theta}{e^{\pi}+1}-\frac{\sin 3\theta}{3(e^{3\pi}+1)}+\&c\right.$$

$$\frac{1}{2\pi x^4}+\coth\pi\left(\frac{1}{1+x^2+x^4}+\frac{1}{1-x^2+x^4}\right)+2\coth 2\pi\left(\frac{1}{16+4x^2+x^4}+\frac{1}{16-4x^2+x^4}\right)+\&c\ \&c$$

$$=\frac{\pi}{x^2\sqrt{3}}\cdot\frac{\sinh\pi x\sqrt{3}\,\sinh\pi x+\sin\pi x\sqrt{3}\,\sin\pi x}{\left(\cosh\pi x\sqrt{3}-\cos\pi x\right)\left(\cosh\pi x-\cos\pi x\sqrt{3}\right)}$$

For θ = π, and x = 2 we obtain:

Pi/8-1/2*tan^-1*x^2 = (cos(Pi))/(cosh(Pi/2))-(cos(3Pi))/(3cosh((3Pi)/2))+(cos(5Pi))/(5cosh((5Pi)/2))

Where

(cos(Pi))/(cosh(Pi/2))-(cos(3Pi))/(3cosh((3Pi)/2))+ (cos(5Pi))/(5cosh((5Pi)/2))

Input:

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)} - \frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)} + \frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}$$

$\cosh(x)$ is the hyperbolic cosine function

Exact result:

$$-\operatorname{sech}\left(\frac{\pi}{2}\right) + \frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right) - \frac{1}{5}\operatorname{sech}\left(\frac{5\pi}{2}\right)$$

$\operatorname{sech}(x)$ is the hyperbolic secant function

Decimal approximation:

−0.39270371917497223187894692013318053770132991527772714109...

-0.39270371917 result very near to $-\frac{\pi}{8} = -0.392699081$ ...

Property:

$-\operatorname{sech}\left(\frac{\pi}{2}\right) + \frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right) - \frac{1}{5}\operatorname{sech}\left(\frac{5\pi}{2}\right)$ is a transcendental number

Alternate forms:

$$\frac{1}{15}\left(-15\operatorname{sech}\left(\frac{\pi}{2}\right) + 5\operatorname{sech}\left(\frac{3\pi}{2}\right) - 3\operatorname{sech}\left(\frac{5\pi}{2}\right)\right)$$

$$-\frac{2\cosh\left(\frac{\pi}{2}\right)}{1+\cosh(\pi)} + \frac{2\cosh\left(\frac{3\pi}{2}\right)}{3(1+\cosh(3\pi))} - \frac{2\cosh\left(\frac{5\pi}{2}\right)}{5(1+\cosh(5\pi))}$$

$$-\frac{(-53 + 106\cosh(\pi) - 70\cosh(2\pi) + 30\cosh(3\pi))\operatorname{sech}\left(\frac{\pi}{2}\right)}{15(2\cosh(\pi)-1)(1-2\cosh(\pi)+2\cosh(2\pi))}$$

Alternative representations:

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)} - \frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)} + \frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)} = \frac{\cosh(-i\pi)}{\cos\left(\frac{i\pi}{2}\right)} - \frac{\cosh(-3i\pi)}{3\cos\left(\frac{3i\pi}{2}\right)} + \frac{\cosh(-5i\pi)}{5\cos\left(\frac{5i\pi}{2}\right)}$$

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)} - \frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)} + \frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)} = \frac{\cosh(i\pi)}{\cos\left(-\frac{i\pi}{2}\right)} - \frac{\cosh(3i\pi)}{3\cos\left(-\frac{3i\pi}{2}\right)} + \frac{\cosh(5i\pi)}{5\cos\left(-\frac{5i\pi}{2}\right)}$$

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)} - \frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)} + \frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)} = \frac{\cosh(-i\pi)}{\cos\left(-\frac{i\pi}{2}\right)} - \frac{\cosh(-3i\pi)}{3\cos\left(-\frac{3i\pi}{2}\right)} + \frac{\cosh(-5i\pi)}{5\cos\left(-\frac{5i\pi}{2}\right)}$$

Series representations:

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)} - \frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)} + \frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)} = \sum_{k=0}^{\infty} -\frac{2}{15} e^{(-5/2-(5-i)k)\pi} \left(3 - 5 e^{\pi+2k\pi} + 15 e^{2\pi+4k\pi}\right)$$

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)} - \frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)} + \frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)} = \sum_{k=0}^{\infty} -\frac{2(-1)^k (1+2k)\left(925+436k+488k^2+104k^3+52k^4\right)}{15\left(1+2k+2k^2\right)\left(5+2k+2k^2\right)\left(13+2k+2k^2\right)\pi}$$

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)} - \frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)} + \frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)} = \sum_{k=0}^{\infty} -\frac{i\, 2^{-k} \left(\text{Li}_{-k}(-i e^{z_0}) - \text{Li}_{-k}(i e^{z_0})\right)\left(15(\pi-2z_0)^k - 5(3\pi-2z_0)^k + 3(5\pi-2z_0)^k\right)}{15\, k!}$$

$$\text{for } \frac{1}{2} + \frac{i z_0}{\pi} \notin \mathbb{Z}$$

Integral representation:

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)} - \frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)} + \frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)} = \int_0^{\infty} -\frac{2\left(15 - 5t^{2i} + 3t^{4i}\right) t^i}{15\pi\left(1+t^2\right)}\, dt$$

Multiple-argument formulas:

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)} - \frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)} + \frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)} = -\frac{\text{sech}^2\left(\frac{\pi}{4}\right)}{2-\text{sech}^2\left(\frac{\pi}{4}\right)} + \frac{\text{sech}^2\left(\frac{3\pi}{4}\right)}{3\left(2-\text{sech}^2\left(\frac{3\pi}{4}\right)\right)} - \frac{\text{sech}^2\left(\frac{5\pi}{4}\right)}{5\left(2-\text{sech}^2\left(\frac{5\pi}{4}\right)\right)}$$

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)} - \frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)} + \frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)} = -\frac{\text{sech}^3\left(\frac{\pi}{6}\right)}{4-3\,\text{sech}^2\left(\frac{\pi}{6}\right)} + \frac{\text{sech}^3\left(\frac{\pi}{2}\right)}{3\left(4-3\,\text{sech}^2\left(\frac{\pi}{2}\right)\right)} - \frac{\text{sech}^3\left(\frac{5\pi}{6}\right)}{5\left(4-3\,\text{sech}^2\left(\frac{5\pi}{6}\right)\right)}$$

And:

Pi/8-1/2*tan^-1v^2 = (cos(Pi))/(cosh(Pi/2))-(cos(3Pi))/(3cosh((3Pi)/2))+(cos(5Pi))/(5cosh((5Pi)/2))

Input:

$$\frac{\pi}{8}-\frac{1}{2}\tan^{-1}(v)^2=\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}$$

$\tan^{-1}(x)$ is the inverse tangent function

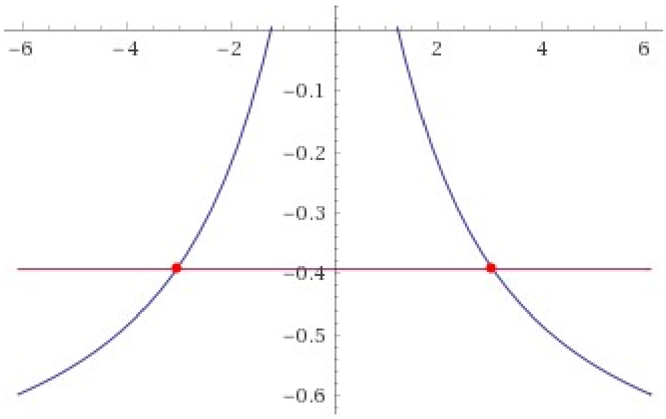
$\cosh(x)$ is the hyperbolic cosine function

Exact result:

$$\frac{\pi}{8}-\frac{1}{2}\tan^{-1}(v)^2=-\operatorname{sech}\left(\frac{\pi}{2}\right)+\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)-\frac{1}{5}\operatorname{sech}\left(\frac{5\pi}{2}\right)$$

$\operatorname{sech}(x)$ is the hyperbolic secant function

Plot:



$\frac{1}{8}(\pi-4\tan^{-1}(v)^2)$

$-\operatorname{sech}\left(\frac{\pi}{2}\right)+\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)-\frac{1}{5}\operatorname{sech}\left(\frac{5\pi}{2}\right)$

Alternate forms:

$$\frac{1}{8}(\pi-4\tan^{-1}(v)^2)+\frac{1}{5}\operatorname{sech}\left(\frac{5\pi}{2}\right)+\operatorname{sech}\left(\frac{\pi}{2}\right)=\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)$$

$$\frac{1}{8}(\pi-4\tan^{-1}(v)^2)=\frac{1}{15}\left(-15\operatorname{sech}\left(\frac{\pi}{2}\right)+5\operatorname{sech}\left(\frac{3\pi}{2}\right)-3\operatorname{sech}\left(\frac{5\pi}{2}\right)\right)$$

$$\frac{1}{8}(\pi-4\tan^{-1}(v)^2)=-\frac{(-53+106\cosh(\pi)-70\cosh(2\pi)+30\cosh(3\pi))\operatorname{sech}\left(\frac{\pi}{2}\right)}{15(2\cosh(\pi)-1)(1-2\cosh(\pi)+2\cosh(2\pi))}$$

Solutions:

$v\approx-3.0433$

$v\approx3.0433$

thence:

Pi/8-1/2*tan^-1(3.0433^2)

Input interpretation:

$$\frac{\pi}{8} - \frac{1}{2}\tan^{-1}(3.0433^2)$$

$\tan^{-1}(x)$ is the inverse tangent function

Result:

$-0.338921\ldots$

(result in radians)

-0.338921…

Alternative representations:

$$\frac{\pi}{8} - \frac{1}{2}\tan^{-1}(3.0433^2) = -\frac{\mathrm{sc}^{-1}(3.0433^2 \mid 0)}{2} + \frac{\pi}{8}$$

$$\frac{\pi}{8} - \frac{1}{2}\tan^{-1}(3.0433^2) = -\frac{1}{2}\cot^{-1}\left(\frac{1}{3.0433^2}\right) + \frac{\pi}{8}$$

$$\frac{\pi}{8} - \frac{1}{2}\tan^{-1}(3.0433^2) = -\frac{1}{2}\tan^{-1}(1, 3.0433^2) + \frac{\pi}{8}$$

Series representations:

$$\frac{\pi}{8} - \frac{1}{2}\tan^{-1}(3.0433^2) = \frac{\pi}{8} - \frac{2.31542\,\pi}{\sqrt{85.7786}} + 0.0539859\sum_{k=0}^{\infty}\frac{(-1)^k e^{-4.45177k}}{1+2k}$$

$$\frac{\pi}{8} - \frac{1}{2}\tan^{-1}(3.0433^2) = \frac{\pi}{8} - \frac{1}{2}\sum_{k=0}^{\infty}\frac{\left(-\frac{1}{5}\right)^k 18.5233^{1+2k} F_{1+2k}\left(\frac{1}{1+\sqrt{69.6229}}\right)^{1+2k}}{1+2k}$$

$$\frac{\pi}{8} - \frac{1}{2}\tan^{-1}(3.0433^2) = \frac{\pi}{8} - \frac{1}{2}\tan^{-1}(x) - \frac{1}{2}\pi\left\lfloor\frac{\arg(i(9.26167-x))}{2\pi}\right\rfloor - \frac{1}{4}i\sum_{k=1}^{\infty}\frac{\left(-(-i-x)^{-k}+(i-x)^{-k}\right)(9.26167-x)^k}{k} \quad \text{for } (i x \in \mathbb{R} \text{ and } i x < -1)$$

Integral representations:

$$\frac{\pi}{8}-\frac{1}{2}\tan^{-1}(3.0433^2)=0.125\,\pi-4.63084\int_0^1\frac{1}{1+85.7786\,t^2}\,dt$$

$$\frac{\pi}{8}-\frac{1}{2}\tan^{-1}(3.0433^2)=\frac{\pi}{8}+\frac{1.15771\,i}{\pi^{3/2}}\int_{-i\,\infty+\gamma}^{i\,\infty+\gamma}e^{-4.46336\,s}\,\Gamma\left(\frac{1}{2}-s\right)\Gamma(1-s)\,\Gamma(s)^2\,ds$$

for $0<\gamma<\frac{1}{2}$

$$\frac{\pi}{8}-\frac{1}{2}\tan^{-1}(3.0433^2)=\frac{\pi}{8}-\frac{1.15771}{i\,\pi}\int_{-i\,\infty+\gamma}^{i\,\infty+\gamma}\frac{e^{-4.45177\,s}\,\Gamma\left(\frac{1}{2}-s\right)\Gamma(1-s)\,\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\,ds$$

for $0<\gamma<\frac{1}{2}$

Continued fraction representations:

$$\frac{\pi}{8}-\frac{1}{2}\tan^{-1}(3.0433^2)=\frac{\pi}{8}-\frac{4.63084}{1+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{85.7786k^2}{1+2k}}=\frac{\pi}{8}-\frac{4.63084}{1+\frac{85.7786}{3+\frac{343.114}{5+\frac{772.008}{7+\frac{1372.46}{9+\dots}}}}}$$

$$\frac{\pi}{8}-\frac{1}{2}\tan^{-1}(3.0433^2)=\frac{\pi}{8}-\frac{4.63084}{1+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{85.7786(1-2k)^2}{86.7786-169.557k}}=$$
$$\frac{\pi}{8}-\frac{4.63084}{1+\frac{85.7786}{-82.7786+\frac{772.008}{-252.336+\frac{2144.47}{-421.893+\frac{4203.15}{-591.45+\dots}}}}}$$

$$\frac{\pi}{8}-\frac{1}{2}\tan^{-1}(3.0433^2)=-4.63084+\frac{\pi}{8}+\frac{397.227}{3+\underset{k=1}{\overset{\infty}{\mathrm{K}}}\frac{85.7786\left(1+(-1)^{1+k}+k\right)^2}{3+2k}}=$$
$$-4.23814+\frac{397.227}{3+\frac{772.008}{5+\frac{343.114}{7+\frac{2144.47}{9+\frac{1372.46}{11+\dots}}}}}$$

$$\frac{\pi}{8} - \frac{1}{2}\tan^{-1}(3.0433^2) = \frac{\pi}{8} - \frac{4.63084}{86.7786 + \underset{k=1}{\overset{\infty}{\mathrm{K}}} \frac{171.557\left(1-2\left\lfloor\frac{1+k}{2}\right\rfloor\right)\left\lfloor\frac{1+k}{2}\right\rfloor}{\left(43.8893+42.8893(-1)^k\right)(1+2k)}} =$$

$$\frac{\pi}{8} - \frac{4.63084}{86.7786 + -\frac{171.557}{3-\frac{171.557}{433.893-\frac{1029.34}{7-\frac{1029.34}{781.008+\ldots}}}}}$$

$\underset{k=k_1}{\overset{k_2}{\mathrm{K}}} a_k / b_k$ is a continued fraction

We have also that:

-0.338921498443 ≥ -0.392703719174

from which:

-0.338921498443x = -0.392703719174

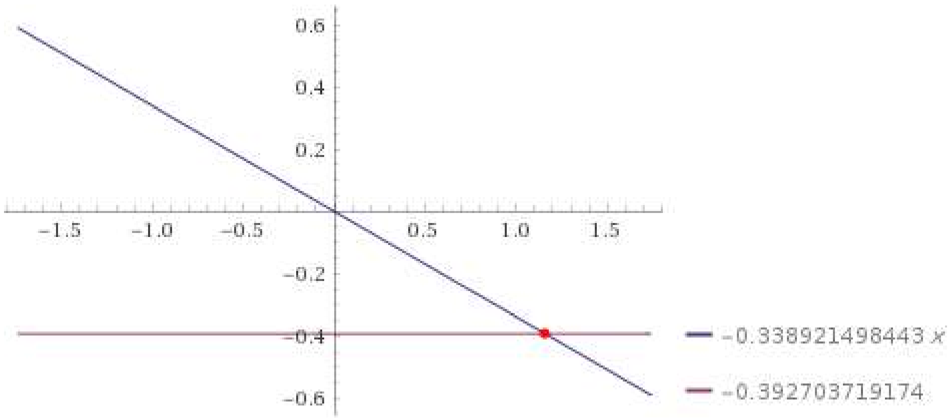
Input interpretation:

$-0.338921498443\,x = -0.392703719174$

Result:

$-0.338921498443\,x = -0.392703719174$

Plot:



Alternate form:

$0.392703719174 - 0.338921498443\,x = 0$

Solution:

$x \approx 1.15868636536$

1.15868636536

We have also:

(-0.338921498443(x+(55-2)/10^3)) = -0.392703719174

Where 2 and 55 are Fibonacci numbers

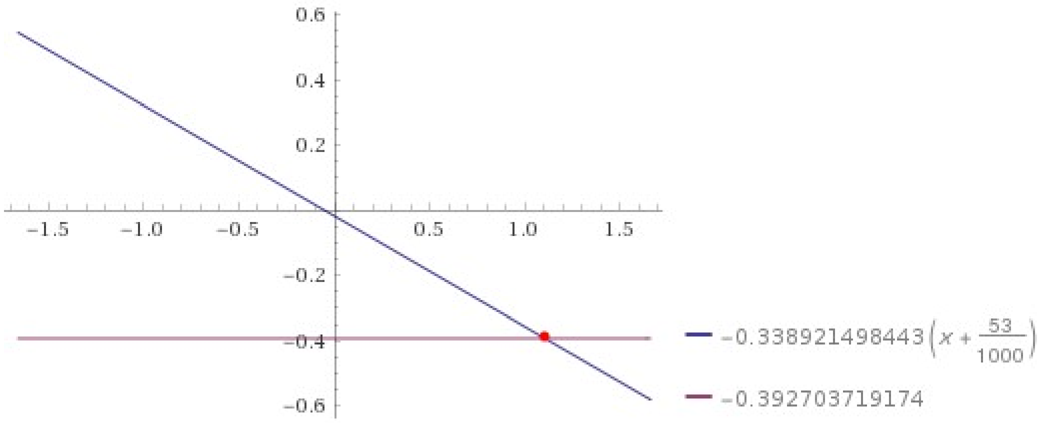
Input interpretation:

$$-0.338921498443\left(x+\frac{55-2}{10^3}\right) = -0.392703719174$$

Result:

$$-0.338921498443\left(x+\frac{53}{1000}\right) = -0.392703719174$$

Plot:



Alternate forms:

$$0.374740879757 - 0.338921498443\,x = 0$$

$$-0.338921498443\,(1.00000000000\,x + 0.053000000000) = -0.392703719174$$

Expanded form:

$$-0.338921498443\,x - 0.0179628394175 = -0.392703719174$$

Solution:

$x \approx 1.10568636536$

1.10568636536

We have:

$$-0.338921498443\,x - 0.0179628394175 = -0.392703719174$$

from which.

1/10^52(((-0.392703719174+0.0179628394175)/(-0.338921498443)))

Input interpretation:

$$\frac{1}{10^{52}}\left(-\frac{-0.392703719174+0.0179628394175}{0.338921498443}\right)$$

Result:

$1.1056863653620489430995384016829303877751119765664006... \times 10^{-52}$

$1.1056863653...*10^{-52}$ result practically equal to the value of Cosmological Constant $1.1056*10^{-52}$ m^{-2}

Now, from

$$\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}$$

we have that also:

-55/((((cos(Pi))/(cosh(Pi/2))-(cos(3Pi))/(3cosh((3Pi)/2))+
(cos(5Pi))/(5cosh((5Pi)/2))))) - 1/golden ratio

where 55 is a Fibonacci number

Input:

$$-\frac{55}{\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}}-\frac{1}{\phi}$$

cosh(x) is the hyperbolic cosine function

ϕ is the golden ratio

Exact result:

$$-\frac{1}{\phi}-\frac{55}{-\operatorname{sech}\left(\frac{\pi}{2}\right)+\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)-\frac{1}{5}\operatorname{sech}\left(\frac{5\pi}{2}\right)}$$

sech(x) is the hyperbolic secant function

Decimal approximation:

139.43666199311911632590400336630314547211452735193483024 17...

139.436661993… result practically equal to the rest mass of Pion meson 139.57 MeV

Property:

$$-\frac{1}{\phi}-\frac{55}{-\operatorname{sech}\left(\frac{\pi}{2}\right)+\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)-\frac{1}{5}\operatorname{sech}\left(\frac{5\pi}{2}\right)}$$ is a transcendental number

Alternate forms:

$$\frac{825}{15\operatorname{sech}\left(\frac{\pi}{2}\right)-5\operatorname{sech}\left(\frac{3\pi}{2}\right)+3\operatorname{sech}\left(\frac{5\pi}{2}\right)}-\frac{1}{\phi}$$

$$\frac{825}{15\operatorname{sech}\left(\frac{\pi}{2}\right)-5\operatorname{sech}\left(\frac{3\pi}{2}\right)+3\operatorname{sech}\left(\frac{5\pi}{2}\right)}-\frac{2}{1+\sqrt{5}}$$

$$\frac{1}{2}\left(1-\sqrt{5}\right)-\frac{55}{-\operatorname{sech}\left(\frac{\pi}{2}\right)+\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)-\frac{1}{5}\operatorname{sech}\left(\frac{5\pi}{2}\right)}$$

Alternative representations:

$$-\frac{55}{\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}}-\frac{1}{\phi}=-\frac{1}{\phi}-\frac{55}{\frac{\cosh(-i\pi)}{\cos\left(\frac{i\pi}{2}\right)}-\frac{\cosh(-3i\pi)}{3\cos\left(\frac{3i\pi}{2}\right)}+\frac{\cosh(-5i\pi)}{5\cos\left(\frac{5i\pi}{2}\right)}}$$

$$-\frac{55}{\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}}-\frac{1}{\phi}=-\frac{1}{\phi}-\frac{55}{\frac{\cosh(i\pi)}{\cos\left(-\frac{i\pi}{2}\right)}-\frac{\cosh(3i\pi)}{3\cos\left(-\frac{3i\pi}{2}\right)}+\frac{\cosh(5i\pi)}{5\cos\left(-\frac{5i\pi}{2}\right)}}$$

$$-\frac{55}{\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}}-\frac{1}{\phi}=-\frac{1}{\phi}-\frac{55}{\frac{\cosh(-i\pi)}{\cos\left(-\frac{i\pi}{2}\right)}-\frac{\cosh(-3i\pi)}{3\cos\left(-\frac{3i\pi}{2}\right)}+\frac{\cosh(-5i\pi)}{5\cos\left(-\frac{5i\pi}{2}\right)}}$$

Series representations:

$$-\frac{55}{\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}}-\frac{1}{\phi}=$$
$$-\frac{1}{\phi}-\frac{55}{\sum_{k=0}^{\infty}-\frac{2}{15}e^{(-5/2-(5-i)k)\pi}\left(3-5e^{\pi+2k\pi}+15e^{2\pi+4k\pi}\right)}$$

$$-\frac{55}{\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}}-\frac{1}{\phi}=$$
$$-\frac{1}{\phi}-\frac{55}{\sum_{k=0}^{\infty}-\frac{2(-1)^k(1+2k)(925+436k+488k^2+104k^3+52k^4)}{15(1+2k+2k^2)(5+2k+2k^2)(13+2k+2k^2)\pi}}$$

$$-\frac{55}{\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}}-\frac{1}{\phi}=$$
$$-\frac{1}{\phi}-\frac{55}{\sum_{k=0}^{\infty}-\frac{i\,2^{-k}\left(\text{Li}_{-k}(-i e^{z_0})-\text{Li}_{-k}(i e^{z_0})\right)\left(15(\pi-2z_0)^k-5(3\pi-2z_0)^k+3(5\pi-2z_0)^k\right)}{15\,k!}}$$
$$\text{for } \frac{1}{2}+\frac{i z_0}{\pi}\notin\mathbb{Z}$$

Integral representation:

$$-\frac{55}{\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}}-\frac{1}{\phi}=-\frac{1}{\phi}-\frac{55}{\int_0^{\infty}-\frac{2\left(15-5t^{2i}+3t^{4i}\right)t^i}{15\pi(1+t^2)}\,dt}$$

Multiple-argument formulas:

$$-\frac{55}{\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}}-\frac{1}{\phi}=-\frac{1}{\phi}-\frac{55}{-\frac{\text{sech}^2\left(\frac{\pi}{4}\right)}{2-\text{sech}^2\left(\frac{\pi}{4}\right)}+\frac{\text{sech}^2\left(\frac{3\pi}{4}\right)}{3\left(2-\text{sech}^2\left(\frac{3\pi}{4}\right)\right)}-\frac{\text{sech}^2\left(\frac{5\pi}{4}\right)}{5\left(2-\text{sech}^2\left(\frac{5\pi}{4}\right)\right)}}$$

$$-\frac{55}{\frac{\cos(\pi)}{\cosh\left(\frac{\pi}{2}\right)}-\frac{\cos(3\pi)}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{\cos(5\pi)}{5\cosh\left(\frac{5\pi}{2}\right)}}-\frac{1}{\phi}=$$
$$-\frac{1}{\phi}-\frac{55}{-\frac{\text{sech}^3\left(\frac{\pi}{6}\right)}{4-3\,\text{sech}^2\left(\frac{\pi}{6}\right)}+\frac{\text{sech}^3\left(\frac{\pi}{2}\right)}{3\left(4-3\,\text{sech}^2\left(\frac{\pi}{2}\right)\right)}-\frac{\text{sech}^3\left(\frac{5\pi}{6}\right)}{5\left(4-3\,\text{sech}^2\left(\frac{5\pi}{6}\right)\right)}}$$

Now, we have that:

Pi/(4sqrt3)*[sinh(2Pi*sqrt3)sinh(2Pi)+sin(2Pi)*sqrt3sin(2Pi)]/[(cosh(2Pi*sqrt3)-cos(2Pi))((cosh(2Pi)-cos(2Pi*sqrt3)))]

Input:

$$\frac{\pi}{4\sqrt{3}}\times\frac{\sinh(2\pi\sqrt{3})\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)}{\left(\cosh(2\pi\sqrt{3})-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos(2\pi\sqrt{3})\right)}$$

sinh(x) is the hyperbolic sine function

cosh(x) is the hyperbolic cosine function

Exact result:

$$\frac{\pi \sinh(2\pi)\sinh(2\sqrt{3}\,\pi)}{4\sqrt{3}\,(\cosh(2\sqrt{3}\,\pi)-1)(\cosh(2\pi)-\cos(2\sqrt{3}\,\pi))}$$

Decimal approximation:

0.4532731892859929211248257672723345547432335890253642373 78...

0.4532731892…

Alternate forms:

$$-\frac{\pi \sinh(2\pi)\coth(\sqrt{3}\,\pi)}{4\sqrt{3}\,(\cos(2\sqrt{3}\,\pi)-\cosh(2\pi))}$$

$$\frac{\pi \sinh(\pi)\cosh(\pi)\coth(\sqrt{3}\,\pi)\operatorname{csch}(\pi-i\sqrt{3}\,\pi)\operatorname{csch}(\pi+i\sqrt{3}\,\pi)}{4\sqrt{3}}$$

$$\frac{\pi \sinh(2\pi)\sinh(2\sqrt{3}\,\pi)\operatorname{csch}^2(\sqrt{3}\,\pi)}{4\sqrt{3}\,(2\cosh(2\pi)-2\cos(2\sqrt{3}\,\pi))}$$

coth(x) is the hyperbolic cotangent function

csch(x) is the hyperbolic cosecant function

Alternative representations:

$$\frac{(\sinh(2\pi\sqrt{3})\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi))\pi}{((\cosh(2\pi\sqrt{3})-\cos(2\pi))(\cosh(2\pi)-\cos(2\pi\sqrt{3})))(4\sqrt{3})} = \frac{\pi\left(\frac{1}{4}(-e^{-2\pi}+e^{2\pi})\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+(-e^{-2i\pi}+e^{2i\pi})^2\left(\frac{1}{2i}\right)^2\sqrt{3}\right)}{\left(\left(-\cosh(-2i\pi\sqrt{3})+\frac{1}{2}(e^{-2\pi}+e^{2\pi})\right)\left(-\cosh(-2i\pi)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\right)(4\sqrt{3})}$$

$$\frac{(\sinh(2\pi\sqrt{3})\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi))\pi}{((\cosh(2\pi\sqrt{3})-\cos(2\pi))(\cosh(2\pi)-\cos(2\pi\sqrt{3})))(4\sqrt{3})} = \left(\pi\left(\frac{1}{4}(-e^{-2\pi}+e^{2\pi})\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\cos^2\left(\frac{5\pi}{2}\right)\sqrt{3}\right)\right)\Big/ \left(\left(\left(\frac{1}{2}\left(-e^{-2i\pi}-e^{2i\pi}\right)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\left(\frac{1}{2}(e^{-2\pi}+e^{2\pi})+\frac{1}{2}\left(-e^{-2i\pi\sqrt{3}}-e^{2i\pi\sqrt{3}}\right)\right)\right)(4\sqrt{3})\right)$$

$$\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)} = \left(\pi\left(\frac{1}{4}\left(-e^{-2\pi}+e^{2\pi}\right)\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\cos^2\left(-\frac{3\pi}{2}\right)\sqrt{3}\right)\right) \Big/ \left(\left(\left(\frac{1}{2}\left(-e^{-2i\pi}-e^{2i\pi}\right)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\left(\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)+\frac{1}{2}\left(-e^{-2i\pi\sqrt{3}}-e^{2i\pi\sqrt{3}}\right)\right)\right)\left(4\sqrt{3}\right)\right)$$

Series representations:

$$\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)} = \frac{\pi^4\sum_{j_1=0}^{\infty}\sum_{j_2=0}^{\infty}\left(\operatorname{Res}_{s=-j_1}\frac{(-3)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\right)\left(\operatorname{Res}_{s=-j_2}\frac{(-1)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\right)}{4\left(-1+\sum_{k=0}^{\infty}\frac{12^k\pi^{2k}}{(2k)!}\right)\sum_{k=0}^{\infty}-\frac{\left(-1+(-3)^k\right)(2\pi)^{2k}}{(2k)!}}$$

$$\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)} = \left(\pi\sum_{k_1=0}^{\infty}\sum_{k_2=0}^{\infty}\frac{3^{1/2+k_2}(2\pi)^{2+2k_1+2k_2}}{(1+2k_1)!\,(1+2k_2)!}\right) \Big/ \left(4\sqrt{3}\left(-1+\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{(-3)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)\left(-\sum_{k=0}^{\infty}\frac{(-3)^k(2\pi)^{2k}}{(2k)!}+\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{(-1)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)\right)$$

$$\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)} = -\frac{\pi^4\sum_{j_1=0}^{\infty}\sum_{j_2=0}^{\infty}\left(\operatorname{Res}_{s=-j_1}\frac{(-3)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\right)\left(\operatorname{Res}_{s=-j_2}\frac{(-1)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\right)}{4\left(-1+\sum_{k=0}^{\infty}\frac{12^k\pi^{2k}}{(2k)!}\right)\left(-\sum_{k=0}^{\infty}\frac{(2\pi)^{2k}}{(2k)!}+\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{3^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)}$$

Integral representations:

$$\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)} = \int_0^1\int_0^1\cosh(2\pi t_1)\cosh\left(2\sqrt{3}\,\pi t_2\right)dt_2\,dt_1 \quad \text{for } \gamma>0$$

$$\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)} = \int_0^1\int_0^1 \cosh(2\pi t_1)\cosh\left(2\sqrt{3}\pi t_2\right)dt_2\,dt_1 \quad \text{for } 0<\gamma<\frac{1}{2}$$

$$\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)} = \frac{\pi^3\left(\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{\pi^2/s+s}}{s^{3/2}}\,ds\right)\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{(3\pi^2)/s+s}}{s^{3/2}}\,ds}{4\left(2i\sqrt{\pi}-\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{(3\pi^2)/s+s}}{\sqrt{s}}\,ds\right)\int_{-i\infty+\gamma}^{i\infty+\gamma}-\frac{e^{-(3\pi^2)/s+s}\left(-1+e^{(4\pi^2)/s}\right)}{\sqrt{s}}\,ds} \quad \text{for } \gamma>0$$

Multiple-argument formulas:

$$\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)} = -\frac{\pi\coth\left(\sqrt{3}\pi\right)\sinh(2\pi)}{4\sqrt{3}\left(\cos\left(2\sqrt{3}\pi\right)-\cosh(2\pi)\right)}$$

$$\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)} = \frac{\pi\cosh(\pi)\coth\left(\sqrt{3}\pi\right)\sinh(\pi)}{2\sqrt{3}\left(2-2\cos^2\left(\sqrt{3}\pi\right)+2\sinh^2(\pi)\right)}$$

$$\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)} = \frac{\pi\cosh(\pi)\cosh\left(\sqrt{3}\pi\right)\sinh(\pi)\sinh\left(\sqrt{3}\pi\right)}{\sqrt{3}\left(-2\cos^2\left(\sqrt{3}\pi\right)+2\cosh^2(\pi)\right)\left(-2+2\cosh^2\left(\sqrt{3}\pi\right)\right)}$$

We obtain also:

1/10^52((((-5/10^4-(123+3)/10^3+e* Pi/(4sqrt3)*[sinh(2Pi*sqrt3)sinh(2Pi)+sin(2Pi)*sqrt3sin(2Pi)]/[(cosh(2Pi*sqrt3)-cos(2Pi))((cosh(2Pi)-cos(2Pi*sqrt3)))]))))

Where 123 and 3 are Lucas numbers, while 5 is a Fibonacci number

Input:

$$\frac{1}{10^{52}}\left(-\frac{5}{10^4}-\frac{123+3}{10^3}+e\times\frac{\pi}{4\sqrt{3}}\times\frac{\sinh(2\pi\sqrt{3})\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)}{(\cosh(2\pi\sqrt{3})-\cos(2\pi))(\cosh(2\pi)-\cos(2\pi\sqrt{3}))}\right)$$

sinh(x) is the hyperbolic sine function

cosh(x) is the hyperbolic cosine function

Exact result:

$$\frac{\frac{e\pi\sinh(2\pi)\sinh\left(2\sqrt{3}\pi\right)}{4\sqrt{3}\left(\cosh\left(2\sqrt{3}\pi\right)-1\right)\left(\cosh(2\pi)-\cos\left(2\sqrt{3}\pi\right)\right)}-\frac{253}{2000}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

$1.1056242737637917502885479567284333963425448626209147\ldots\times10^{-52}$

$1.105624273\ldots*10^{-52}$ result practically equal to the value of Cosmological Constant $1.1056*10^{-52}$ m^{-2}

Alternate forms:

$$\left(e\pi\sinh(2\pi)\sinh\left(2\sqrt{3}\pi\right)\operatorname{csch}^2\left(\sqrt{3}\pi\right)\right)/\left(40\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\sqrt{3}\left(2\cosh(2\pi)-2\cos\left(2\sqrt{3}\pi\right)\right)\right)-\frac{253}{20\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\left(e\pi\sinh(2\pi)\sinh\left(2\sqrt{3}\pi\right)\right)/\left(40\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\sqrt{3}\left(\cosh\left(2\sqrt{3}\pi\right)-1\right)\left(\cosh(2\pi)-\cos\left(2\sqrt{3}\pi\right)\right)\right)-\frac{253}{20\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$-\left(\left(-759\cos\left(2\sqrt{3}\pi\right)+500\sqrt{3}\,e\pi\sinh(2\pi)\sinh\left(2\sqrt{3}\pi\right)+759\cosh(2\pi)-759\cosh(2\pi)\cosh\left(2\sqrt{3}\pi\right)+759\cos\left(2\sqrt{3}\pi\right)\cosh\left(2\sqrt{3}\pi\right)\right)/\left(60\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(\cosh\left(2\sqrt{3}\pi\right)-1\right)\left(\cos\left(2\sqrt{3}\pi\right)-\cosh(2\pi)\right)\right)\right)$$

csch(x) is the hyperbolic cosecant function

Alternative representations:

$$\frac{-\frac{5}{10^4}-\frac{123+3}{10^3}+\frac{e\pi\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)}{\left(4\sqrt{3}\right)\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)}}{10^{52}}=$$

$$\frac{-\frac{126}{10^3}-\frac{5}{10^4}+\frac{e\pi\left(\frac{1}{4}\left(-e^{-2\pi}+e^{2\pi}\right)\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\left(-e^{-2i\pi}+e^{2i\pi}\right)^2\left(\frac{1}{2i}\right)^2\sqrt{3}\right)}{\left(\left(-\cosh\left(-2i\pi\sqrt{3}\right)+\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)\right)\left(-\cosh(-2i\pi)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\right)\left(4\sqrt{3}\right)}}{10^{52}}$$

$$\frac{-\frac{5}{10^4}-\frac{123+3}{10^3}+\frac{e\pi\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)}{\left(4\sqrt{3}\right)\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)}}{10^{52}}=\frac{1}{10^{52}}$$
$$\left(-\frac{126}{10^3}-\frac{5}{10^4}+\left(e\pi\left(\frac{1}{4}\left(-e^{-2\pi}+e^{2\pi}\right)\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\cos^2\left(\frac{5\pi}{2}\right)\sqrt{3}\right)\right)\Big/\right.$$
$$\left(\left(\left(\frac{1}{2}\left(-e^{-2i\pi}-e^{2i\pi}\right)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\right.\right.$$
$$\left.\left.\left.\left(\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)+\frac{1}{2}\left(-e^{-2i\pi\sqrt{3}}-e^{2i\pi\sqrt{3}}\right)\right)\right)\left(4\sqrt{3}\right)\right)\right)$$

$$\frac{-\frac{5}{10^4}-\frac{123+3}{10^3}+\frac{e\pi\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)}{\left(4\sqrt{3}\right)\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)}}{10^{52}}=\frac{1}{10^{52}}$$
$$\left(-\frac{126}{10^3}-\frac{5}{10^4}+\left(e\pi\left(\frac{1}{4}\left(-e^{-2\pi}+e^{2\pi}\right)\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\cos^2\left(-\frac{3\pi}{2}\right)\sqrt{3}\right)\right)\Big/\right.$$
$$\left(\left(\left(\frac{1}{2}\left(-e^{-2i\pi}-e^{2i\pi}\right)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\right.\right.$$
$$\left.\left.\left.\left(\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)+\frac{1}{2}\left(-e^{-2i\pi\sqrt{3}}-e^{2i\pi\sqrt{3}}\right)\right)\right)\left(4\sqrt{3}\right)\right)\right)$$

Series representations:

$$\frac{-\frac{5}{10^4} - \frac{123+3}{10^3} + \frac{e\,\pi\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)\right)}{\left(4\sqrt{3}\right)\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)}}{10^{52}} = \left(253\sum_{k=0}^{\infty}-\frac{\left(-1+(-3)^k\right)(2\pi)^{2k}}{(2k)!} - 253\sum_{k_1=0}^{\infty}\sum_{k_2=0}^{\infty}\frac{3^{k_2}\,(2\pi)^{2k_2}\left(\frac{(2\pi)^{2k_1}}{(2k_1)!}-\frac{(-3)^{k_1}\,(2\pi)^{2k_1}}{(2k_1)!}\right)}{(2k_2)!} + 500\,e\,\pi^4\sum_{j_1=0}^{\infty}\sum_{j_2=0}^{\infty}\left(\operatorname{Res}_{s=-j_1}\frac{(-3)^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\right)\left(\operatorname{Res}_{s=-j_2}\frac{(-1)^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\right)\right) \Big/ \left(20\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+\sum_{k=0}^{\infty}\frac{12^k\,\pi^{2k}}{(2k)!}\right)\sum_{k=0}^{\infty}-\frac{\left(-1+(-3)^k\right)(2\pi)^{2k}}{(2k)!}\right)$$

$$\frac{-\frac{5}{10^4} - \frac{123+3}{10^3} + \frac{e\,\pi\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)\right)}{\left(4\sqrt{3}\right)\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)}}{10^{52}} = -\left(\left(253\sum_{k=0}^{\infty}\frac{(2\pi)^{2k}}{(2k)!} - 253\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{3^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)} - 253\sum_{k_1=0}^{\infty}\sum_{k_2=0}^{\infty}\frac{3^{k_2}\,(2\pi)^{2k_1+2k_2}}{(2k_1)!\,(2k_2)!} + 253\sqrt{\pi}\sum_{k_1=0}^{\infty}\sum_{k_2=0}^{\infty}\frac{3^{k_1}\,(2\pi)^{2k_1}\left(\operatorname{Res}_{s=-k_2}\frac{3^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)}{(2k_1)!} + 500\,e\,\pi^4\sum_{j_1=0}^{\infty}\sum_{j_2=0}^{\infty}\left(\operatorname{Res}_{s=-j_1}\frac{(-3)^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\right)\left(\operatorname{Res}_{s=-j_2}\frac{(-1)^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}\right)\right) \Big/ \left(20\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+\sum_{k=0}^{\infty}\frac{12^k\,\pi^{2k}}{(2k)!}\right)\left(-\sum_{k=0}^{\infty}\frac{(2\pi)^{2k}}{(2k)!} + \sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{3^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)\right)\right)$$

$$\frac{-\frac{5}{10^4}-\frac{123+3}{10^3}+\frac{e\pi\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)}{\left(4\sqrt{3}\right)\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)}}{10^{52}} =$$

$$\left(759\sum_{j=0}^{\infty}\sqrt{\pi}\left(\text{Res}_{s=-j}\frac{(-1)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}-\text{Res}_{s=-j}\frac{3^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)+\right.$$
$$500\sqrt{3}\,e\pi\sum_{k_1=0}^{\infty}\sum_{k_2=0}^{\infty}\frac{3^{1/2(1+2k_2)}(2\pi)^{2+2k_1+2k_2}}{(1+2k_1)!(1+2k_2)!}-$$
$$759\sqrt{\pi}\sum_{j_1=0}^{\infty}\sum_{j_2=0}^{\infty}\left(\text{Res}_{s=-j_1}\frac{(-3)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)$$
$$\left.\left(\sqrt{\pi}\left(\text{Res}_{s=-j_2}\frac{(-1)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)-\sqrt{\pi}\left(\text{Res}_{s=-j_2}\frac{3^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)\right)\right)\Big/$$
$$\left(60\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\right.$$
$$\left(-1+\sqrt{\pi}\sum_{j=0}^{\infty}\text{Res}_{s=-j}\frac{(-3)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)$$
$$\left.\sum_{j=0}^{\infty}\sqrt{\pi}\left(\text{Res}_{s=-j}\frac{(-1)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}-\text{Res}_{s=-j}\frac{3^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)\right)$$

Integral representations:

$$\frac{-\frac{5}{10^4}-\frac{123+3}{10^3}+\frac{e\pi\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)}{\left(4\sqrt{3}\right)\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)}}{10^{52}} =$$

$$-\left(\left(506\sqrt{\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}-\frac{i\,e^{-(3\pi^2)/s+s}\left(-1+e^{(4\pi^2)/s}\right)}{2\sqrt{\pi}\sqrt{s}}\,ds+\right.\right.$$
$$253\,i\left(\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{(3\pi^2)/s+s}}{\sqrt{s}}\,ds\right)\int_{-i\infty+\gamma}^{i\infty+\gamma}-\frac{i\,e^{-(3\pi^2)/s+s}\left(-1+e^{(4\pi^2)/s}\right)}{2\sqrt{\pi}\sqrt{s}}\,ds+$$
$$\left.\int_0^1\int_0^1\cosh(2\pi t_1)\cosh\left(2\sqrt{3}\,\pi t_2\right)dt_2\,dt_1\right)\Big/$$
$$\left(20\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\cdot.\right.$$
$$000\left(2\sqrt{\pi}+i\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{(3\pi^2)/s+s}}{\sqrt{s}}\,ds\right)$$
$$\left.\left.\int_{-i\infty+\gamma}^{i\infty+\gamma}-\frac{i\,e^{-(3\pi^2)/s+s}\left(-1+e^{(4\pi^2)/s}\right)}{2\sqrt{\pi}\sqrt{s}}\,ds\right)\right)\quad\text{for }\gamma>0$$

$$\frac{-\frac{5}{10^4}-\frac{123+3}{10^3}+\frac{e\pi\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)}{\left(4\sqrt{3}\right)\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)}}{10^{52}}=$$

$$\left(250\,e\,\pi^{5/2}\left(\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{\pi^2/s+s}}{s^{3/2}}\,ds\right)\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{(3\pi^2)/s+s}}{s^{3/2}}\,ds-506\sqrt{\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}-\frac{i\,e^{-(3\pi^2)/s+s}\left(-1+e^{(4\pi^2)/s}\right)}{2\sqrt{\pi}\sqrt{s}}\,ds-253\,i\left(\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{(3\pi^2)/s+s}}{\sqrt{s}}\,ds\right)\int_{-i\infty+\gamma}^{i\infty+\gamma}-\frac{i\,e^{-(3\pi^2)/s+s}\left(-1+e^{(4\pi^2)/s}\right)}{2\sqrt{\pi}\sqrt{s}}\,ds\right)\Bigg/\left(20\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(2\sqrt{\pi}+i\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{(3\pi^2)/s+s}}{\sqrt{s}}\,ds\right)\int_{-i\infty+\gamma}^{i\infty+\gamma}-\frac{i\,e^{-(3\pi^2)/s+s}\left(-1+e^{(4\pi^2)/s}\right)}{2\sqrt{\pi}\sqrt{s}}\,ds\right)\quad\text{for }\gamma>0$$

$$\frac{-\frac{5}{10^4}-\frac{123+3}{10^3}+\frac{e\pi\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)}{\left(4\sqrt{3}\right)\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)}}{10^{52}}=$$

$$-\left(\left(506\sqrt{\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}-\frac{1}{2}\,i\left(\frac{e^{\pi^2/s+s}}{\sqrt{\pi}\sqrt{s}}-\frac{3^{-s}\pi^{-1/2-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)ds+253\,i\left(\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{(3\pi^2)/s+s}}{\sqrt{s}}\,ds\right)\int_{-i\infty+\gamma}^{i\infty+\gamma}-\frac{1}{2}\,i\left(\frac{e^{\pi^2/s+s}}{\sqrt{\pi}\sqrt{s}}-\frac{3^{-s}\pi^{-1/2-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)ds+\int_0^1\int_0^1\cosh(2\pi t_1)\cosh\left(2\sqrt{3}\,\pi t_2\right)dt_2\,dt_1\right)\Bigg/\left(20\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(2\sqrt{\pi}+i\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{(3\pi^2)/s+s}}{\sqrt{s}}\,ds\right)\int_{-i\infty+\gamma}^{i\infty+\gamma}-\frac{1}{2}\,i\left(\frac{e^{\pi^2/s+s}}{\sqrt{\pi}\sqrt{s}}-\frac{3^{-s}\pi^{-1/2-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)ds\right)\right)\quad\text{for }0<\gamma<\frac{1}{2}$$

Multiple-argument formulas:

$$\frac{-\frac{5}{10^4}-\frac{123+3}{10^3}+\frac{e\,\pi\left(\sinh\left(2\,\pi\,\sqrt{3}\right)\sinh(2\,\pi)+\sin(2\,\pi)\,\sqrt{3}\,\sin(2\,\pi)\right)}{\left(4\,\sqrt{3}\right)\left(\left(\cosh\left(2\,\pi\,\sqrt{3}\right)-\cos(2\,\pi)\right)\left(\cosh(2\,\pi)-\cos\left(2\,\pi\,\sqrt{3}\right)\right)\right)}}{10^{52}} = \frac{-\frac{253}{2000}+\frac{e\,\pi\cosh(\pi)\coth\left(\sqrt{3}\,\pi\right)\sinh(\pi)}{2\,\sqrt{3}\,\left(2-2\cos^2\left(\sqrt{3}\,\pi\right)+2\sinh^2(\pi)\right)}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{-\frac{5}{10^4}-\frac{123+3}{10^3}+\frac{e\,\pi\left(\sinh\left(2\,\pi\,\sqrt{3}\right)\sinh(2\,\pi)+\sin(2\,\pi)\,\sqrt{3}\,\sin(2\,\pi)\right)}{\left(4\,\sqrt{3}\right)\left(\left(\cosh\left(2\,\pi\,\sqrt{3}\right)-\cos(2\,\pi)\right)\left(\cosh(2\,\pi)-\cos\left(2\,\pi\,\sqrt{3}\right)\right)\right)}}{10^{52}} = \frac{-\frac{253}{2000}+\frac{e\,\pi\cosh(\pi)\cosh\left(\sqrt{3}\,\pi\right)\sinh(\pi)\sinh\left(\sqrt{3}\,\pi\right)}{\sqrt{3}\,\left(-2\cos^2\left(\sqrt{3}\,\pi\right)+2\cosh^2(\pi)\right)\left(-2+2\cosh^2\left(\sqrt{3}\,\pi\right)\right)}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{-\frac{5}{10^4}-\frac{123+3}{10^3}+\frac{e\,\pi\left(\sinh\left(2\,\pi\,\sqrt{3}\right)\sinh(2\,\pi)+\sin(2\,\pi)\,\sqrt{3}\,\sin(2\,\pi)\right)}{\left(4\,\sqrt{3}\right)\left(\left(\cosh\left(2\,\pi\,\sqrt{3}\right)-\cos(2\,\pi)\right)\left(\cosh(2\,\pi)-\cos\left(2\,\pi\,\sqrt{3}\right)\right)\right)}}{10^{52}} = \frac{-\frac{253}{2000}+\frac{e\,\pi\cosh(\pi)\cosh\left(\sqrt{3}\,\pi\right)\sinh(\pi)\sinh\left(\sqrt{3}\,\pi\right)}{\sqrt{3}\,\left(-2+2\cosh^2\left(\sqrt{3}\,\pi\right)\right)\left(-2+2\cosh^2(\pi)+2\sin^2\left(\sqrt{3}\,\pi\right)\right)}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

55/((((Pi/(4sqrt3)*[sinh(2Pi*sqrt3)sinh(2Pi)+sin(2Pi)*sqrt3sin(2Pi)]/[(cosh(2Pi*sqrt3)-cos(2Pi))((cosh(2Pi)-cos(2Pi*sqrt3)))])))))+4

Input:

$$\frac{55}{\frac{\pi}{4\,\sqrt{3}}\times\frac{\sinh\left(2\,\pi\,\sqrt{3}\right)\sinh(2\,\pi)+\sin(2\,\pi)\,\sqrt{3}\,\sin(2\,\pi)}{\left(\cosh\left(2\,\pi\,\sqrt{3}\right)-\cos(2\,\pi)\right)\left(\cosh(2\,\pi)-\cos\left(2\,\pi\,\sqrt{3}\right)\right)}}+4$$

$\sinh(x)$ is the hyperbolic sine function

$\cosh(x)$ is the hyperbolic cosine function

Exact result:

$$4+\frac{220\,\sqrt{3}\,\left(\cosh\left(2\,\sqrt{3}\,\pi\right)-1\right)\operatorname{csch}(2\,\pi)\operatorname{csch}\left(2\,\sqrt{3}\,\pi\right)\left(\cosh(2\,\pi)-\cos\left(2\,\sqrt{3}\,\pi\right)\right)}{\pi}$$

$\operatorname{csch}(x)$ is the hyperbolic cosecant function

Decimal approximation:

125.3396276242090406268301345257681325815757747396127243609...

125.339627624… 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:

$$4-\frac{220\sqrt{3}\tanh(\sqrt{3}\pi)\operatorname{csch}(2\pi)(\cos(2\sqrt{3}\pi)-\cosh(2\pi))}{\pi}$$

$$4+\frac{110\sqrt{3}\tanh(\pi)\tanh(\sqrt{3}\pi)}{\pi}+\frac{110\sqrt{3}\tanh(\sqrt{3}\pi)\coth(\pi)}{\pi}-\frac{110\sqrt{3}\cos^2(\sqrt{3}\pi)\tanh(\sqrt{3}\pi)\operatorname{csch}(\pi)\operatorname{sech}(\pi)}{\pi}+\frac{110\sqrt{3}\sin^2(\sqrt{3}\pi)\tanh(\sqrt{3}\pi)\operatorname{csch}(\pi)\operatorname{sech}(\pi)}{\pi}$$

$$-\frac{1}{\pi}4\left(-\pi-55\sqrt{3}\coth(2\pi)\coth\left(2\sqrt{3}\pi\right)-55\sqrt{3}\cos\left(2\sqrt{3}\pi\right)\operatorname{csch}(2\pi)\operatorname{csch}\left(2\sqrt{3}\pi\right)+55\sqrt{3}\coth(2\pi)\operatorname{csch}\left(2\sqrt{3}\pi\right)+55\sqrt{3}\cos\left(2\sqrt{3}\pi\right)\coth\left(2\sqrt{3}\pi\right)\operatorname{csch}(2\pi)\right)$$

Expanded form:

$$4+\frac{220\sqrt{3}\coth(2\pi)\coth(2\sqrt{3}\pi)}{\pi}+\frac{220\sqrt{3}\cos(2\sqrt{3}\pi)\operatorname{csch}(2\pi)\operatorname{csch}(2\sqrt{3}\pi)}{\pi}-\frac{220\sqrt{3}\coth(2\pi)\operatorname{csch}(2\sqrt{3}\pi)}{\pi}-\frac{220\sqrt{3}\cos(2\sqrt{3}\pi)\coth(2\sqrt{3}\pi)\operatorname{csch}(2\pi)}{\pi}$$

Alternative representations:

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+4=$$

$$4+\frac{55}{\frac{\pi\left(\frac{1}{4}\left(-e^{-2\pi}+e^{2\pi}\right)\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\left(-e^{-2i\pi}+e^{2i\pi}\right)^2\left(\frac{1}{2i}\right)^2\sqrt{3}\right)}{\left(\left(-\cosh\left(-2i\pi\sqrt{3}\right)+\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)\right)\left(-\cosh(-2i\pi)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\right)\left(4\sqrt{3}\right)}}$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+4=$$

$$4+\frac{55}{\frac{\pi\left(\frac{1}{4}\left(-e^{-2\pi}+e^{2\pi}\right)\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\cos^2\left(\frac{5\pi}{2}\right)\sqrt{3}\right)}{\left(\left(\frac{1}{2}\left(-e^{-2i\pi}-e^{2i\pi}\right)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\left(\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)+\frac{1}{2}\left(-e^{-2i\pi\sqrt{3}}-e^{2i\pi\sqrt{3}}\right)\right)\right)\left(4\sqrt{3}\right)}}$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+4=$$

$$4+\frac{55}{\frac{\pi\left(\frac{1}{4}\left(-e^{-2\pi}+e^{2\pi}\right)\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\cos^2\left(-\frac{3\pi}{2}\right)\sqrt{3}\right)}{\left(\left(\frac{1}{2}\left(-e^{-2i\pi}-e^{2i\pi}\right)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\left(\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)+\frac{1}{2}\left(-e^{-2i\pi\sqrt{3}}-e^{2i\pi\sqrt{3}}\right)\right)\right)\left(4\sqrt{3}\right)}}$$

Series representations:

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+4=\frac{1}{\pi^3}$$

$$4\left(\pi^3-660\sum_{k_1=-\infty}^{\infty}\sum_{k_2=-\infty}^{\infty}\sum_{k_3=0}^{\infty}\frac{(-1)^{k_1+k_2}\left(\frac{(2\pi)^{2k_3}}{(2k_3)!}-\frac{(-3)^{k_3}(2\pi)^{2k_3}}{(2k_3)!}\right)}{\left(4+k_1^2\right)\left(12+k_2^2\right)}+\right.$$
$$\left.660\sum_{k_1=-\infty}^{\infty}\sum_{k_2=-\infty}^{\infty}\sum_{k_3=0}^{\infty}\sum_{k_4=0}^{\infty}\frac{(-1)^{k_1+k_2}\,12^{k_4}\,\pi^{2k_4}\left(\frac{(2\pi)^{2k_3}}{(2k_3)!}-\frac{(-3)^{k_3}(2\pi)^{2k_3}}{(2k_3)!}\right)}{(2k_4)!\left(4+k_1^2\right)\left(12+k_2^2\right)}\right)$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+4=$$

$$4+\frac{1}{\pi}220\sqrt{3}\left(\frac{1}{2\pi}+4\pi\sum_{k=1}^{\infty}\frac{(-1)^k}{\left(4+k^2\right)\pi^2}\right)$$
$$\left(\frac{1}{2\sqrt{3}\,\pi}+4\sqrt{3}\,\pi\sum_{k=1}^{\infty}\frac{(-1)^k}{\left(12+k^2\right)\pi^2}\right)\left(-1+\sqrt{\pi}\sum_{j=0}^{\infty}\mathrm{Res}_{s=-j}\frac{(-3)^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)$$
$$\sum_{j=0}^{\infty}\sqrt{\pi}\left(\mathrm{Res}_{s=-j}\frac{(-1)^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}-\mathrm{Res}_{s=-j}\frac{3^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+4 =$$

$$4+\frac{1}{\pi}220\sqrt{3}\left(\frac{1}{2\pi}+4\pi\sum_{k=1}^{\infty}\frac{(-1)^k}{4\pi^2+k^2\pi^2}\right)\left(\frac{1}{2\sqrt{3}\,\pi}+4\sqrt{3}\,\pi\sum_{k=1}^{\infty}\frac{(-1)^k}{12\pi^2+k^2\pi^2}\right)\left(-1+\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{(-3)^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)\left(-\sum_{k=0}^{\infty}\frac{(-3)^k\,(2\pi)^{2k}}{(2k)!}+\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{(-1)^{-s}\,\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)$$

Multiple-argument formulas:

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+4 =$$

$$4+\frac{110\sqrt{3}\,\operatorname{csch}(\pi)\operatorname{sech}(\pi)\left(2-2\cos^2\left(\sqrt{3}\,\pi\right)+2\sinh^2(\pi)\right)\tanh\left(\sqrt{3}\,\pi\right)}{\pi}$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+4 =$$

$$4+\frac{1}{\pi}55\sqrt{3}\left(-2\cos^2\left(\sqrt{3}\,\pi\right)+2\cosh^2(\pi)\right)\left(-2+2\cosh^2\left(\sqrt{3}\,\pi\right)\right)\operatorname{csch}(\pi)\operatorname{csch}\left(\sqrt{3}\,\pi\right)\operatorname{sech}(\pi)\operatorname{sech}\left(\sqrt{3}\,\pi\right)$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+4 =$$

$$4+\frac{1}{\pi}55\sqrt{3}\left(-2+2\cosh^2\left(\sqrt{3}\,\pi\right)\right)\operatorname{csch}(\pi)\operatorname{csch}\left(\sqrt{3}\,\pi\right)\operatorname{sech}(\pi)\operatorname{sech}\left(\sqrt{3}\,\pi\right)\left(-2+2\cosh^2(\pi)+2\sin^2\left(\sqrt{3}\,\pi\right)\right)$$

55/((((Pi/(4sqrt3)*[sinh(2Pi*sqrt3)sinh(2Pi)+sin(2Pi)*sqrt3sin(2Pi)]/[(cosh(2Pi*sqrt3)-cos(2Pi))((cosh(2Pi)-cos(2Pi*sqrt3)))]))))+18

Input:

$$\frac{55}{\frac{\pi}{4\sqrt{3}}\times\frac{\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)}{\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)}}+18$$

$\sinh(x)$ is the hyperbolic sine function

$\cosh(x)$ is the hyperbolic cosine function

Exact result:

$$18+\frac{220\sqrt{3}\left(\cosh(2\sqrt{3}\pi)-1\right)\operatorname{csch}(2\pi)\operatorname{csch}(2\sqrt{3}\pi)\left(\cosh(2\pi)-\cos(2\sqrt{3}\pi)\right)}{\pi}$$

$\operatorname{csch}(x)$ is the hyperbolic cosecant function

Decimal approximation:

139.3396276242090406268301345257681325815757747396127243609...

139.339627624… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternate forms:

$$18-\frac{220\sqrt{3}\tanh(\sqrt{3}\pi)\operatorname{csch}(2\pi)\left(\cos(2\sqrt{3}\pi)-\cosh(2\pi)\right)}{\pi}$$

$$18+\frac{110\sqrt{3}\tanh(\pi)\tanh(\sqrt{3}\pi)}{\pi}+\frac{110\sqrt{3}\tanh(\sqrt{3}\pi)\coth(\pi)}{\pi}-\frac{110\sqrt{3}\cos^2(\sqrt{3}\pi)\tanh(\sqrt{3}\pi)\operatorname{csch}(\pi)\operatorname{sech}(\pi)}{\pi}+\frac{110\sqrt{3}\sin^2(\sqrt{3}\pi)\tanh(\sqrt{3}\pi)\operatorname{csch}(\pi)\operatorname{sech}(\pi)}{\pi}$$

$$-\frac{1}{\pi}2\left(-9\pi-110\sqrt{3}\coth(2\pi)\coth\left(2\sqrt{3}\pi\right)-110\sqrt{3}\cos\left(2\sqrt{3}\pi\right)\operatorname{csch}(2\pi)\operatorname{csch}\left(2\sqrt{3}\pi\right)+110\sqrt{3}\coth(2\pi)\operatorname{csch}\left(2\sqrt{3}\pi\right)+110\sqrt{3}\cos\left(2\sqrt{3}\pi\right)\coth\left(2\sqrt{3}\pi\right)\operatorname{csch}(2\pi)\right)$$

Expanded form:

$$18+\frac{220\sqrt{3}\coth(2\pi)\coth(2\sqrt{3}\pi)}{\pi}+\frac{220\sqrt{3}\cos(2\sqrt{3}\pi)\operatorname{csch}(2\pi)\operatorname{csch}(2\sqrt{3}\pi)}{\pi}-\frac{220\sqrt{3}\coth(2\pi)\operatorname{csch}(2\sqrt{3}\pi)}{\pi}-\frac{220\sqrt{3}\cos(2\sqrt{3}\pi)\coth(2\sqrt{3}\pi)\operatorname{csch}(2\pi)}{\pi}$$

Alternative representations:

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+18 = 18+\frac{55}{\frac{\pi\left(\frac{1}{4}\left(-e^{-2\pi}+e^{2\pi}\right)\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\left(-e^{-2i\pi}+e^{2i\pi}\right)^2\left(\frac{1}{2i}\right)^2\sqrt{3}\right)}{\left(\left(-\cosh\left(-2i\pi\sqrt{3}\right)+\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)\right)\left(-\cosh(-2i\pi)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\right)\left(4\sqrt{3}\right)}}$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+18 = 18+\frac{55}{\frac{\pi\left(\frac{1}{4}\left(-e^{-2\pi}+e^{2\pi}\right)\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\cos^2\left(\frac{5\pi}{2}\right)\sqrt{3}\right)}{\left(\left(\frac{1}{2}\left(-e^{-2i\pi}-e^{2i\pi}\right)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\left(\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)+\frac{1}{2}\left(-e^{-2i\pi\sqrt{3}}-e^{2i\pi\sqrt{3}}\right)\right)\right)\left(4\sqrt{3}\right)}}$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+18 = 18+\frac{55}{\frac{\pi\left(\frac{1}{4}\left(-e^{-2\pi}+e^{2\pi}\right)\left(-e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)+\cos^2\left(-\frac{3\pi}{2}\right)\sqrt{3}\right)}{\left(\left(\frac{1}{2}\left(-e^{-2i\pi}-e^{2i\pi}\right)+\frac{1}{2}\left(e^{-2\pi\sqrt{3}}+e^{2\pi\sqrt{3}}\right)\right)\left(\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)+\frac{1}{2}\left(-e^{-2i\pi\sqrt{3}}-e^{2i\pi\sqrt{3}}\right)\right)\right)\left(4\sqrt{3}\right)}}$$

Series representations:

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\,\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+18 = \frac{1}{\pi^3}\,6\left(3\pi^3-440\sum_{k_1=-\infty}^{\infty}\sum_{k_2=-\infty}^{\infty}\sum_{k_3=0}^{\infty}\frac{(-1)^{k_1+k_2}\left(\frac{(2\pi)^{2k_3}}{(2k_3)!}-\frac{(-3)^{k_3}(2\pi)^{2k_3}}{(2k_3)!}\right)}{\left(4+k_1^2\right)\left(12+k_2^2\right)}+440\sum_{k_1=-\infty}^{\infty}\sum_{k_2=-\infty}^{\infty}\sum_{k_3=0}^{\infty}\sum_{k_4=0}^{\infty}\frac{(-1)^{k_1+k_2}\,12^{k_4}\,\pi^{2k_4}\left(\frac{(2\pi)^{2k_3}}{(2k_3)!}-\frac{(-3)^{k_3}(2\pi)^{2k_3}}{(2k_3)!}\right)}{(2k_4)!\left(4+k_1^2\right)\left(12+k_2^2\right)}\right)$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+18=$$

$$18+\frac{1}{\pi}220\sqrt{3}\left(\frac{1}{2\pi}+4\pi\sum_{k=1}^{\infty}\frac{(-1)^k}{(4+k^2)\pi^2}\right)\left(\frac{1}{2\sqrt{3}\pi}+4\sqrt{3}\pi\sum_{k=1}^{\infty}\frac{(-1)^k}{(12+k^2)\pi^2}\right)\left(-1+\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{(-3)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)\sum_{j=0}^{\infty}\sqrt{\pi}\left(\operatorname{Res}_{s=-j}\frac{(-1)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}-\operatorname{Res}_{s=-j}\frac{3^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+18=$$

$$18+\frac{1}{\pi}220\sqrt{3}\left(\frac{1}{2\pi}+4\pi\sum_{k=1}^{\infty}\frac{(-1)^k}{4\pi^2+k^2\pi^2}\right)\left(\frac{1}{2\sqrt{3}\pi}+4\sqrt{3}\pi\sum_{k=1}^{\infty}\frac{(-1)^k}{12\pi^2+k^2\pi^2}\right)\left(-1+\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{(-3)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)\left(-\sum_{k=0}^{\infty}\frac{(-3)^k(2\pi)^{2k}}{(2k)!}+\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{(-1)^{-s}\pi^{-2s}\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)$$

Multiple-argument formulas:

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+18=$$

$$18+\frac{110\sqrt{3}\operatorname{csch}(\pi)\operatorname{sech}(\pi)\left(2-2\cos^2\left(\sqrt{3}\pi\right)+2\sinh^2(\pi)\right)\tanh\left(\sqrt{3}\pi\right)}{\pi}$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+18=$$

$$18+\frac{1}{\pi}55\sqrt{3}\left(-2\cos^2\left(\sqrt{3}\pi\right)+2\cosh^2(\pi)\right)\left(-2+2\cosh^2\left(\sqrt{3}\pi\right)\right)\operatorname{csch}(\pi)\operatorname{csch}\left(\sqrt{3}\pi\right)\operatorname{sech}(\pi)\operatorname{sech}\left(\sqrt{3}\pi\right)$$

$$\frac{55}{\frac{\left(\sinh\left(2\pi\sqrt{3}\right)\sinh(2\pi)+\sin(2\pi)\sqrt{3}\sin(2\pi)\right)\pi}{\left(\left(\cosh\left(2\pi\sqrt{3}\right)-\cos(2\pi)\right)\left(\cosh(2\pi)-\cos\left(2\pi\sqrt{3}\right)\right)\right)\left(4\sqrt{3}\right)}}+18=$$

$$18+\frac{1}{\pi}55\sqrt{3}\left(-2+2\cosh^2\left(\sqrt{3}\,\pi\right)\right)\operatorname{csch}(\pi)\operatorname{csch}\left(\sqrt{3}\,\pi\right)\operatorname{sech}(\pi)\operatorname{sech}\left(\sqrt{3}\,\pi\right)\left(-2+2\cosh^2(\pi)+2\sin^2\left(\sqrt{3}\,\pi\right)\right)$$

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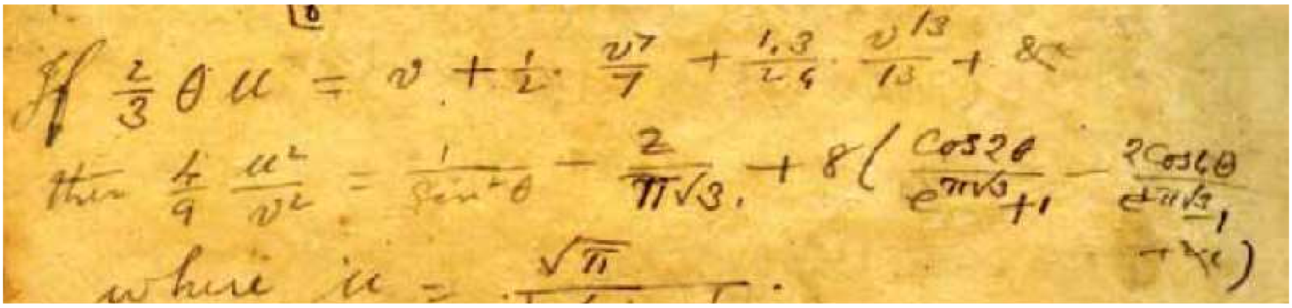


If $\frac{2}{3}\theta u = v + \frac{1}{2}\cdot\frac{v^7}{7} + \frac{1.3}{2.4}\cdot\frac{v^{13}}{13} + \&c$

then $\frac{4}{9}\frac{u^2}{v^2} = \frac{1}{\sin^2\theta} - \frac{2}{\pi\sqrt{3}} + 8\left(\frac{\cos 2\theta}{e^{\pi\sqrt{3}}+1} - \frac{2\cos 4\theta}{e^{2\pi\sqrt{3}}-1} + \&c\right)$

where $u = \frac{\sqrt{\pi}}{\ldots}$

For θ = π/2, we obtain:

1/(sin^2(Pi/2))-z/(Pi/2*sqrt3)+8((((cos(2Pi/2))/((e^(Pi/2*sqrt3)+1))-(((2cos(4Pi/2)))/((e^(Pi/2*sqrt3)-1))))))

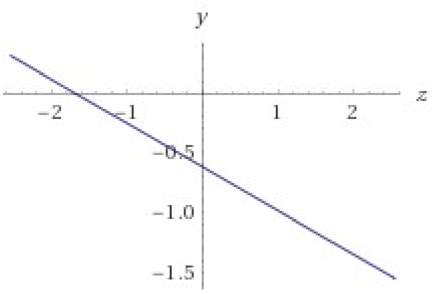
Input:

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}-\frac{z}{\frac{\pi}{2}\sqrt{3}}+8\left(\frac{\cos\left(2\times\frac{\pi}{2}\right)}{e^{\pi/2\sqrt{3}}+1}-\frac{2\cos\left(4\times\frac{\pi}{2}\right)}{e^{\pi/2\sqrt{3}}-1}\right)$$

Exact result:

$$-\frac{2z}{\sqrt{3}\,\pi}+8\left(-\frac{2}{e^{\left(\sqrt{3}\,\pi\right)/2}-1}-\frac{1}{1+e^{\left(\sqrt{3}\,\pi\right)/2}}\right)+1$$

Plot:



(z from −2.5 to 2.5)

Geometric figure:

line

Alternate forms:

$$-\frac{2z}{\sqrt{3}\pi}+5+4\tanh\left(\frac{\sqrt{3}\pi}{4}\right)-8\coth\left(\frac{\sqrt{3}\pi}{4}\right)$$

$$-\frac{2\sqrt{3}z-3\pi}{3\pi}-\frac{8}{1+e^{(\sqrt{3}\pi)/2}}-\frac{16}{e^{(\sqrt{3}\pi)/2}-1}$$

$$\text{Factor}\left[-\frac{2z}{\sqrt{3}\pi}+8\left(-\frac{2}{e^{(\sqrt{3}\pi)/2}-1}-\frac{1}{1+e^{(\sqrt{3}\pi)/2}}\right)+1,\ \text{Extension}\to e^{(\sqrt{3}\pi)/2}\right]$$

Root:

$z\approx-1.6911$

-1.6911

Branch points:

(none; function is entire)

Derivative:

$$\frac{d}{dz}\left(\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}-\frac{z}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{(\pi\sqrt{3})/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{(\pi\sqrt{3})/2}-1}\right)\right)=-\frac{2}{\sqrt{3}\pi}$$

Indefinite integral:

$$\int\left(1+8\left(-\frac{2}{-1+e^{(\sqrt{3}\pi)/2}}-\frac{1}{1+e^{(\sqrt{3}\pi)/2}}\right)-\frac{2z}{\sqrt{3}\pi}\right)dz=$$
$$-\frac{z^2}{\sqrt{3}\pi}+8\left(-\frac{2}{e^{(\sqrt{3}\pi)/2}-1}-\frac{1}{1+e^{(\sqrt{3}\pi)/2}}\right)z+z+\text{constant}$$

1/(sin^2(Pi/2))+(1.6911)/(Pi/2*sqrt3)+8((((cos(2Pi/2))/((e^(Pi/2*sqrt3)+1))-(((2cos(4Pi/2)))/((e^(Pi/2*sqrt3)-1))))))

Input interpretation:

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi}{2}\sqrt{3}}+8\left(\frac{\cos\left(2\times\frac{\pi}{2}\right)}{e^{\pi/2\sqrt{3}}+1}-\frac{2\cos\left(4\times\frac{\pi}{2}\right)}{e^{\pi/2\sqrt{3}}-1}\right)$$

Result:

$-0.0000154756\ldots$

-0.0000154756…

Alternative representations:

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)=8\left(-\frac{2\cosh(2i\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{\cosh(i\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\cos^2(0)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}$$

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)=8\left(-\frac{2\cosh(-2i\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{\cosh(-i\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\cos^2(0)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}$$

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)=8\left(-\frac{2\cosh(-2i\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{\cosh(-i\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{(-\cos(\pi))^2}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}$$

Series representations:

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)=\frac{1}{4\left(\sum_{k=0}^{\infty}(-1)^k J_{1+2k}\left(\frac{\pi}{2}\right)\right)^2}-\frac{16\sum_{k=0}^{\infty}\frac{(-4)^k\pi^{2k}}{(2k)!}}{-1+\exp\left(\frac{1}{2}\pi\exp\left(i\pi\left\lfloor\frac{\arg(3-x)}{2\pi}\right\rfloor\right)\sqrt{x}\sum_{k=0}^{\infty}\frac{(-1)^k(3-x)^k x^{-k}\left(-\frac{1}{2}\right)_k}{k!}\right)}+\frac{8\sum_{k=0}^{\infty}\frac{(-1)^k\pi^{2k}}{(2k)!}}{1+\exp\left(\frac{1}{2}\pi\exp\left(i\pi\left\lfloor\frac{\arg(3-x)}{2\pi}\right\rfloor\right)\sqrt{x}\sum_{k=0}^{\infty}\frac{(-1)^k(3-x)^k x^{-k}\left(-\frac{1}{2}\right)_k}{k!}\right)}+\frac{3.3822}{\pi\exp\left(i\pi\left\lfloor\frac{\arg(3-x)}{2\pi}\right\rfloor\right)\sqrt{x}\sum_{k=0}^{\infty}\frac{(-1)^k(3-x)^k x^{-k}\left(-\frac{1}{2}\right)_k}{k!}}\quad \text{for } (x\in\mathbb{R} \text{ and } x<0)$$

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)} + \frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}} + 8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1} - \frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right) =$$

$$-\frac{16\sum_{k=0}^{\infty}\frac{(-4)^k \pi^{2k}}{(2k)!}}{-1+\exp\left(\frac{1}{2}\pi\exp\left(i\pi\left\lfloor\frac{\arg(3-x)}{2\pi}\right\rfloor\right)\sqrt{x}\sum_{k=0}^{\infty}\frac{(-1)^k (3-x)^k x^{-k}\left(-\frac{1}{2}\right)_k}{k!}\right)} +$$

$$\frac{8\sum_{k=0}^{\infty}\frac{(-1)^k \pi^{2k}}{(2k)!}}{1+\exp\left(\frac{1}{2}\pi\exp\left(i\pi\left\lfloor\frac{\arg(3-x)}{2\pi}\right\rfloor\right)\sqrt{x}\sum_{k=0}^{\infty}\frac{(-1)^k (3-x)^k x^{-k}\left(-\frac{1}{2}\right)_k}{k!}\right)} +$$

$$\frac{1}{\left(\sum_{k=0}^{\infty}\frac{(-1)^k 2^{-1-2k}\pi^{1+2k}}{(1+2k)!}\right)^2} +$$

$$\frac{3.3822}{\pi\exp\left(i\pi\left\lfloor\frac{\arg(3-x)}{2\pi}\right\rfloor\right)\sqrt{x}\sum_{k=0}^{\infty}\frac{(-1)^k (3-x)^k x^{-k}\left(-\frac{1}{2}\right)_k}{k!}} \quad \text{for } (x \in \mathbb{R} \text{ and } x < 0)$$

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)} + \frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}} + 8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1} - \frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right) = \frac{1}{4\left(\sum_{k=0}^{\infty}(-1)^k J_{1+2k}\left(\frac{\pi}{2}\right)\right)^2} -$$

$$\frac{16\sum_{k=0}^{\infty}\frac{(-4)^k \pi^{2k}}{(2k)!}}{-1+\exp\left(\frac{1}{2}\pi\left(\frac{1}{z_0}\right)^{1/2\lfloor\arg(3-z_0)/(2\pi)\rfloor} z_0^{1/2(1+\lfloor\arg(3-z_0)/(2\pi)\rfloor)}\sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k (3-z_0)^k z_0^{-k}}{k!}\right)} +$$

$$\frac{8\sum_{k=0}^{\infty}\frac{(-1)^k \pi^{2k}}{(2k)!}}{1+\exp\left(\frac{1}{2}\pi\left(\frac{1}{z_0}\right)^{1/2\lfloor\arg(3-z_0)/(2\pi)\rfloor} z_0^{1/2(1+\lfloor\arg(3-z_0)/(2\pi)\rfloor)}\sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k (3-z_0)^k z_0^{-k}}{k!}\right)} +$$

$$\frac{3.3822\left(\frac{1}{z_0}\right)^{-1/2\lfloor\arg(3-z_0)/(2\pi)\rfloor} z_0^{1/2(-1-\lfloor\arg(3-z_0)/(2\pi)\rfloor)}}{\pi\sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k (3-z_0)^k z_0^{-k}}{k!}}$$

Half-argument formulas:

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)} + \frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}} + 8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1} - \frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right) = \frac{3.3822\sqrt{2}}{\pi\sqrt{6}} + \frac{1}{\sqrt{\frac{1}{2}\left(1-\cos(\pi)\right)}^{\,2}} + 8\left(\frac{1}{1+e^{\left(\pi\sqrt{6}\right)/\left(2\sqrt{2}\right)}}\,(-1)^{\lfloor(\pi+\operatorname{Re}(2\pi))/(2\pi)\rfloor}\sqrt{\frac{1}{2}\left(1+\cos(2\pi)\right)}\left(1-\left(1+(-1)^{\lfloor-(\pi+\operatorname{Re}(2\pi))/(2\pi)\rfloor+\lfloor(\pi+\operatorname{Re}(2\pi))/(2\pi)\rfloor}\right)\theta(-\operatorname{Im}(2\pi))\right) - \frac{1}{-1+e^{\left(\pi\sqrt{6}\right)/\left(2\sqrt{2}\right)}}\,2\,(-1)^{\lfloor(\pi+\operatorname{Re}(4\pi))/(2\pi)\rfloor}\sqrt{\frac{1}{2}\left(1+\cos(4\pi)\right)}\left(1-\left(1+(-1)^{\lfloor-(\pi+\operatorname{Re}(4\pi))/(2\pi)\rfloor+\lfloor(\pi+\operatorname{Re}(4\pi))/(2\pi)\rfloor}\right)\theta(-\operatorname{Im}(4\pi))\right)\right)$$

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)} + \frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}} + 8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1} - \frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right) = \frac{3.3822\sqrt{2}}{\pi\sqrt{6}} + \frac{(-1)^{-2\lfloor\operatorname{Re}(\pi)/(2\pi)\rfloor}}{\sqrt{\frac{1}{2}\left(1-\cos(\pi)\right)}^{\,2}\left(1-\left(1+(-1)^{\lfloor-\operatorname{Re}(\pi)/(2\pi)\rfloor+\lfloor\operatorname{Re}(\pi)/(2\pi)\rfloor}\right)\theta(-\operatorname{Im}(\pi))\right)^2} + 8\left(\frac{1}{1+e^{\left(\pi\sqrt{6}\right)/\left(2\sqrt{2}\right)}}\,(-1)^{\lfloor(\pi+\operatorname{Re}(2\pi))/(2\pi)\rfloor}\sqrt{\frac{1}{2}\left(1+\cos(2\pi)\right)}\left(1-\left(1+(-1)^{\lfloor-(\pi+\operatorname{Re}(2\pi))/(2\pi)\rfloor+\lfloor(\pi+\operatorname{Re}(2\pi))/(2\pi)\rfloor}\right)\theta(-\operatorname{Im}(2\pi))\right) - \frac{1}{-1+e^{\left(\pi\sqrt{6}\right)/\left(2\sqrt{2}\right)}}\,2\,(-1)^{\lfloor(\pi+\operatorname{Re}(4\pi))/(2\pi)\rfloor}\sqrt{\frac{1}{2}\left(1+\cos(4\pi)\right)}\left(1-\left(1+(-1)^{\lfloor-(\pi+\operatorname{Re}(4\pi))/(2\pi)\rfloor+\lfloor(\pi+\operatorname{Re}(4\pi))/(2\pi)\rfloor}\right)\theta(-\operatorname{Im}(4\pi))\right)\right)$$

Multiple-argument formulas:

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)} + \frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}} + 8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1} - \frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right) = 8\left(\frac{-1+2\cos^2\left(\frac{\pi}{2}\right)}{1+e^{\left(\pi\sqrt{3}\right)/2}} - \frac{2\left(-1+2\cos^2(\pi)\right)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right) + \frac{1}{4\cos^2\left(\frac{\pi}{4}\right)\sin^2\left(\frac{\pi}{4}\right)} + \frac{3.3822}{\pi\sqrt{3}}$$

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)} + \frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}} + 8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1} - \frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right) = \frac{1}{4\cos^2\left(\frac{\pi}{4}\right)\sin^2\left(\frac{\pi}{4}\right)} + 8\left(\frac{1-2\sin^2\left(\frac{\pi}{2}\right)}{1+e^{\left(\pi\sqrt{3}\right)/2}} - \frac{2\left(1-2\sin^2(\pi)\right)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right) + \frac{3.3822}{\pi\sqrt{3}}$$

$$\frac{1}{\sin^2\left(\frac{\pi}{2}\right)} + \frac{1.6911}{\frac{\sqrt{3}\,\pi}{2}} + 8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\sqrt{3}\,\pi\right)/2}+1} - \frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right) =$$

$$8\left(\frac{-1+2\cos^2\left(\frac{\pi}{2}\right)}{1+e^{\left(\pi\sqrt{3}\right)/2}} - \frac{2\left(-1+2\cos^2(\pi)\right)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right) + \frac{1}{\left(3\sin\left(\frac{\pi}{6}\right)-4\sin^3\left(\frac{\pi}{6}\right)\right)^2} + \frac{3.3822}{\pi\sqrt{3}}$$

1/2sqrt(((-1/(((1/(sin^2(Pi/2))+(1.6911)/(Pi/2*sqrt3)+8((((cos(2Pi/2))/((e^(Pi/2*sqrt3)+1))-(((2cos(4Pi/2)))/((e^(Pi/2*sqrt3)-1)))))))))))-golden ratio

Input interpretation:

$$\frac{1}{2}\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)} + \frac{1.6911}{\frac{\pi}{2}\sqrt{3}} + 8\left(\frac{\cos\left(2\times\frac{\pi}{2}\right)}{e^{\pi/2\sqrt{3}}+1} - \frac{2\cos\left(4\times\frac{\pi}{2}\right)}{e^{\pi/2\sqrt{3}}-1}\right)}} - \phi$$

ϕ is the golden ratio

Result:

125.482...

125.482… 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:

$$\frac{1}{2}\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)} + \frac{1.6911}{\frac{\pi\sqrt{3}}{2}} + 8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1} - \frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}} - \phi =$$

$$-\phi + \frac{1}{2}\sqrt{-\frac{1}{8\left(-\frac{2\cosh(2\,i\,\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}} + \frac{\cosh(i\,\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}\right) + \frac{1}{\cos^2(0)} + \frac{1.6911}{\frac{\pi\sqrt{3}}{2}}}}$$

$$\frac{1}{2}\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}-\phi = -\phi+\frac{1}{2}\sqrt{-\frac{1}{8\left(-\frac{2\cosh(-2i\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{\cosh(-i\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\cos^2(0)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}}}$$

$$\frac{1}{2}\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}-\phi = -\phi+\frac{1}{2}\sqrt{-\frac{1}{8\left(-\frac{2\cosh(-2i\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{\cosh(-i\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{(-\cos(\pi))^2}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}}}$$

Series representations:

$$\frac{1}{2}\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}-\phi = -\phi+\frac{1}{2}\exp\left(i\pi\left\lfloor\frac{\arg\left(-x-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}\right)}{2\pi}\right\rfloor\right)\sqrt{x}\sum_{k=0}^{\infty}\frac{(-1)^k x^{-k}\left(-\frac{1}{2}\right)_k\left(-x-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}\right)^k}{k!}$$

for ($x \in \mathbb{R}$ and $x < 0$)

$$\frac{1}{2}\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}-\phi=$$

$$-\phi+\frac{1}{2}\left(\frac{1}{z_0}\right)^{1/2\left\lfloor\arg\left(-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}-z_0\right)\Big/(2\pi)\right\rfloor} z_0^{1/2\left(1+\left\lfloor\arg\left(-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}-z_0\right)\Big/(2\pi)\right\rfloor\right)} \sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k\left(-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}-z_0\right)^k z_0^{-k}}{k!}$$

Half-argument formulas:

$$\frac{1}{2}\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}-\phi=$$

$$-\phi+\frac{\sqrt{-\frac{2}{\frac{8\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{16\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}}}{2\sqrt{2}}$$

$$\frac{1}{2}\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}-\phi=$$

$$-\phi+\frac{\sqrt{-\frac{2}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}}}{2\sqrt{2}}$$

Multiple-argument formulas:

$$\frac{1}{2}\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{(\pi\sqrt{3})/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{(\pi\sqrt{3})/2}-1}\right)}}-\phi=$$

$$-\phi+\frac{1}{2}\exp\left(i\pi\left\lfloor-\frac{-\pi+\arg(-1)+\arg\left(\frac{1}{\frac{8\cos(\pi)}{1+e^{(\pi\sqrt{3})/2}}-\frac{16\cos(2\pi)}{-1+e^{(\pi\sqrt{3})/2}}+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}\right)}{2\pi}\right\rfloor\right)$$

$$\sqrt{-1}\sqrt{\frac{1}{\frac{8\cos(\pi)}{1+e^{(\pi\sqrt{3})/2}}-\frac{16\cos(2\pi)}{-1+e^{(\pi\sqrt{3})/2}}+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}}$$

$$\frac{1}{2}\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{(\pi\sqrt{3})/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{(\pi\sqrt{3})/2}-1}\right)}}-\phi=$$

$$-\phi+\frac{1}{2}\exp\left(i\pi\left\lfloor\frac{\pi-\arg(-1)-\arg\left(\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{(\pi\sqrt{3})/2}}-\frac{2\cos(2\pi)}{-1+e^{(\pi\sqrt{3})/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}\right)}{2\pi}\right\rfloor\right)$$

$$\sqrt{-1}\sqrt{\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{(\pi\sqrt{3})/2}}-\frac{2\cos(2\pi)}{-1+e^{(\pi\sqrt{3})/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}}$$

We have also that:

1/10^52(((-3/10^4+[sqrt(((-1/(((1/(sin^2(Pi/2))+(1.6911)/(Pi/2*sqrt3)+8((((cos(2Pi/2))/((e^(Pi/2*sqrt3)+1))-(((2cos(4Pi/2)))/((e^(Pi/2*sqrt3)-1))))))))))))]^1/55)))

Input interpretation:

$$\frac{1}{10^{52}}\left(-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi}{2}\sqrt{3}}+8\left(\frac{\cos\left(2\times\frac{\pi}{2}\right)}{e^{\pi/2\sqrt{3}}+1}-\frac{2\cos\left(4\times\frac{\pi}{2}\right)}{e^{\pi/2\sqrt{3}}-1}\right)}}}\right)$$

Result:

$1.10564\ldots \times 10^{-52}$

$1.10564\ldots*10^{-52}$ result practically equal to the value of Cosmological Constant $1.1056*10^{-52}$ m^{-2}

Alternative representations:

$$\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}}}{10^{52}}=\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{8\left(-\frac{2\cosh(2i\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{\cosh(i\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\cos^2(0)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}}}}}{10^{52}}$$

$$\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}}}{10^{52}}=\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{8\left(-\frac{2\cosh(-2i\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{\cosh(-i\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\cos^2(0)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}}}}}{10^{52}}$$

$$\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}}}{10^{52}}=\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{8\left(-\frac{2\cosh(-2i\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{\cosh(-i\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{(-\cos(\pi))^2}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}}}}}{10^{52}}$$

Series representations:

$$\frac{-\frac{3}{10^4} + \sqrt[55]{\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)} + \frac{1.6911}{\frac{\pi\sqrt{3}}{2}} + 8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1} - \frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}}}{10^{52}} = -(3/100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000) + \left(\left(\exp\left(i\pi\left\lfloor\frac{\arg\left(-x-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}\right)}{2\pi}\right\rfloor\right)\sqrt{x}\sum_{k=0}^{\infty}\frac{(-1)^k x^{-k}\left(-\frac{1}{2}\right)_k\left(-x-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}\right)^k}{k!}\right)\text{^}(1/55)\right) / 10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000$$

for $(x \in \mathbb{R}$ and $x < 0)$

$$\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}}}{10^{52}}=$$

$$-\frac{3}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+$$

$$\left(\left(\left(\frac{1}{z_0}\right)^{1/2\left\lfloor\arg\left(-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}-z_0\right)/(2\pi)\right\rfloor}\right.\right.$$

$$z_0^{1/2+1/2\left\lfloor\arg\left(-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}-z_0\right)/(2\pi)\right\rfloor}$$

$$\left.\sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k\left(-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}-z_0\right)^k z_0^{-k}}{k!}\right)^\wedge$$

$$\left.(1/55)\right)\Big/$$

$$10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000$$

$$\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}}}{10^{52}}=$$

$$-\frac{3}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+$$

$$\left(\left(\left(\frac{1}{z_0}\right)^{1/2\left\lfloor\arg\left(-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}-z_0\right)/(2\pi)\right\rfloor}\right.\right.$$

$$z_0^{1/2+1/2\left\lfloor\arg\left(-\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}-z_0\right)/(2\pi)\right\rfloor}$$

$$\left.\sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k\left(-\frac{1}{\frac{8\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{16\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}-z_0\right)^k z_0^{-k}}{k!}\right)\wedge(1/$$

$$\left.55)\right)\Big/$$

$$10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000$$

Half-argument formula:

$$\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}}}{10^{52}} =$$

$$\frac{-\frac{3}{10\,000}+\sqrt[55]{\frac{\sqrt{-\frac{2}{\frac{8\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{16\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}}}{\sqrt{2}}}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Multiple-argument formulas:

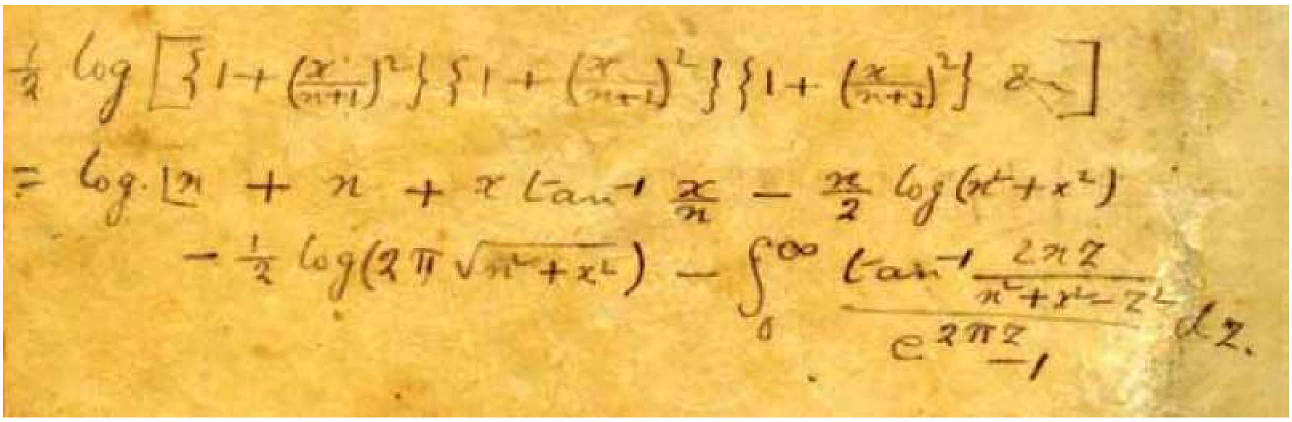
$$\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}}}{10^{52}} =$$

$$\left(-\frac{3}{10\,000}+\left(\exp\left(i\pi\left\lfloor-\frac{-\pi+\arg(-1)+\arg\left(\frac{1}{\frac{8\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{16\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}\right)}{2\pi}\right\rfloor\right)\sqrt{-1}\sqrt{\frac{1}{\frac{8\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{16\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}}\right)^{\wedge}(1/55)\right)\Big/$$

$$10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000$$

$$\frac{-\frac{3}{10^4}+\sqrt[55]{\sqrt{-\frac{1}{\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{1.6911}{\frac{\pi\sqrt{3}}{2}}+8\left(\frac{\cos\left(\frac{2\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}+1}-\frac{2\cos\left(\frac{4\pi}{2}\right)}{e^{\left(\pi\sqrt{3}\right)/2}-1}\right)}}}}{10^{52}} =$$

$$\left(-\frac{3}{10\,000}+\left(\exp\left(i\pi\left\lfloor\frac{\pi-\arg(-1)-\arg\left(\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}\right)}{2\pi}\right\rfloor\right)\sqrt{-1}\sqrt{\frac{1}{8\left(\frac{\cos(\pi)}{1+e^{\left(\pi\sqrt{3}\right)/2}}-\frac{2\cos(2\pi)}{-1+e^{\left(\pi\sqrt{3}\right)/2}}\right)+\frac{1}{\sin^2\left(\frac{\pi}{2}\right)}+\frac{3.3822}{\pi\sqrt{3}}}}\right)\text{^}(1/55)\right) \Big/ 10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000$$



1/2*ln(1+(2/(8+1))^2)*(1+(2/(8+2))^2)*(1+(2/(8+3))^2)

Input:

$$\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)$$

log(x) is the natural logarithm

Exact result:

$$\frac{65}{121}\log\left(\frac{85}{81}\right)$$

Decimal approximation:

0.025893691059190494235581365467758166727683791831505831798...

0.025893691…

Property:

$\frac{65}{121}\log\left(\frac{85}{81}\right)$ is a transcendental number

Alternate forms:

$$\frac{65\log(85)}{121}-\frac{260\log(3)}{121}$$

$$-\frac{65}{121}(4\log(3)-\log(5)-\log(17))$$

$$-\frac{260\log(3)}{121}+\frac{65\log(5)}{121}+\frac{65\log(17)}{121}$$

Alternative representations:

$$\frac{1}{2}\log\left(\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)\right)=\frac{1}{2}\log_e\left(\left(1+\left(\frac{2}{9}\right)^2\right)\left(1+\left(\frac{2}{10}\right)^2\right)\left(1+\left(\frac{2}{11}\right)^2\right)\right)$$

$$\frac{1}{2}\log\left(\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)\right)=\frac{1}{2}\log(a)\log_a\left(\left(1+\left(\frac{2}{9}\right)^2\right)\left(1+\left(\frac{2}{10}\right)^2\right)\left(1+\left(\frac{2}{11}\right)^2\right)\right)$$

$$\frac{1}{2}\log\left(\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)\right)=-\frac{1}{2}\operatorname{Li}_1\left(-\left(\frac{2}{9}\right)^2\right)\left(1+\left(\frac{2}{10}\right)^2\right)\left(1+\left(\frac{2}{11}\right)^2\right)$$

Series representations:

$$\frac{1}{2}\log\left(\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)\right)=-\frac{65}{121}\sum_{k=1}^{\infty}\frac{\left(-\frac{4}{81}\right)^k}{k}$$

$$\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right) = \frac{130}{121}\,i\,\pi\left\lfloor\frac{\arg\left(\frac{85}{81}-x\right)}{2\,\pi}\right\rfloor + \frac{65\log(x)}{121} - \frac{65}{121}\sum_{k=1}^{\infty}\frac{(-1)^k\left(\frac{85}{81}-x\right)^k x^{-k}}{k} \quad \text{for } x < 0$$

$$\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right) = \frac{65}{121}\left\lfloor\frac{\arg\left(\frac{85}{81}-z_0\right)}{2\,\pi}\right\rfloor\log\left(\frac{1}{z_0}\right) + \frac{65\log(z_0)}{121} + \frac{65}{121}\left\lfloor\frac{\arg\left(\frac{85}{81}-z_0\right)}{2\,\pi}\right\rfloor\log(z_0) - \frac{65}{121}\sum_{k=1}^{\infty}\frac{(-1)^k\left(\frac{85}{81}-z_0\right)^k z_0^{-k}}{k}$$

Integral representations:

$$\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right) = \frac{65}{121}\int_1^{\frac{85}{81}}\frac{1}{t}\,dt$$

$$\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right) = -\frac{65\,i}{242\,\pi}\int_{-i\,\infty+\gamma}^{i\,\infty+\gamma}\frac{\left(\frac{81}{4}\right)^s\Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}\,ds \quad \text{for } -1 < \gamma < 0$$

From which

1/10^52(((1/2*ln(1+(2/(8+1))^2)*(1+(2/(8+2))^2)*(1+(2/(8+3))^2) +1+8/10^2-2/10^4)))

where 8 and 2 are Fibonacci numbers, we obtain:

Input:

$$\frac{1}{10^{52}}\left(\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)+1+\frac{8}{10^2}-\frac{2}{10^4}\right)$$

log(x) is the natural logarithm

Exact result:

$$\frac{\frac{5399}{5000}+\frac{65}{121}\log\left(\frac{85}{81}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

$1.1056936910591904942355813654677581667276837918315058... \times 10^{-52}$

1.105693691…*10^-52 result practically equal to the value of Cosmological Constant 1.1056*10^-52 m^-2

Property:

$$\frac{\frac{5399}{5000}+\frac{65}{121}\log\left(\frac{85}{81}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

is a transcendental number

Alternate forms:

$$\frac{653\,279+325\,000\log\left(\frac{85}{81}\right)}{6\,050\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{5399}{50\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{13\log\left(\frac{85}{81}\right)}{242\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{5399}{50\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}-\frac{13\log(3)}{60\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{13\log(85)}{242\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Alternative representations:

$$\frac{\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)+1+\frac{8}{10^2}-\frac{2}{10^4}}{10^{52}}=\frac{1+\frac{8}{10^2}-\frac{2}{10^4}+\frac{1}{2}\log_e\left(1+\left(\frac{2}{9}\right)^2\right)\left(1+\left(\frac{2}{10}\right)^2\right)\left(1+\left(\frac{2}{11}\right)^2\right)}{10^{52}}$$

$$\frac{\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)+1+\frac{8}{10^2}-\frac{2}{10^4}}{10^{52}}=\frac{1+\frac{8}{10^2}-\frac{2}{10^4}+\frac{1}{2}\log(a)\log_a\left(1+\left(\frac{2}{9}\right)^2\right)\left(1+\left(\frac{2}{10}\right)^2\right)\left(1+\left(\frac{2}{11}\right)^2\right)}{10^{52}}$$

$$\frac{\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)+1+\frac{8}{10^2}-\frac{2}{10^4}}{10^{52}}=\frac{1+\frac{8}{10^2}-\frac{2}{10^4}-\frac{1}{2}\operatorname{Li}_1\left(-\left(\frac{2}{9}\right)^2\right)\left(1+\left(\frac{2}{10}\right)^2\right)\left(1+\left(\frac{2}{11}\right)^2\right)}{10^{52}}$$

Series representations:

$$\frac{\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)+1+\frac{8}{10^2}-\frac{2}{10^4}}{10^{52}} = \frac{5399}{50\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} - \frac{13\sum_{k=1}^{\infty}\frac{\left(-\frac{4}{81}\right)^k}{k}}{242\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)+1+\frac{8}{10^2}-\frac{2}{10^4}}{10^{52}} = \frac{5399}{50\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \frac{13\sum_{j=1}^{\infty}\operatorname{Res}_{s=-j}\frac{\left(\frac{81}{4}\right)^s\Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}}{242\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)+1+\frac{8}{10^2}-\frac{2}{10^4}}{10^{52}} = \frac{5399}{50\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \frac{13\left\lfloor\frac{\arg\left(\frac{85}{81}-z_0\right)}{2\pi}\right\rfloor\log\left(\frac{1}{z_0}\right)}{242\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \frac{13\log(z_0)}{242\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \frac{13\left\lfloor\frac{\arg\left(\frac{85}{81}-z_0\right)}{2\pi}\right\rfloor\log(z_0)}{242\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} - \frac{13\sum_{k=1}^{\infty}\frac{(-1)^k\left(\frac{85}{81}-z_0\right)^k z_0^{-k}}{k}}{242\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Integral representations:

$$\frac{\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)+1+\frac{8}{10^2}-\frac{2}{10^4}}{10^{52}} = \frac{5399}{50\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \frac{13}{242\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}\int_1^{\frac{85}{81}}\frac{1}{t}\,dt$$

$$\frac{\frac{1}{2}\log\left(1+\left(\frac{2}{8+1}\right)^2\right)\left(1+\left(\frac{2}{8+2}\right)^2\right)\left(1+\left(\frac{2}{8+3}\right)^2\right)+1+\frac{8}{10^2}-\frac{2}{10^4}}{10^{52}} =$$

$$\frac{5399}{50\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} -$$

$$\frac{13\,i}{484\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}$$

$$\int_{-i\,\infty+\gamma}^{i\,\infty+\gamma} \frac{\left(\frac{81}{4}\right)^s \Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}\,ds \quad \text{for } -1<\gamma<0$$

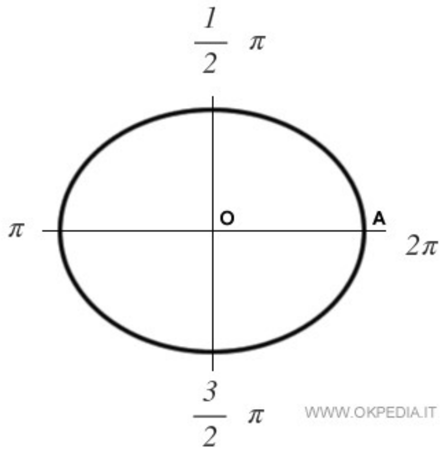
We know that:

$$90°\ \frac{2\pi}{360} = \frac{1}{2}\ \pi$$

$$180°\ \frac{2\pi}{360} = \pi$$

$$270°\ \frac{2\pi}{360} = \frac{3}{2}\ \pi$$

$$360°\ \frac{2\pi}{360} = 2\pi$$



https://www.okpedia.it/goniometria

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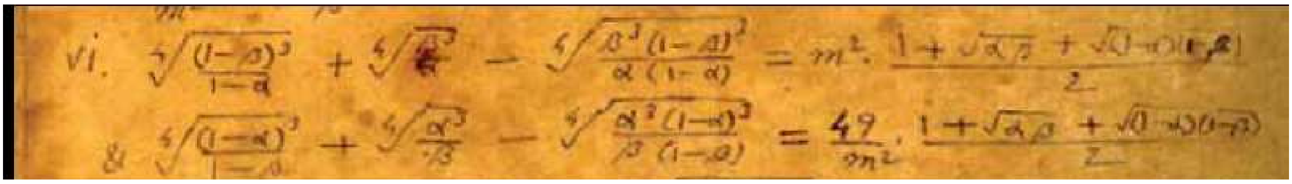


For $m^2 = -7$

49/(-7)*1/2*(((1+sqrt(Pi^2)+sqrt((1-Pi)(1-Pi)))))

Input:

$$-\frac{49}{7} \times \frac{1}{2} \left(1 + \sqrt{\pi^2} + \sqrt{(1-\pi)(1-\pi)}\right)$$

Exact result:

$$-7\pi$$

Decimal approximation:

-21.9911485751285526692385036829565201893801857956257407468...

-21.99114857512...

Property:

-7π is a transcendental number

Alternative representations:

$$\frac{\left(1 + \sqrt{\pi^2} + \sqrt{(1-\pi)(1-\pi)}\right)49}{2(-7)} = \frac{49\left(1 + \pi + \sqrt{(1-\pi)^2}\right)}{2(-7)}$$

$$\frac{\left(1 + \sqrt{\pi^2} + \sqrt{(1-\pi)(1-\pi)}\right)49}{2(-7)} = \frac{49\left(1 + \sqrt{(1-\pi)^2} + \sqrt{-i\pi}\sqrt{i\pi}\right)}{2(-7)}$$

$$\frac{\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)49}{2(-7)}=\frac{49\left(1+\pi\, e^{i\pi\lfloor(\pi-2\arg(\pi))/(2\pi)\rfloor}+\sqrt{(1-\pi)^2}\right)}{2(-7)}$$

Series representations:

$$\frac{\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)49}{2(-7)}=-28\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}$$

$$\frac{\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)49}{2(-7)}=\sum_{k=0}^{\infty}\frac{28(-1)^k\,1195^{-1-2k}\left(5^{1+2k}-4\times 239^{1+2k}\right)}{1+2k}$$

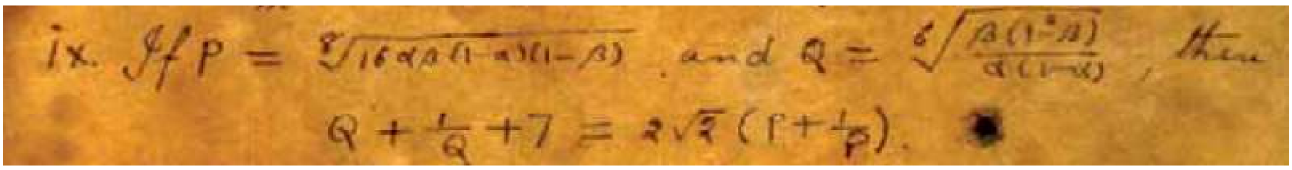
$$\frac{\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)49}{2(-7)}=-7\sum_{k=0}^{\infty}\left(-\frac{1}{4}\right)^k\left(\frac{1}{1+2k}+\frac{2}{1+4k}+\frac{1}{3+4k}\right)$$

Integral representations:

$$\frac{\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)49}{2(-7)}=-28\int_0^1\sqrt{1-t^2}\,dt$$

$$\frac{\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)49}{2(-7)}=-14\int_0^1\frac{1}{\sqrt{1-t^2}}\,dt$$

$$\frac{\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)49}{2(-7)}=-14\int_0^{\infty}\frac{1}{1+t^2}\,dt$$


ix. If $P=\sqrt[8]{16\alpha\beta(1-\alpha)(1-\beta)}$ and $Q=\sqrt[6]{\frac{\beta(1-\beta)}{\alpha(1-\alpha)}}$, then $Q+\frac{1}{Q}+7=2\sqrt{2}\left(P+\frac{1}{P}\right)$.

For α = β = π, we obtain:

(((16*Pi^2(1-Pi)^2)))^1/8

Input:

$$\sqrt[8]{16\,\pi^2\,(1-\pi)^2}$$

Exact result:

$$\sqrt{2}\,\sqrt[4]{(\pi-1)\,\pi}$$

Decimal approximation:

2.2776484006094629007280436906037114217005474405666466602817...

2.277648400609…

Property:

$\sqrt{2}\,\sqrt[4]{(-1+\pi)\,\pi}$ is a transcendental number

All 8th roots of 16 (1 - π)^2 π^2:

$\sqrt{2}\,\sqrt[4]{(\pi-1)\,\pi}\;e^0 \approx 2.2776$ (real, principal root)

$\sqrt{2}\,\sqrt[4]{(\pi-1)\,\pi}\;e^{(i\pi)/4} \approx 1.6105 + 1.6105\,i$

$\sqrt{2}\,\sqrt[4]{(\pi-1)\,\pi}\;e^{(i\pi)/2} \approx 2.2776\,i$

$\sqrt{2}\,\sqrt[4]{(\pi-1)\,\pi}\;e^{(3i\pi)/4} \approx -1.6105 + 1.6105\,i$

$\sqrt{2}\,\sqrt[4]{(\pi-1)\,\pi}\;e^{i\pi} \approx -2.2776$ (real root)

Alternative representations:

$$\sqrt[8]{16\,\pi^2\,(1-\pi)^2} = \sqrt[8]{16\,(1-180\,°)^2\,(180\,°)^2}$$

$$\sqrt[8]{16\,\pi^2\,(1-\pi)^2} = \sqrt[8]{96\,(1-\pi)^2\,\zeta(2)}$$

$$\sqrt[8]{16\,\pi^2\,(1-\pi)^2} = \sqrt[8]{16\left(1-\cos^{-1}(-1)\right)^2\cos^{-1}(-1)^2}$$

Integral representation:

$$(1+z)^a = \frac{\int_{-i\,\infty+\gamma}^{i\,\infty+\gamma} \frac{\Gamma(s)\,\Gamma(-a-s)}{z^s}\,ds}{(2\,\pi\,i)\,\Gamma(-a)} \quad \text{for } (0<\gamma<-\mathrm{Re}(a) \text{ and } |\arg(z)|<\pi)$$

Dividing the two expression and performing the following calculations, we obtain:

[-(((49/(-7)*1/2*(((1+sqrt(Pi^2)+sqrt((1-Pi)(1-Pi))))))))/(((16*Pi^2(1-Pi)(1-Pi))))^1/8]^3 -89-34+5

Where 89, 34 and 5 are Fibonacci numbers

Input:

$$\left(-\frac{-\frac{49}{7}\times\frac{1}{2}\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^3-89-34+5$$

Exact result:

$$\frac{343\,\pi^{9/4}}{2\sqrt{2}\,(\pi-1)^{3/4}}-118$$

Decimal approximation:

782.0853411478890059488380442188482632311787178417382048014...

782.085341147889… result practically equal to the rest mass of Omega meson 782.65 MeV

Alternate forms:

$$\frac{343\sqrt{2}\,\pi^{9/4}-472\,(\pi-1)^{3/4}}{4\,(\pi-1)^{3/4}}$$

$$-\frac{236\sqrt{2}\,(\pi-1)^{3/4}-343\,\pi^{9/4}}{2\sqrt{2}\,(\pi-1)^{3/4}}$$

Alternative representations:

$$\left(-\frac{49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}\,(-7\times 2)}\right)^3-89-34+5=-118+\left(-\frac{49\left(1+\pi+\sqrt{(1-\pi)^2}\right)}{2\,(-7)\sqrt[8]{16\,(1-\pi)^2\,\pi^2}}\right)^3$$

$$\left(-\frac{49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}\,(-7\times 2)}\right)^3-89-34+5=$$
$$-118+\left(-\frac{49\left(1+\sqrt{(1-\pi)^2}+\sqrt{-i\pi}\,\sqrt{i\pi}\right)}{2\,(-7)\sqrt[8]{16\,(1-\pi)^2\,\pi^2}}\right)^3$$

$$\left(-\frac{49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}\,(-7\times 2)}\right)^3-89-34+5=$$
$$-118+\left(-\frac{49\left(1+\pi\,e^{i\pi\lfloor(\pi-2\arg(\pi))/(2\pi)\rfloor}+\sqrt{(1-\pi)^2}\right)}{2\,(-7)\sqrt[8]{16\,(1-\pi)^2\,\pi^2}}\right)^3$$

Series representations:

$$\left(-\frac{49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}\,(-7\times 2)}\right)^3-89-34+5=$$
$$-118+\frac{343\left(1+\sum_{k=0}^{\infty}\binom{\frac{1}{2}}{k}\left(((-2+\pi)\pi)^{-k}\sqrt{(-2+\pi)\pi}+\left(-1+\pi^2\right)^{-k}\sqrt{-1+\pi^2}\right)\right)^3}{16\sqrt{2}\left((1-\pi)^2\,\pi^2\right)^{3/8}}$$

$$\left(-\frac{49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}\,(-7\times 2)}\right)^3-89-34+5=$$
$$-118+\frac{343\left(1+\sum_{k=0}^{\infty}\frac{(-1)^k\,((-2+\pi)\pi)^{-k}\left(-1+\pi^2\right)^{-k}\left(-\frac{1}{2}\right)_k\left(\left(-1+\pi^2\right)^k\sqrt{(-2+\pi)\pi}+((-2+\pi)\pi)^k\sqrt{-1+\pi^2}\right)}{k!}\right)^3}{16\sqrt{2}\left((1-\pi)^2\,\pi^2\right)^{3/8}}$$

$$\left(-\frac{49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}\,(-7\times 2)}\right)^3-89-34+5=$$
$$-118+\frac{343\left(1+\sqrt{z_0}\sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k\left(\left(\pi^2-z_0\right)^k+\left(1-2\pi+\pi^2-z_0\right)^k\right)z_0^{-k}}{k!}\right)^3}{16\sqrt{2}\left((1-\pi)^2\,\pi^2\right)^{3/8}}$$
$$\text{for not }\left(\left(z_0\in\mathbb{R}\text{ and }-\infty<z_0\le 0\right)\right)$$

1/(2Pi)((([-(((49/(-7)*1/2*(((1+sqrt(Pi^2)+sqrt((1-Pi)(1-Pi)))))))/(((16*Pi^2(1-Pi)(1-Pi))))^1/8]^3 -89-34+5)))+13+e-1/golden ratio

Input:

$$\frac{1}{2\pi}\left(\left(-\frac{-\frac{49}{7}\times\frac{1}{2}\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5\right)+13+e-\frac{1}{\phi}$$

ϕ is the golden ratio

Exact result:

$$-\frac{1}{\phi}+13+e+\frac{\frac{343\pi^{9/4}}{2\sqrt{2}(\pi-1)^{3/4}}-118}{2\pi}$$

Decimal approximation:

139.5729958031069747239769456056204244889606424477608132509...

139.572995803… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternate forms:

$$13-\frac{2}{1+\sqrt{5}}+e-\frac{59}{\pi}+\frac{343\pi^{5/4}}{4\sqrt{2}(\pi-1)^{3/4}}$$

$$\frac{1}{2}\left(27-\sqrt{5}\right)+e+\frac{\frac{343\pi^{9/4}}{2\sqrt{2}(\pi-1)^{3/4}}-118}{2\pi}$$

$$\frac{4\sqrt{2}\,e(\pi-1)^{3/4}\pi\phi+\left(343\pi^{9/4}+4\sqrt{2}(\pi-1)^{3/4}(13\pi-59)\right)\phi-4\sqrt{2}(\pi-1)^{3/4}\pi}{4\sqrt{2}(\pi-1)^{3/4}\pi\phi}$$

Alternative representations:

$$\frac{\left(-\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}+13+e-\frac{1}{\phi}=$$

$$13+e-\frac{1}{\phi}+\frac{-118+\left(-\frac{49\left(1+\pi+\sqrt{(1-\pi)^2}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^3}{2\pi}$$

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}+13+e-\frac{1}{\phi}=$$

$$13+e-\frac{1}{\phi}+\frac{-118+\left(-\frac{49\left(1+\sqrt{(1-\pi)^2}+\sqrt{-i\pi}\sqrt{i\pi}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^3}{2\pi}$$

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}+13+e-\frac{1}{\phi}=$$

$$13+e-\frac{1}{\phi}+\frac{-118+\left(-\frac{49\left(1+\pi e^{i\pi\lfloor(\pi-2\arg(\pi))/(2\pi)\rfloor}+\sqrt{(1-\pi)^2}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^3}{2\pi}$$

Series representations:

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}+13+e-\frac{1}{\phi}=$$

$$13+e-\frac{1}{\phi}+\frac{-118+\frac{343\left(1+\sum_{k=0}^{\infty}\left(\left(-1+(1-\pi)^2\right)^{-k}\binom{\frac{1}{2}}{k}\sqrt{-1+(1-\pi)^2}+\left(-1+\pi^2\right)^{-k}\binom{\frac{1}{2}}{k}\sqrt{-1+\pi^2}\right)\right)^3}{16\sqrt{2}\left((1-\pi)^2\pi^2\right)^{3/8}}}{2\pi}$$

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}+13+e-\frac{1}{\phi}=13+e-\frac{1}{\phi}+$$

$$\frac{-118+\frac{343\left(1+\sum_{k=0}^{\infty}\frac{(-1)^k\left((-2+\pi)\pi\right)^{-k}\left(-1+\pi^2\right)^{-k}\left(-\frac{1}{2}\right)_k\left(\left(-1+\pi^2\right)^k\sqrt{(-2+\pi)\pi}+\left((-2+\pi)\pi\right)^k\sqrt{-1+\pi^2}\right)}{k!}\right)^3}{16\sqrt{2}\left((1-\pi)^2\pi^2\right)^{3/8}}}{2\pi}$$

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3 - 89 - 34 + 5}{2\pi} + 13 + e - \frac{1}{\phi} =$$

$$13 + e - \frac{1}{\phi} + \frac{-118 + \frac{343\left(1+\sqrt{z_0}\sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k\left((\pi^2-z_0)^k+(1-2\pi+\pi^2-z_0)^k\right)z_0^{-k}}{k!}\right)^3}{16\sqrt{2}\left((1-\pi)^2\pi^2\right)^{3/8}}}{2\pi}$$

for not $((z_0 \in \mathbb{R} \text{ and } -\infty < z_0 \leq 0))$

1/(2Pi)((([-(((49/(-7)*1/2*(((1+sqrt(Pi^2)+sqrt((1-Pi)(1-Pi)))))))/(((16*Pi^2(1-Pi)(1-Pi))))^1/8]^3 -89-34+5)))-1+e-1/golden ratio

Input:

$$\frac{1}{2\pi}\left(\left(-\frac{-\frac{49}{7}\times\frac{1}{2}\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3 - 89 - 34 + 5\right) - 1 + e - \frac{1}{\phi}$$

ϕ is the golden ratio

Exact result:

$$-\frac{1}{\phi} - 1 + e + \frac{\frac{343\pi^{9/4}}{2\sqrt{2}(\pi-1)^{3/4}} - 118}{2\pi}$$

Decimal approximation:

125.572995803106974723976945605620424488960642447760813250 9...

125.5729958… 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:

$$-1 - \frac{2}{1+\sqrt{5}} + e - \frac{59}{\pi} + \frac{343\pi^{5/4}}{4\sqrt{2}(\pi-1)^{3/4}}$$

$$\frac{1}{2}\left(-1-\sqrt{5}\right) + e + \frac{\frac{343\pi^{9/4}}{2\sqrt{2}(\pi-1)^{3/4}} - 118}{2\pi}$$

$$\frac{4\sqrt{2}\, e\,(\pi-1)^{3/4}\,\pi\,\phi-\left(4\sqrt{2}\,(\pi-1)^{3/4}\,(59+\pi)-343\,\pi^{9/4}\right)\phi-4\sqrt{2}\,(\pi-1)^{3/4}\,\pi}{4\sqrt{2}\,(\pi-1)^{3/4}\,\pi\,\phi}$$

Alternative representations:

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}-1+e-\frac{1}{\phi}=$$
$$-1+e-\frac{1}{\phi}+\frac{-118+\left(-\frac{49\left(1+\pi+\sqrt{(1-\pi)^2}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^3}{2\pi}$$

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}-1+e-\frac{1}{\phi}=$$
$$-1+e-\frac{1}{\phi}+\frac{-118+\left(-\frac{49\left(1+\sqrt{(1-\pi)^2}+\sqrt{-i\pi}\,\sqrt{i\pi}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^3}{2\pi}$$

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}-1+e-\frac{1}{\phi}=$$
$$-1+e-\frac{1}{\phi}+\frac{-118+\left(-\frac{49\left(1+\pi\,e^{i\pi\lfloor(\pi-2\arg(\pi))/(2\pi)\rfloor}+\sqrt{(1-\pi)^2}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^3}{2\pi}$$

Series representations:

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}-1+e-\frac{1}{\phi}=$$
$$-1+e-\frac{1}{\phi}+\frac{-118+\frac{343\left(1+\sum_{k=0}^{\infty}\left(\left(-1+(1-\pi)^2\right)^{-k}\binom{\frac{1}{2}}{k}\sqrt{-1+(1-\pi)^2}+\left(-1+\pi^2\right)^{-k}\binom{\frac{1}{2}}{k}\sqrt{-1+\pi^2}\right)\right)^3}{16\sqrt{2}\left((1-\pi)^2\pi^2\right)^{3/8}}}{2\pi}$$

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}-1+e-\frac{1}{\phi}=-1+e-\frac{1}{\phi}+\frac{-118+\frac{343\left(1+\sum_{k=0}^{\infty}\frac{(-1)^k((-2+\pi)\pi)^{-k}\left(-1+\pi^2\right)^{-k}\left(-\frac{1}{2}\right)_k\left(\left(-1+\pi^2\right)^k\sqrt{(-2+\pi)\pi}+((-2+\pi)\pi)^k\sqrt{-1+\pi^2}\right)}{k!}\right)^3}{16\sqrt{2}\left((1-\pi)^2\pi^2\right)^{3/8}}}{2\pi}$$

$$\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-89-34+5}{2\pi}-1+e-\frac{1}{\phi}=-1+e-\frac{1}{\phi}+\frac{-118+\frac{343\left(1+\sqrt{z_0}\sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k\left(\left(\pi^2-z_0\right)^k+\left(1-2\pi+\pi^2-z_0\right)^k\right)z_0^{-k}}{k!}\right)^3}{16\sqrt{2}\left((1-\pi)^2\pi^2\right)^{3/8}}}{2\pi}$$

for not $((z_0\in\mathbb{R}$ and $-\infty<z_0\leq 0))$

13(((1/(2Pi)((([-(((49/(-7)*1/2*(((1+sqrt(Pi^2)+sqrt((1-Pi)(1-Pi))))))))/(((16*Pi^2(1-Pi)(1-Pi))))^1/8]^3 -144+21+5-1/golden ratio)))+e+(golden ratio))))+55

Input:

$$13\left(\frac{1}{2\pi}\left(\left(-\frac{-\frac{49}{7}\times\frac{1}{2}\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-144+21+5-\frac{1}{\phi}\right)+e+\phi\right)+55$$

ϕ is the golden ratio

Exact result:

$$13\left(\phi+\frac{-\frac{1}{\phi}-118+\frac{343\pi^{9/4}}{2\sqrt{2}(\pi-1)^{3/4}}}{2\pi}+e\right)+55$$

Decimal approximation:

1728.2391080118794317074678163301810928090748243656411453 09...

1728.239108011…

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

Alternate forms:

$$13\left(\phi - \frac{\frac{1}{\phi} + 118 - \frac{343\,\pi^{9/4}}{2\sqrt{2}\,(\pi-1)^{3/4}}}{2\pi} + e\right) + 55$$

$$13\,\phi - \frac{13}{2\,\pi\,\phi} + 55 + 13\,e - \frac{767}{\pi} + \frac{4459\,\pi^{5/4}}{4\sqrt{2}\,(\pi-1)^{3/4}}$$

$$\frac{123}{2} + \frac{13\sqrt{5}}{2} + 13\,e - \frac{767}{\pi} - \frac{13}{(1+\sqrt{5})\,\pi} + \frac{4459\,\pi^{5/4}}{4\sqrt{2}\,(\pi-1)^{3/4}}$$

Alternative representations:

$$13\left(\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2\,(1-\pi)(1-\pi)}}\right)^3 - 144 + 21 + 5 - \frac{1}{\phi}}{2\,\pi} + e + \phi\right) + 55 =$$

$$55 + 13\left(e + \phi + \frac{-118 - \frac{1}{\phi} + \left(-\frac{49\left(1+\pi+\sqrt{(1-\pi)^2}\right)}{2\,(-7)\sqrt[8]{16\,(1-\pi)^2\,\pi^2}}\right)^3}{2\,\pi}\right)$$

$$13\left(\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-144+21+5-\frac{1}{\phi}}{2\pi}+e+\phi\right)+55=$$

$$55+13\left(e+\phi+\frac{-118-\frac{1}{\phi}+\left(-\frac{49\left(1+\sqrt{(1-\pi)^2}+\sqrt{-i\pi}\sqrt{i\pi}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^3}{2\pi}\right)$$

$$13\left(\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-144+21+5-\frac{1}{\phi}}{2\pi}+e+\phi\right)+55=$$

$$55+13\left(e+\phi+\frac{-118-\frac{1}{\phi}+\left(-\frac{49\left(1+\pi e^{i\pi\lfloor(\pi-2\arg(\pi))/(2\pi)\rfloor}+\sqrt{(1-\pi)^2}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^3}{2\pi}\right)$$

Series representations:

$$13\left(\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-144+21+5-\frac{1}{\phi}}{2\pi}+e+\phi\right)+55=55+$$

$$13\left(e+\phi+\frac{-118-\frac{1}{\phi}+\frac{343\left(1+\sum_{k=0}^{\infty}\left(\left(-1+(1-\pi)^2\right)^{-k}\binom{\frac{1}{2}}{k}\sqrt{-1+(1-\pi)^2}+\left(-1+\pi^2\right)^{-k}\binom{\frac{1}{2}}{k}\sqrt{-1+\pi^2}\right)\right)^3}{16\sqrt{2}\left((1-\pi)^2\pi^2\right)^{3/8}}}{2\pi}\right)$$

$$13\left(\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-144+21+5-\frac{1}{\phi}}{2\pi}+e+\phi\right)+55=$$

$$55+13\left(e+\phi+\frac{1}{2\pi}\left(-118-\frac{1}{\phi}+\left(343\left(1+\sum_{k=0}^{\infty}\frac{1}{k!}(-1)^k((-2+\pi)\pi)^{-k}\left(-1+\pi^2\right)^{-k}\left(-\frac{1}{2}\right)_k\left(\left(-1+\pi^2\right)^k\sqrt{(-2+\pi)\pi}+((-2+\pi)\pi)^k\sqrt{-1+\pi^2}\right)\right)^3\right)\Big/\left(16\sqrt{2}\left((1-\pi)^2\pi^2\right)^{3/8}\right)\right)\right)$$

$$13\left(\frac{\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^3-144+21+5-\frac{1}{\phi}}{2\pi}+e+\phi\right)+55=$$

$$55+13\left(e+\phi+\frac{-118-\frac{1}{\phi}+\frac{343\left(1+\sqrt{z_0}\sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k\left(\left(\pi^2-z_0\right)^k+\left(1-2\pi+\pi^2-z_0\right)^k\right)z_0^{-k}}{k!}\right)^3}{16\sqrt{2}\left((1-\pi)^2\pi^2\right)^{3/8}}}{2\pi}\right)$$

for not $((z_0\in\mathbb{R}$ and $-\infty<z_0\leq 0))$

Or:

1/4[-(((49/(-7)*1/2*(((1+sqrt(Pi^2)+sqrt((1-Pi)(1-Pi))))))))/((((16*Pi^2(1-Pi)(1-Pi))))^1/8]^(e)+7

Input:

$$\frac{1}{4}\left(-\frac{-\frac{49}{7}\times\frac{1}{2}\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^e+7$$

Exact result:

$$7+2^{-2-e/2}\times 7^e(\pi-1)^{-e/4}\pi^{(3e)/4}$$

Decimal approximation:

125.7951101253192006536986789539332219905510284092274586534...

125.795110125… 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 form:

$$2^{-2-e/2} (\pi-1)^{-e/4} \left(7\times 2^{2+e/2} (\pi-1)^{e/4} + 7^e \pi^{(3 e)/4}\right)$$

Alternative representations:

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^e+7 = 7+\frac{1}{4}\left(-\frac{49\left(1+\pi+\sqrt{(1-\pi)^2}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^e$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^e+7 = 7+\frac{1}{4}\left(-\frac{49\left(1+\sqrt{(1-\pi)^2}+\sqrt{-i\pi}\sqrt{i\pi}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^e$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^e+7 = 7+\frac{1}{4}\left(-\frac{49\left(1+\pi e^{i\pi\lfloor(\pi-2\arg(\pi))/(2\pi)\rfloor}+\sqrt{(1-\pi)^2}\right)}{2(-7)\sqrt[8]{16(1-\pi)^2\pi^2}}\right)^e$$

Series representations:

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\pi^2(1-\pi)(1-\pi)}}\right)^e+7 = \frac{1}{4}\left(-1+4\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}\right)^{-e/4}\left(14^e\left(\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}\right)^{(3e)/4}+28\left(-1+4\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}\right)^{e/4}\right)$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+7=2^{-2-1/2\times\sum_{k=0}^{\infty}1/k!}\,(-1+\pi)^{-1/4\times\sum_{k=0}^{\infty}1/k!}\left(7\times 2^{2+1/2\times\sum_{k=0}^{\infty}1/k!}\,(-1+\pi)^{1/4\times\sum_{k=0}^{\infty}1/k!}+7^{\sum_{k=0}^{\infty}1/k!}\,\pi^{3/4\times\sum_{k=0}^{\infty}1/k!}\right)$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+7=2^{-2-1/\left(2\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}\right)}\,(-1+\pi)^{-1/\left(4\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}\right)}\left(7\times 2^{2+1/\left(2\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}\right)}\sqrt[4\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}]{-1+\pi}+\sqrt[\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}]{7}\,\pi^{3/\left(4\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}\right)}\right)$$

Integral representations:

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+7=\frac{1}{4}\left(-1+4\int_0^1\sqrt{1-t^2}\,dt\right)^{-e/4}\left(14^e\left(\int_0^1\sqrt{1-t^2}\,dt\right)^{(3e)/4}+28\left(-1+4\int_0^1\sqrt{1-t^2}\,dt\right)^{e/4}\right)$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+7=\frac{1}{4}\left(-1+2\int_0^\infty\frac{1}{1+t^2}\,dt\right)^{-e/4}\left(2^{e/4}\times 7^e\left(\int_0^\infty\frac{1}{1+t^2}\,dt\right)^{(3e)/4}+28\left(-1+2\int_0^\infty\frac{1}{1+t^2}\,dt\right)^{e/4}\right)$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+7=\frac{1}{4}\left(-1+2\int_0^\infty\frac{\sin(t)}{t}\,dt\right)^{-e/4}\left(2^{e/4}\times 7^e\left(\int_0^\infty\frac{\sin(t)}{t}\,dt\right)^{(3e)/4}+28\left(-1+2\int_0^\infty\frac{\sin(t)}{t}\,dt\right)^{e/4}\right)$$

And:

1/4[-(((49/(-7)*1/2*(((1+sqrt(Pi^2)+sqrt((1-Pi)(1-Pi)))))))/(((16*Pi^2(1-Pi)(1-Pi))))^1/8]^(e)+21

Input:

$$\frac{1}{4}\left(-\frac{-\frac{49}{7}\times\frac{1}{2}\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)}{\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+21$$

Exact result:

$$21+2^{-2-e/2}\times 7^e\,(\pi-1)^{-e/4}\,\pi^{(3\,e)/4}$$

Decimal approximation:

139.7951101253192006536986789539332219905510284092274586534...

139.795110125… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternate form:

$$2^{-2-e/2}\,(\pi-1)^{-e/4}\left(21\times 2^{2+e/2}\,(\pi-1)^{e/4}+7^e\,\pi^{(3\,e)/4}\right)$$

Alternative representations:

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+21=21+\frac{1}{4}\left(-\frac{49\left(1+\pi+\sqrt{(1-\pi)^2}\right)}{2\,(-7)\sqrt[8]{16\,(1-\pi)^2\,\pi^2}}\right)^e$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+21=$$
$$21+\frac{1}{4}\left(-\frac{49\left(1+\sqrt{(1-\pi)^2}+\sqrt{-i\,\pi}\,\sqrt{i\,\pi}\right)}{2\,(-7)\sqrt[8]{16\,(1-\pi)^2\,\pi^2}}\right)^e$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+21=$$
$$21+\frac{1}{4}\left(-\frac{49\left(1+\pi\,e^{i\,\pi\,\lfloor(\pi-2\arg(\pi))/(2\,\pi)\rfloor}+\sqrt{(1-\pi)^2}\right)}{2\,(-7)\sqrt[8]{16\,(1-\pi)^2\,\pi^2}}\right)^e$$

Series representations:

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+21=$$
$$\frac{1}{4}\left(-1+4\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}\right)^{-e/4}\left(14^e\left(\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}\right)^{(3e)/4}+84\left(-1+4\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}\right)^{e/4}\right)$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+21=2^{-2-1/2\times\sum_{k=0}^{\infty}1/k!}\,(-1+\pi)^{-1/4\times\sum_{k=0}^{\infty}1/k!}$$
$$\left(21\times 2^{2+1/2\times\sum_{k=0}^{\infty}1/k!}\,(-1+\pi)^{1/4\times\sum_{k=0}^{\infty}1/k!}+7^{\sum_{k=0}^{\infty}1/k!}\,\pi^{3/4\times\sum_{k=0}^{\infty}1/k!}\right)$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+21=$$
$$2^{-2-1/\left(2\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}\right)}\,(-1+\pi)^{-1/\left(4\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}\right)}$$
$$\left(21\times 2^{2+1/\left(2\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}\right)}\sqrt[4\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}]{-1+\pi}+\sqrt[\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}]{7}\,\pi^{3/\left(4\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}\right)}\right)$$

Integral representations:

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+21=\frac{1}{4}\left(-1+4\int_0^1\sqrt{1-t^2}\,dt\right)^{-e/4}$$
$$\left(14^e\left(\int_0^1\sqrt{1-t^2}\,dt\right)^{(3e)/4}+84\left(-1+4\int_0^1\sqrt{1-t^2}\,dt\right)^{e/4}\right)$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+21=\frac{1}{4}\left(-1+2\int_0^{\infty}\frac{1}{1+t^2}\,dt\right)^{-e/4}$$
$$\left(2^{e/4}\times 7^e\left(\int_0^{\infty}\frac{1}{1+t^2}\,dt\right)^{(3e)/4}+84\left(-1+2\int_0^{\infty}\frac{1}{1+t^2}\,dt\right)^{e/4}\right)$$

$$\frac{1}{4}\left(\frac{-\left(49\left(1+\sqrt{\pi^2}+\sqrt{(1-\pi)(1-\pi)}\right)\right)}{(-7\times 2)\sqrt[8]{16\,\pi^2\,(1-\pi)(1-\pi)}}\right)^e+21=\frac{1}{4}\left(-1+2\int_0^\infty\frac{\sin(t)}{t}\,dt\right)^{-e/4}$$

$$\left(2^{e/4}\times 7^e\left(\int_0^\infty\frac{\sin(t)}{t}\,dt\right)^{(3\,e)/4}+84\left(-1+2\int_0^\infty\frac{\sin(t)}{t}\,dt\right)^{e/4}\right)$$

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References

Manuscript Book Of Srinivasa Ramanujan Volume 1

Manuscript Book Of Srinivasa Ramanujan Volume 2