New mathematical connections between various solutions of Ramanujan's equations and some parameters of Particle Physics and Cosmology (value of Cosmological Constant). XIII

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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, principally the value of Cosmological Constant

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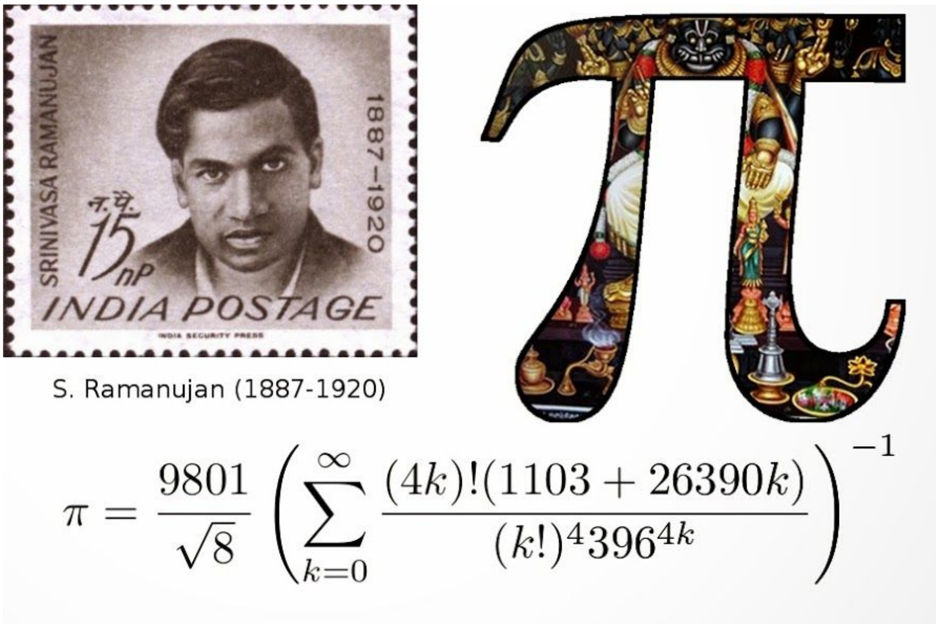
From:

https://www.pinterest.co.uk/pin/766245324080859674/



From:

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

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

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

The constant π also plays an analogous role in four-dimensional potentials associated with Einstein's equations, a fundamental formula which forms the basis of the general theory of relativity and describes the fundamental interaction of gravitation as a result of spacetime being curved by matter and energy:[169]

$$R_{\mu\nu} - \frac{1}{2} R g_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu},$$

where $R_{\mu\nu}$ is the Ricci curvature tensor, R is the scalar curvature, $g_{\mu\nu}$ is the metric tensor, Λ is the cosmological constant, G is Newton's gravitational constant, c is the speed of light in vacuum, and $T_{\mu\nu}$ is the stress–energy tensor. The left-hand side of Einstein's equation is a non-linear analog of the Laplacian of the metric tensor, and reduces to that in the weak field limit, with the $\mathbf{\Lambda g}$ term playing the role of a Lagrange multiplier, and the right-hand side is the analog of the distribution function, times 8π.

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 other baryons and mesons.

Thus, solutions of Ramanujan equations, connected with the <u>mass of candidate glueball f_0(1710) meson</u>, <u>the mass of the π meson (139.57 MeV),</u> the value of the dilaton and that of "the dilaton mass calculated as a type of <u>Higgs boson that is equal about to 125 GeV</u>", have been described and highlighted. Furthermore, we have obtained also <u>the values of some black hole entropies and the value of the Cosmological Constant.</u>

Is our opinion, that the possible connections between the mathematical developments of some Rogers-Ramanujan continued fractions, , the Higgs boson mass itself and the like-particle solutions (masses), are fundamental.

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

From:

MANUSCRIPT BOOK 1 OF SRINIVASA RAMANUJAN

Further, we have that:

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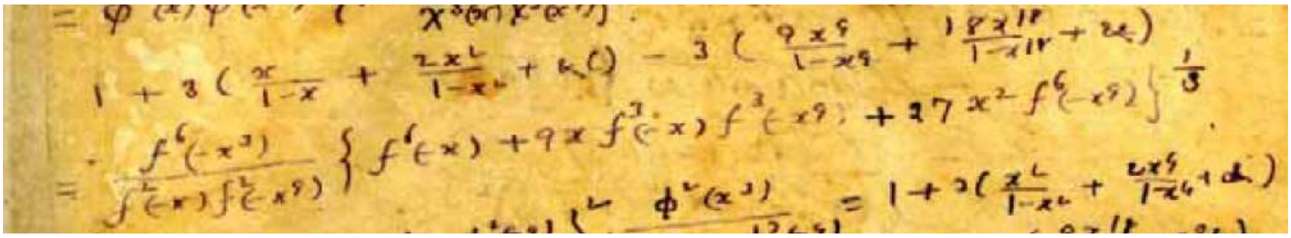


For x = 2, we obtain:

1+3((2/(1-2)+(2*2^2)/(1-2^2)))-3((9*2^9)/(1-2^9)+(18*2^18)/(1-2^18))

Input:

$$1+3\left(\frac{2}{1-2}+\frac{2\times 2^2}{1-2^2}\right)-3\left(\frac{9\times 2^9}{1-2^9}+\frac{18\times 2^{18}}{1-2^{18}}\right)$$

Exact result:

$$\frac{660727}{9709}$$

Decimal approximation:

68.05304356782366876094345452672777834998455041713873725409...

68.0530435678236….

And for:

f = 3.024406288e-13 and x = 2

We obtain:

[((((3.024406288e-13)^6*(-2)+9(2)*(3.024406288e-13)^3*(-2)*(3.024406288e-13)^3*(-2)^9+27*(-2)^2*(3.024406288e-13)^6*(-2)^9)))]^1/3

Input interpretation:

$$\left((3.024406288\times10^{-13})^6\times(-2)+9\times2\,(3.024406288\times10^{-13})^3\times(-2)\,(3.024406288\times10^{-13})^3\,(-2)^9+27\,(-2)^2\,(3.024406288\times10^{-13})^6\,(-2)^9\right)\wedge(1/3)$$

Result:

$$1.52215522\ldots\times10^{-24}+2.63645018\ldots\times10^{-24}\,i$$

Polar coordinates:

$r = 3.04431\times10^{-24}$ (radius), $\theta = 60°$ (angle)

$3.04431*10^{-24}$ partial result

From which:

((((3.024406288e-13)^6(-2)^3))) / ((((3.024406288e-13)^2(-2)*(3.024406288e-13)^2(-2)^9))) *(((3.04431×10^-24)))

Input interpretation:

$$\frac{(3.024406288\times10^{-13})^6\,(-2)^3}{(3.024406288\times10^{-13})^2\times(-2)\,(3.024406288\times10^{-13})^2\,(-2)^9}\times3.04431\times10^{-24}$$

Result:

$$-2.1755004089382474427038\times10^{-51}$$

$-2.1755004089382474427038*10^{-51}$ final result

Thence, we have the following equation:

68.0530435678236x = ((((3.024406288e-13)^6(-2)^3))) / ((((3.024406288e-13)^2(-2)*(3.024406288e-13)^2(-2)^9))) *(((3.04431×10^-24)))

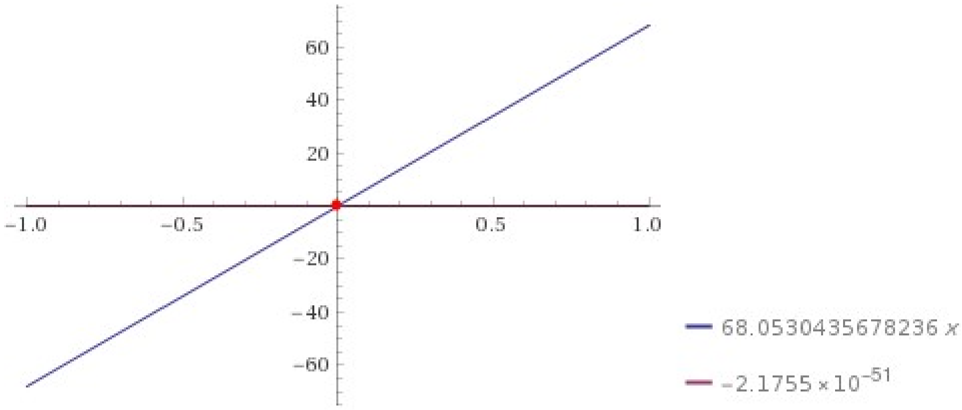
Input interpretation:

$$68.0530435678236\,x=\frac{(3.024406288\times10^{-13})^6\,(-2)^3}{(3.024406288\times10^{-13})^2\times(-2)\,(3.024406288\times10^{-13})^2\,(-2)^9}\times3.04431\times10^{-24}$$

Result:

$68.0530435678236\, x = -2.1755\times 10^{-51}$

Plot:



Alternate form:

$68.0530435678236\, x + 2.1755\times 10^{-51} = 0$

Solution:

$x \approx -3.19677\times 10^{-53}$

$-3.19677*10^{-53}$

From:

On the relation between mass of a pion, fundamental physical constants and cosmological parameters

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$$m_x = \frac{m_\pi^3}{M_P^2} = \frac{\hbar}{c^2}\frac{H\Omega_v}{\sqrt{\Omega - 1}} = 2.93\times 10^{-68}\, kg \qquad (11)$$

mass m_x is nearly identical to a recently conjectured mass of the graviton

We have that:

(1/euler number)* -(-3.19677*10^-53)/(4.04437e+14)

Input interpretation:

$$\frac{1}{e}\left(-\frac{-3.19677\times 10^{-53}}{4.04437\times 10^{14}}\right)$$

Result:

$2.90781\ldots \times 10^{-68}$

2.90781…*10^-68 value very near to the result of the above equation (11)

Now, we have that:

Another striking observation is that the mass of the neutrino is close to the geometrical mean of the Plank mass M_P and the mass m_x:

$$m_\nu = \sqrt{M_P m_x} = 2.53\times 10^{-38}\,kg \tag{12}$$

From the following Ramanujan mock theta function:

$$1+\frac{0.449329}{1-0.449329}+\frac{0.449329^3}{(1-0.449329^2)(1-0.449329^3)}+\frac{0.449329^5}{(1-0.449329^3)(1-0.449329^4)(1-0.449329^5)}$$

that is equal to $\chi(q)$ = **1.962364415...**, we obtain:

1.962364415* -(-3.19677*10^-53)*(4.04437e+14)

Input interpretation:

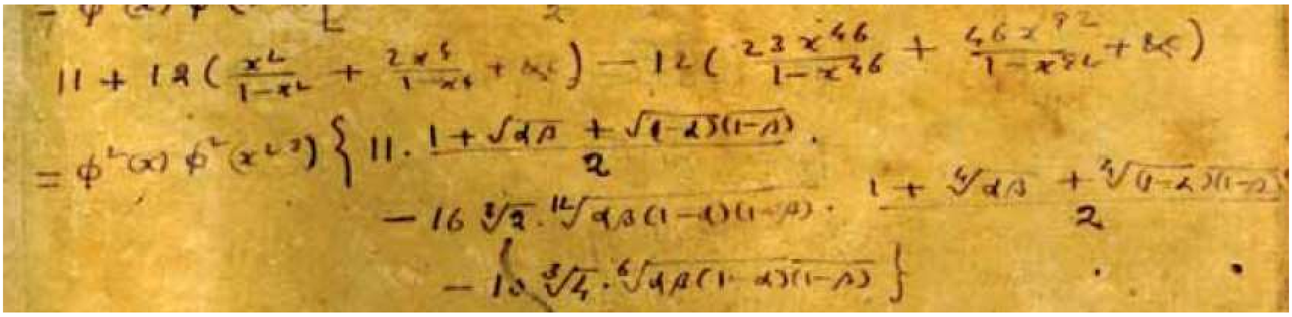
$$-3.19677\times 10^{-53}\times 4.04437\times 10^{14}\times(-1.962364415)$$

Result:

$2.537125387640518783\,35\times 10^{-38}$

2.537125387640518783335*10^{-38} value practically equal to the result of the above equation (13)

Now, we have that:



$$11+12\left(\frac{x^2}{1-x^2}+\frac{2x^4}{1-x^4}+\&c\right)-12\left(\frac{23x^{46}}{1-x^{46}}+\frac{46x^{92}}{1-x^{92}}+\&c\right)$$
$$=\phi^2(x)\,\phi^2(x^{23})\Big\{11\cdot\frac{1+\sqrt{\alpha\beta}+\sqrt{(1-\alpha)(1-\beta)}}{2}$$
$$-16\sqrt[3]{2}\cdot\sqrt[12]{\alpha\beta(1-\alpha)(1-\beta)}\cdot\frac{1+\sqrt[4]{\alpha\beta}+\sqrt[4]{(1-\alpha)(1-\beta)}}{2}$$
$$-16\sqrt[3]{4}\cdot\sqrt[6]{\alpha\beta(1-\alpha)(1-\beta)}\Big\}.$$

For x = 2; α = β = π; and 2.91563611528 = ϕ; 0.0395671 = ψ, we obtain:

11+12(((2^2/(1-2^2)+(2*2^4)/(1-2^4))))-12((((23*2^46)/(1-2^46)+(46*2^92)/(1-2^92))))

Input:

$$11+12\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-12\left(\frac{23\times 2^{46}}{1-2^{46}}+\frac{46\times 2^{92}}{1-2^{92}}\right)$$

Exact result:

$$\frac{263\,235\,569\,953\,644\,556\,439\,442\,644\,011}{330\,117\,343\,809\,434\,739\,973\,099\,793}$$

Decimal approximation:

797.400000000003922195901395920239276963845253700667643233 8...

797.4......

We note that:

[11+12(((2^2/(1-2^2)+(2*2^4)/(1-2^4))))-12((((23*2^46)/(1-2^46)+(46*2^92)/(1-2^92))))] - 11 – 4

where 11 and 4 are Lucas numbers

Input:

$$\left(11+12\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-12\left(\frac{23\times 2^{46}}{1-2^{46}}+\frac{46\times 2^{92}}{1-2^{92}}\right)\right)-11-4$$

Exact result:

$$\frac{258\,283\,809\,796\,503\,035\,339\,846\,147\,116}{330\,117\,343\,809\,434\,739\,973\,099\,793}$$

Decimal approximation:

782.40000000000392219590139592023927696384525370066764323 38...

782.4..... result practically equal to the rest mass in MeV of Omega meson 782.65

And:

(2.9156361)^2*2*(2.9156361)^2*2^27*((((((((11/2*(1+Pi+(sqrt((1-Pi)^2))-16(2)^1/3*(Pi^2(1-Pi)^2)^1/12*1/2*(1+(Pi^2)^1/4+((1-Pi)^2)^1/4-10(4)^1/3*(Pi^2*(1-Pi)^2)^1/6))))))))))

Input interpretation:

$$2.9156361^2\times 2\times 2.9156361^2\times 2^{27}\left(\frac{11}{2}\left(1+\pi+\sqrt{(1-\pi)^2}-16\sqrt[3]{2}\sqrt[12]{\pi^2(1-\pi)^2}\times\frac{1}{2}\left(1+\sqrt[4]{\pi^2}+\sqrt[4]{(1-\pi)^2}-10\sqrt[3]{4}\sqrt[6]{\pi^2(1-\pi)^2}\right)\right)\right)$$

Result:

$3.869068... \times 10^{13}$

$3.869068...*10^{13}$

Alternative representations:

$$\frac{1}{2}\left(2.91564^2\left(1+\pi+\sqrt{(1-\pi)^2}-\frac{16}{2}\sqrt[3]{2}\sqrt[12]{\pi^2(1-\pi)^2}\left(1+\sqrt[4]{\pi^2}+\sqrt[4]{(1-\pi)^2}-10\sqrt[3]{4}\sqrt[6]{\pi^2(1-\pi)^2}\right)\right)2\left(2.91564^2\times 2^{27}\right)\right)11=11\times 2^{27}\left(2.91564^2\right)^2\left(2\pi-8\sqrt[3]{2}\left(1+\sqrt[4]{(1-\pi)^2}+\sqrt[4]{\pi^2}-10\sqrt[3]{4}\sqrt[6]{(1-\pi)^2\pi^2}\right)\sqrt[12]{(1-\pi)^2\pi^2}\right)$$

$$\frac{1}{2}\left(2.91564^2\left(1+\pi+\sqrt{(1-\pi)^2}-\frac{16}{2}\sqrt[3]{2}\sqrt[12]{\pi^2(1-\pi)^2}\left(1+\sqrt[4]{\pi^2}+\sqrt[4]{(1-\pi)^2}-10\sqrt[3]{4}\sqrt[6]{\pi^2(1-\pi)^2}\right)\right)2\left(2.91564^2\times 2^{27}\right)\right)11=11\times 2^{27}\left(2.91564^2\right)^2\left(1+\pi-8\sqrt[3]{2}\left(1+\sqrt[4]{(1-\pi)^2}+\sqrt[4]{\pi^2}-10\sqrt[3]{4}\sqrt[6]{(1-\pi)^2\pi^2}\right)\sqrt[12]{(1-\pi)^2\pi^2}+\sqrt{-i(1-\pi)}\sqrt{i(1-\pi)}\right)$$

$$\frac{1}{2}\left(2.91564^2\left(1+\pi+\sqrt{(1-\pi)^2}-\frac{16}{2}\sqrt[3]{2}\sqrt[12]{\pi^2(1-\pi)^2}\left(1+\sqrt[4]{\pi^2}+\sqrt[4]{(1-\pi)^2}-10\sqrt[3]{4}\sqrt[6]{\pi^2(1-\pi)^2}\right)\right)2\left(2.91564^2\times 2^{27}\right)\right)11 =$$
$$11\times 2^{27}\left(2.91564^2\right)^2\left(1+\pi+(1-\pi)\,e^{i\pi\lfloor(\pi-2\arg(1-\pi))/(2\pi)\rfloor}-8\sqrt[3]{2}\left(1+\sqrt[4]{(1-\pi)^2}+\sqrt[4]{\pi^2}-10\sqrt[3]{4}\sqrt[6]{(1-\pi)^2\pi^2}\right)\sqrt[12]{(1-\pi)^2\pi^2}\right)$$

Series representations:

$$\frac{1}{2}\left(2.91564^2\left(1+\pi+\sqrt{(1-\pi)^2}-\frac{16}{2}\sqrt[3]{2}\sqrt[12]{\pi^2(1-\pi)^2}\left(1+\sqrt[4]{\pi^2}+\sqrt[4]{(1-\pi)^2}-10\sqrt[3]{4}\sqrt[6]{\pi^2(1-\pi)^2}\right)\right)2\left(2.91564^2\times 2^{27}\right)\right)11 =$$
$$1.06693\times10^{11}+1.06693\times10^{11}\pi-1.0754\times10^{12}\sqrt[12]{(1-\pi)^2\pi^2}-1.0754\times10^{12}\sqrt[4]{(1-\pi)^2}\sqrt[12]{(1-\pi)^2\pi^2}-1.0754\times10^{12}\sqrt[4]{\pi^2}\sqrt[12]{(1-\pi)^2\pi^2}+1.70709\times10^{13}\sqrt[4]{(1-\pi)^2\pi^2}+1.06693\times10^{11}\sqrt{-1+(1-\pi)^2}\sum_{k=0}^{\infty}((-2+\pi)\pi)^{-k}\binom{\frac{1}{2}}{k}$$

$$\frac{1}{2}\left(2.91564^2\left(1+\pi+\sqrt{(1-\pi)^2}-\frac{16}{2}\sqrt[3]{2}\sqrt[12]{\pi^2(1-\pi)^2}\left(1+\sqrt[4]{\pi^2}+\sqrt[4]{(1-\pi)^2}-10\sqrt[3]{4}\sqrt[6]{\pi^2(1-\pi)^2}\right)\right)2\left(2.91564^2\times 2^{27}\right)\right)11 =$$
$$1.06693\times10^{11}+1.06693\times10^{11}\pi-1.0754\times10^{12}\sqrt[12]{(1-\pi)^2\pi^2}-1.0754\times10^{12}\sqrt[4]{(1-\pi)^2}\sqrt[12]{(1-\pi)^2\pi^2}-1.0754\times10^{12}\sqrt[4]{\pi^2}\sqrt[12]{(1-\pi)^2\pi^2}+1.70709\times10^{13}\sqrt[4]{(1-\pi)^2\pi^2}+1.06693\times10^{11}\sqrt{-1+(1-\pi)^2}\sum_{k=0}^{\infty}\frac{(-1)^k((-2+\pi)\pi)^{-k}\left(-\frac{1}{2}\right)_k}{k!}$$

$$\frac{1}{2}\left(2.91564^2\left(1+\pi+\sqrt{(1-\pi)^2}-\frac{16}{2}\sqrt[3]{2}\sqrt[12]{\pi^2(1-\pi)^2}\left(1+\sqrt[4]{\pi^2}+\sqrt[4]{(1-\pi)^2}-10\sqrt[3]{4}\sqrt[6]{\pi^2(1-\pi)^2}\right)\right)2\left(2.91564^2\times 2^{27}\right)\right)$$
$$11 = 1.06693\times10^{11}+1.06693\times10^{11}\pi-1.0754\times10^{12}\sqrt[12]{(1-\pi)^2\pi^2}-1.0754\times10^{12}\sqrt[4]{(1-\pi)^2}\sqrt[12]{(1-\pi)^2\pi^2}-1.0754\times10^{12}\sqrt[4]{\pi^2}\sqrt[12]{(1-\pi)^2\pi^2}+1.70709\times10^{13}\sqrt[4]{(1-\pi)^2\pi^2}+1.06693\times10^{11}\sqrt{z_0}\sum_{k=0}^{\infty}\frac{(-1)^k\left(-\frac{1}{2}\right)_k\left(1-2\pi+\pi^2-z_0\right)^k z_0^{-k}}{k!}$$

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

Thence, we have the following equation:

(((11+12(((2^2/(1-2^2)+(2*2^4)/(1-2^4))))-12((((23*2^46)/(1-2^46)+(46*2^92)/(1-2^92)))))))x = 3.869068e+13

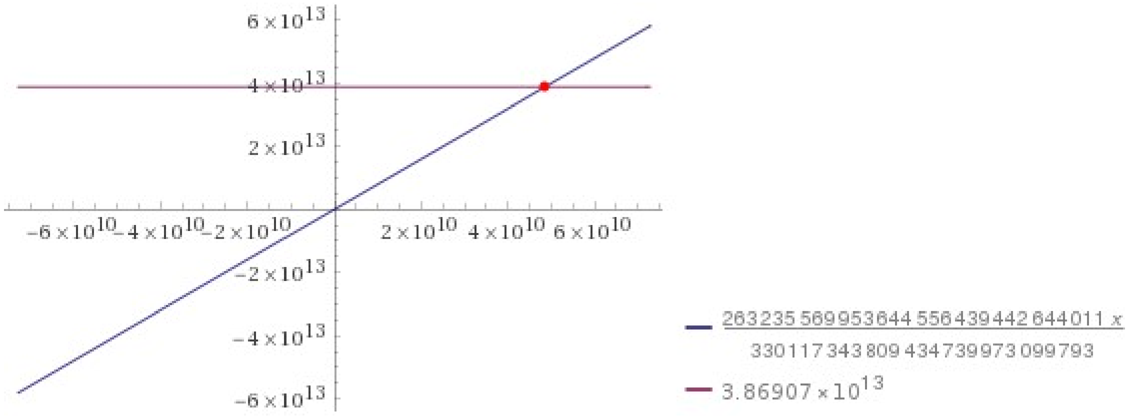
Input interpretation:

$$\left(11+12\left(\frac{2^2}{1-2^2}+\frac{2\times2^4}{1-2^4}\right)-12\left(\frac{23\times2^{46}}{1-2^{46}}+\frac{46\times2^{92}}{1-2^{92}}\right)\right)x = 3.869068\times10^{13}$$

Result:

$$\frac{263\,235\,569\,953\,644\,556\,439\,442\,644\,011\,x}{330\,117\,343\,809\,434\,739\,973\,099\,793} = 3.86907\times10^{13}$$

Plot:



Alternate form:

$$\frac{263\,235\,569\,953\,644\,556\,439\,442\,644\,011\,x}{330\,117\,343\,809\,434\,739\,973\,099\,793} - 3.86907\times10^{13} = 0$$

Solution:

$x \approx 4.8521\times10^{10}$

$4.8521*10^{10}$

From this result, performing the 4096th root of the inverse, we have that:

(1/((4.8521×10^10)))^1/4096

Input interpretation:

$$\sqrt[4096]{\frac{1}{4.8521\times10^{10}}}$$

Result:

0.99401086...

0.99401086.... result very near to the value of the following Rogers-Ramanujan continued fraction:

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

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

and from the following calculations:

2*sqrt(((log base 0.99401086 (1/((4.8521×10^10))))))-Pi+1/golden ratio

Input interpretation:

$$2\sqrt{\log_{0.99401086}\left(\frac{1}{4.8521\times 10^{10}}\right)}-\pi+\frac{1}{\phi}$$

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

ϕ is the golden ratio

Result:

125.476...

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

and:

2*sqrt(((log base 0.99401086 (1/((4.8521×10^10))))))+11+1/golden ratio

where 11 is a Lucas number

Input interpretation:

$$2\sqrt{\log_{0.99401086}\left(\frac{1}{4.8521\times 10^{10}}\right)}+11+\frac{1}{\phi}$$

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

ϕ is the golden ratio

Result:

139.618...

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

Now, we have that:

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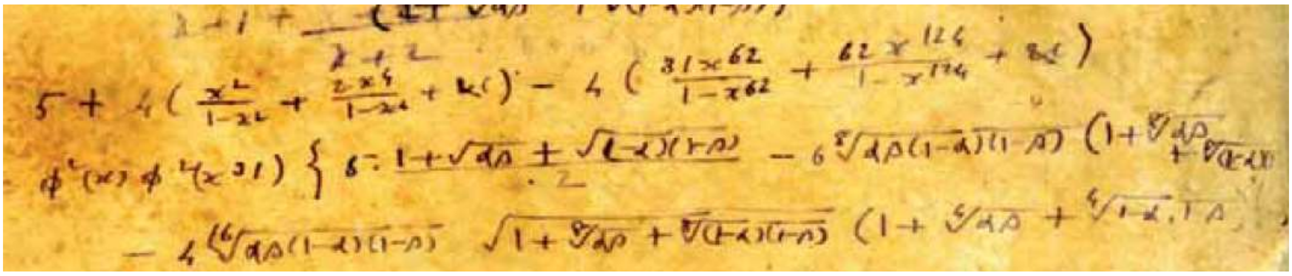

For x = 2, we obtain:

5+4(((2^2/(1-2^2)+(2*2^4)/(1-2^4))))-4((((31*2^62)/(1-2^62)+(62*2^124)/(1-2^124))))

Input:

$$5+4\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)$$

Exact result:

$$\frac{514866125727319947395068128497011253285}{1417843195503910264430727530965700881}$$

Decimal approximation:

363.13333333333333333602215472109738433142095187351435258965...

363.13333...

Performing the following calculations (4 is a Lucas number)

1/3[5+4(((2^2/(1-2^2)+(2*2^4)/(1-2^4))))-4((((31*2^62)/(1-2^62)+(62*2^124)/(1-2^124))))]+4+1/golden ratio

we obtain:

Input:

$$\frac{1}{3}\left(5+4\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+4+\frac{1}{\phi}$$

ϕ is the golden ratio

Result:

$$\frac{1}{\phi}+\frac{531\,880\,244\,073\,366\,870\,568\,236\,858\,868\,599\,663\,857}{4\,253\,529\,586\,511\,730\,793\,292\,182\,592\,897\,102\,643}$$

Decimal approximation:

125.66247843319433930161176923802358588912348209152027149 43...

125.662478433… 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:

$$\left(1\,059\,506\,958\,560\,222\,010\,343\,181\,535\,144\,302\,225\,071+4\,253\,529\,586\,511\,730\,793\,292\,182\,592\,897\,102\,643\sqrt{5}\right)/8\,507\,059\,173\,023\,461\,586\,584\,365\,185\,794\,205\,286$$

$$(531\,880\,244\,073\,366\,870\,568\,236\,858\,868\,599\,663\,857\,\phi+4\,253\,529\,586\,511\,730\,793\,292\,182\,592\,897\,102\,643)/(4\,253\,529\,586\,511\,730\,793\,292\,182\,592\,897\,102\,643\,\phi)$$

$$\frac{\sqrt{5}}{2}+\frac{1\,059\,506\,958\,560\,222\,010\,343\,181\,535\,144\,302\,225\,071}{8\,507\,059\,173\,023\,461\,586\,584\,365\,185\,794\,205\,286}$$

Alternative representations:

$$\frac{1}{3}\left(5+4\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+4+\frac{1}{\phi}=$$
$$4+\frac{1}{3}\left(5+4\left(-\frac{4}{3}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+\frac{1}{2\sin(54^\circ)}$$

$$\frac{1}{3}\left(5+4\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+4+\frac{1}{\phi}=$$
$$4+-\frac{1}{2\cos(216\,°)}+\frac{1}{3}\left(5+4\left(-\frac{4}{3}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)$$

$$\frac{1}{3}\left(5+4\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+4+\frac{1}{\phi}=$$
$$4+\frac{1}{3}\left(5+4\left(-\frac{4}{3}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+-\frac{1}{2\sin(666\,°)}$$

And:

1/3[5+4(((2^2/(1-2^2)+(2*2^4)/(1-2^4))))-4((((31*2^62)/(1-2^62)+(62*2^124)/(1-2^124))))]+18+1/golden ratio

where 18 is a Lucas number

Input:

$$\frac{1}{3}\left(5+4\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+18+\frac{1}{\phi}$$

ϕ is the golden ratio

Result:

$$\frac{1}{\phi}+\frac{591429658284531101674327415169159100859}{4253529586511730793292182592897102643}$$

Decimal approximation:

139.66247843319433930161176923802358588912348209152027149 43...

139.6624784… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternate forms:

$$\left(1\,178\,605\,786\,982\,550\,472\,555\,362\,647\,745\,421\,099\,075 + 4\,253\,529\,586\,511\,730\,793\,292\,182\,592\,897\,102\,643\sqrt{5}\right) / 8\,507\,059\,173\,023\,461\,586\,584\,365\,185\,794\,205\,286$$

$$(591\,429\,658\,284\,531\,101\,674\,327\,415\,169\,159\,100\,859\,\phi + 4\,253\,529\,586\,511\,730\,793\,292\,182\,592\,897\,102\,643) / (4\,253\,529\,586\,511\,730\,793\,292\,182\,592\,897\,102\,643\,\phi)$$

$$\frac{\sqrt{5}}{2} + \frac{1\,178\,605\,786\,982\,550\,472\,555\,362\,647\,745\,421\,099\,075}{8\,507\,059\,173\,023\,461\,586\,584\,365\,185\,794\,205\,286}$$

Alternative representations:

$$\frac{1}{3}\left(5+4\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+18+\frac{1}{\phi} = 18+\frac{1}{3}\left(5+4\left(-\frac{4}{3}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+\frac{1}{2\sin(54^\circ)}$$

$$\frac{1}{3}\left(5+4\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+18+\frac{1}{\phi} = 18+-\frac{1}{2\cos(216^\circ)}+\frac{1}{3}\left(5+4\left(-\frac{4}{3}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)$$

$$\frac{1}{3}\left(5+4\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+18+\frac{1}{\phi} = 18+\frac{1}{3}\left(5+4\left(-\frac{4}{3}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+-\frac{1}{2\sin(666^\circ)}$$

From the following calculations, we obtain also:

1/10^55*(((3[5+4(((2^2/(1-2^2)+(2*2^4)/(1-2^4))))-4((((31*2^62)/(1-2^62)+(62*2^124)/(1-2^124))))]+16)))

Input:

$$\frac{1}{10^{55}}\left(3\left(5+4\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-4\left(\frac{31\times 2^{62}}{1-2^{62}}+\frac{62\times 2^{124}}{1-2^{124}}\right)\right)+16\right)$$

Exact result:

1 567 283 868 310 022 406 416 096 025 986 484 973 951 /
14 178 431 955 039 102 644 307 275 309 657 008 810 000 000 000 000 000 000 000 000 \
000 000 000 000 000 000 000 000 000 000 000

Decimal approximation:

$1.105400000000000000008066464163292152994262855620543\ldots \times 10^{-52}$

$1.1054\ldots * 10^{-52}$ result practically equal to the value of Cosmological Constant $1.1056 * 10^{-52}$ m^{-2}

Now:

For x = 2, we obtain:

1+6(((2^2)/(1-2^2)+(2*2^4)/(1-2^4)))-6(((5*2^10)/(1-2^10)+(10*2^20)/(1-2^20)))

Input:

$$1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)$$

Exact result:

$$\frac{981877}{13981}$$

Decimal approximation:

$70.229382733710035047564551891853229382733710035047564551 89\ldots$

70.2293827...

And:

2*((1+6(((2^2)/(1-2^2)+(2*2^4)/(1-2^4)))-6(((5*2^10)/(1-2^10)+(10*2^20)/(1-2^20)))))-1/golden ratio

Input:

$$2\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)-\frac{1}{\phi}$$

ϕ is the golden ratio

Exact result:

$$\frac{1963754}{13981} - \frac{1}{\phi}$$

Decimal approximation:

139.8407314786701752469245169493408206477471108902893662416...

139.840731478... result practically equal to the rest mass of Pion meson 139.57 MeV

And also:

24*((1+6(((2^2)/(1-2^2)+(2*2^4)/(1-2^4)))-6(((5*2^10)/(1-2^10)+(10*2^20)/(1-2^20)))))+47-4

where 47 and 4 are Lucas numbers

Input:

$$24\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)+47-4$$

Exact result:

$$\frac{24166231}{13981}$$

Decimal approximation:

1728.505185609040841141549245404477505185609040841141549245...

1728.5051856...

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

From the following calculations, we obtain:

((((123+29+2e)/10^56*((1+6(((2^2)/(1-2^2)+(2*2^4)/(1-2^4)))-6(((5*2^10)/(1-2^10)+(10*2^20)/(1-2^20)))))))) where 123 and 29 are Lucas numbers

Input:

$$\frac{123+29+2e}{10^{56}}\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)$$

Result:

$$\frac{981\,877\,(152+2e)}{1\,398\,100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

$1.105667268534180415686429482605097463633651276798810 3\ldots\times 10^{-52}$

1.1056672…*10^{-52} result practically equal to the value of Cosmological Constant 1.1056*10^{-52} m^{-2}

Property:

$$\frac{981\,877\,(152+2e)}{1\,398\,100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$ is a transcendental number

Alternate forms:

$((76+e)\,981\,877)/(13\,981\times 50\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000)$

$$\frac{981\,877\,(76+e)}{699\,050\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{18\,655\,663}{174\,762\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{981\,877\,e}{699\,050\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Alternative representation:

$$\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)(123+29+2e)}{10^{56}}=\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)(123+29+2\exp(z))}{10^{56}} \text{ for } z=1$$

Series representations:

$$\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)(123+29+2e)}{10^{56}} = \frac{18\,655\,663}{174\,762\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \left(981\,877\sum_{k=0}^{\infty}\frac{1}{k!}\right) \Big/ 699\,050\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000$$

$$\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)(123+29+2e)}{10^{56}} = \frac{18\,655\,663}{174\,762\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \left(981\,877\sum_{k=0}^{\infty}\frac{1+k}{k!}\right) \Big/ 1\,398\,100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000$$

$$\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)(123+29+2e)}{10^{56}} = \frac{18\,655\,663}{174\,762\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \left(981\,877\sum_{k=0}^{\infty}\frac{-1+k+z}{k!}\right) \Big/ (699\,050\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,z)$$

Or:

(((7/10^56-Pi/10^54)+1.61803398/10^54 *((1+6(((2^2)/(1-2^2)+(2*2^4)/(1-2^4)))-6(((5*2^10)/(1-2^10)+(10*2^20)/(1-2^20))))))))

Where are present 7, that is a Lucas number, π and ϕ = 1.61803398...

Input interpretation:

$$\left(\frac{7}{10^{56}}-\frac{\pi}{10^{54}}\right)+\frac{1.61803398}{10^{54}}\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)$$

Result:

$1.10561935\ldots \times 10^{-52}$

$1.10561935\ldots*10^{-52}$ result practically equal to the value of Cosmological Constant $1.1056*10^{-52}$ m^{-2}

Alternative representations:

$$\left(\frac{7}{10^{56}}-\frac{\pi}{10^{54}}\right)+\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)1.61803}{10^{54}}=$$
$$-\frac{180^\circ}{10^{54}}+\frac{1.61803\left(1+6\left(-\frac{4}{3}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)}{10^{54}}+\frac{7}{10^{56}}$$

$$\left(\frac{7}{10^{56}}-\frac{\pi}{10^{54}}\right)+\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)1.61803}{10^{54}}=$$
$$\frac{i\log(-1)}{10^{54}}+\frac{1.61803\left(1+6\left(-\frac{4}{3}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)}{10^{54}}+\frac{7}{10^{56}}$$

$$\left(\frac{7}{10^{56}}-\frac{\pi}{10^{54}}\right)+\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)1.61803}{10^{54}}=$$
$$-\frac{\cos^{-1}(-1)}{10^{54}}+\frac{1.61803\left(1+6\left(-\frac{4}{3}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)}{10^{54}}+\frac{7}{10^{56}}$$

Series representations:

$$\left(\frac{7}{10^{56}}-\frac{\pi}{10^{54}}\right)+\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)1.61803}{10^{54}}=$$
$$1.13704\times 10^{-52}-4.\times 10^{-54}\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}$$

$$\left(\frac{7}{10^{56}}-\frac{\pi}{10^{54}}\right)+\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)1.61803}{10^{54}}=$$
$$1.15704\times 10^{-52}-2.\times 10^{-54}\sum_{k=1}^{\infty}\frac{2^k}{\binom{2k}{k}}$$

$$\left(\frac{7}{10^{56}}-\frac{\pi}{10^{54}}\right)+\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)1.61803}{10^{54}}=$$
$$1.13704\times 10^{-52}-1.\times 10^{-54}\sum_{k=0}^{\infty}\frac{2^{-k}(-6+50k)}{\binom{3k}{k}}$$

Integral representations:

$$\left(\frac{7}{10^{56}}-\frac{\pi}{10^{54}}\right)+\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)1.61803}{10^{54}}=$$
$$1.13704\times 10^{-52}-2.\times 10^{-54}\int_0^{\infty}\frac{1}{1+t^2}\,dt$$

$$\left(\frac{7}{10^{56}}-\frac{\pi}{10^{54}}\right)+\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)1.61803}{10^{54}}=$$
$$1.13704\times 10^{-52}-4.\times 10^{-54}\int_0^{1}\sqrt{1-t^2}\,dt$$

$$\left(\frac{7}{10^{56}}-\frac{\pi}{10^{54}}\right)+\frac{\left(1+6\left(\frac{2^2}{1-2^2}+\frac{2\times 2^4}{1-2^4}\right)-6\left(\frac{5\times 2^{10}}{1-2^{10}}+\frac{10\times 2^{20}}{1-2^{20}}\right)\right)1.61803}{10^{54}}=$$
$$1.13704\times 10^{-52}-2.\times 10^{-54}\int_0^{\infty}\frac{\sin(t)}{t}\,dt$$

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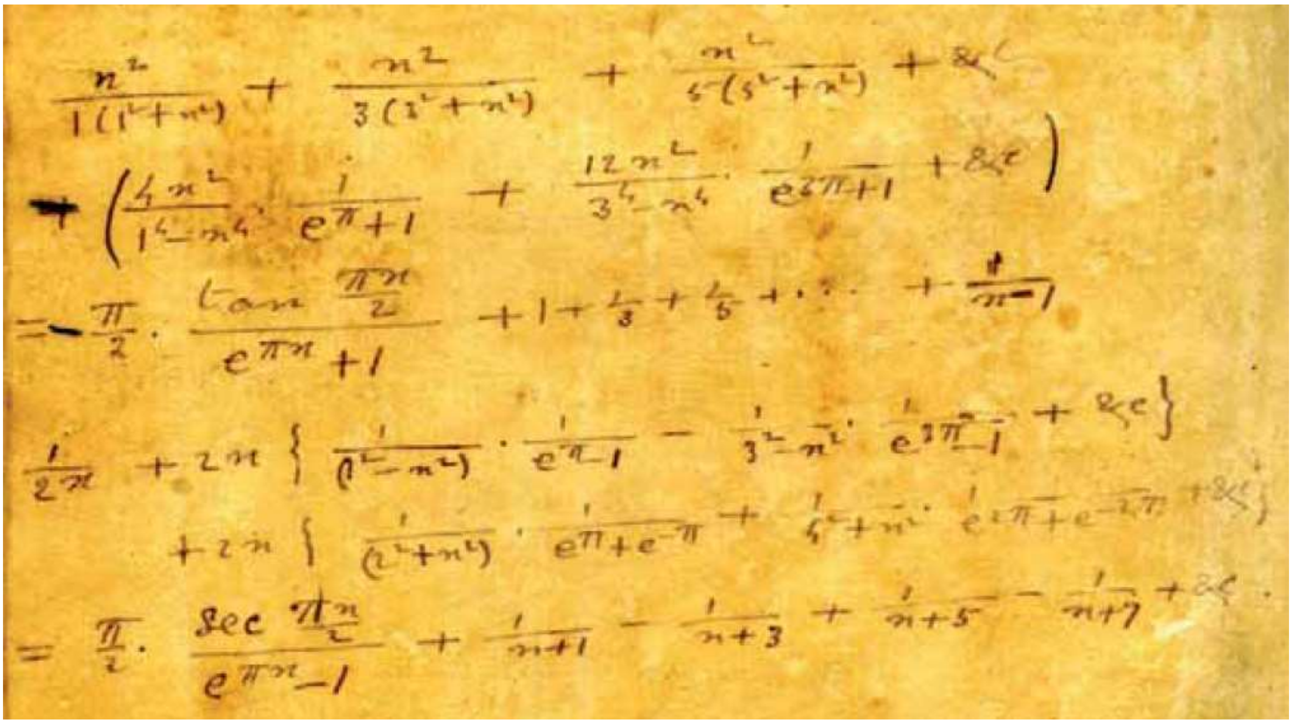


$$\frac{n^2}{1(1^2+n^2)} + \frac{n^2}{3(3^2+n^2)} + \frac{n^2}{5(5^2+n^2)} + \&c$$

$$+\left(\frac{4n^2}{1^4-n^4}\cdot\frac{1}{e^{\pi}+1} + \frac{12n^2}{3^4-n^4}\cdot\frac{1}{e^{3\pi}+1} + \&c\right)$$

$$= -\frac{\pi}{2}\cdot\frac{\tan\frac{\pi n}{2}}{e^{\pi n}+1} + 1 + \frac{1}{3} + \frac{1}{5} + \cdots + \frac{1}{n-1}$$

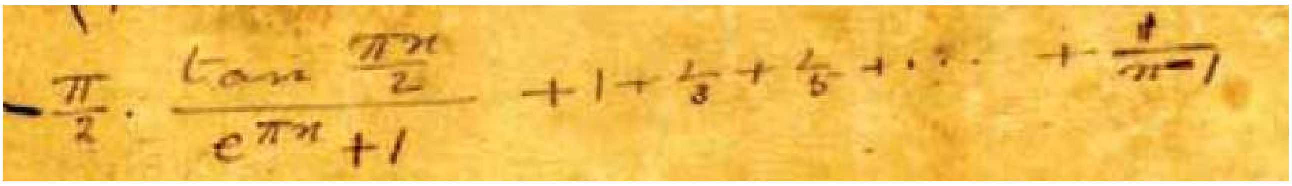
$$\frac{1}{2n} + 2n\left\{\frac{1}{(1^2-n^2)}\cdot\frac{1}{e^{\pi}-1} - \frac{1}{3^2-n^2}\cdot\frac{1}{e^{3\pi}-1} + \&c\right\}$$

$$+2n\left\{\frac{1}{(1^2+n^2)}\cdot\frac{1}{e^{\pi}+e^{-\pi}} + \frac{1}{5^2+n^2}\cdot\frac{1}{e^{5\pi}+e^{-5\pi}} + \&c\right\}$$

$$= \frac{\pi}{2}\cdot\frac{\sec\frac{\pi n}{2}}{e^{\pi n}-1} + \frac{1}{n+1} - \frac{1}{n+3} + \frac{1}{n+5} - \frac{1}{n+7} + \&c$$

For n = 8, we obtain:

From:



$$-\frac{\pi}{2}\cdot\frac{\tan\frac{\pi n}{2}}{e^{\pi n}+1} + 1 + \frac{1}{3} + \frac{1}{5} + \cdots + \frac{1}{n-1}$$

-Pi/2*(tan((8Pi)/2))/(e^(8Pi)+1)+1+1/3+1/5+1/(8-1)

Input:

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

Exact result:

$$\frac{176}{105}$$

Decimal approximation:

1.676190476190476190476190476190476190476190476190476190476...

1.676190476…

Alternative representations:

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{4}{3}+\frac{1}{5}+\frac{1}{7}+\frac{\pi\cot\left(\frac{7\pi}{2}\right)}{2\left(1+e^{8\pi}\right)}$$

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{4}{3}+\frac{1}{5}+\frac{1}{7}+\frac{\pi\cot\left(\frac{9\pi}{2}\right)}{2\left(1+e^{8\pi}\right)}$$

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{4}{3}+\frac{1}{5}+\frac{1}{7}-\frac{\pi\cot\left(-\frac{7\pi}{2}\right)}{2\left(1+e^{8\pi}\right)}$$

Series representations:

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{176}{105}-\frac{16\sum_{k=1}^{\infty}\frac{1}{-63-4k+4k^2}}{1+e^{8\pi}}$$

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{176}{105}-\frac{i\pi}{2\left(1+e^{8\pi}\right)}-\frac{i\left(\pi\sum_{k=1}^{\infty}(-1)^k q^{2k}\right)}{1+e^{8\pi}} \quad \text{for } q=1$$

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{176}{105}-\frac{i\pi\sum_{k=-\infty}^{\infty}(-1)^k \mathcal{A}^{8ik\pi}\operatorname{sgn}(k)}{2\left(1+e^{8\pi}\right)}$$

Integral representation:

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{176}{105}-\frac{\pi}{2\left(1+e^{8\pi}\right)}\int_0^{4\pi}\sec^2(t)\,dt$$

Half-argument formulas:

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{176}{105}+\frac{\pi(\cot(8\pi)-\csc(8\pi))}{2\left(1+e^{8\pi}\right)}$$

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{176}{105}+\frac{\pi(-1+\cos(8\pi))}{2\left(1+e^{8\pi}\right)\sin(8\pi)}$$

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{176}{105}-\frac{\pi\sin(8\pi)}{2\left(1+e^{8\pi}\right)(1+\cos(8\pi))}$$

Multiple-argument formulas:

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{176}{105}+\frac{\pi\tan(2\pi)}{\left(1+e^{8\pi}\right)\left(-1+\tan^2(2\pi)\right)}$$

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{176}{105}-\frac{\pi\tan\left(\frac{4\pi}{3}\right)\left(-3+\tan^2\left(\frac{4\pi}{3}\right)\right)}{2\left(1+e^{8\pi}\right)\left(-1+3\tan^2\left(\frac{4\pi}{3}\right)\right)}$$

$$\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}=\frac{176}{105}-\frac{\pi(\tan(\pi)+\tan(3\pi))}{2\left(1+e^{8\pi}\right)(1-\tan(\pi)\tan(3\pi))}$$

From the following calculation (where there are 4 that is a Lucas number and π)

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

we obtain:

Input:

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

Exact result:

$$\frac{8779}{5\,250\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

$1.672190476190476190476190476190476190476190476190476190476190476\ldots\times10^{-27}$

$1.672190476\ldots*10^{-27}$ result practically equal to the value of Proton mass in kg

And also:

1/10^52(((-5/10^4-(55+2)/10^2-Pi/2*(tan((8Pi)/2))/(e^(8Pi)+1)+1+1/3+1/5+1/(8-1))))

where 2, 5 and 55 are Fibonacci numbers

Input:

$$\frac{1}{10^{52}}\left(-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi}{2}\times\frac{\tan\left(\frac{8\pi}{2}\right)}{e^{8\pi}+1}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)$$

Exact result:

$$\frac{46\,439}{420\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

$1.1056904761904761904761904761904761904761904761904761... \times 10^{-52}$

1.105690476…*10^{-52} result practically equal to the value of Cosmological Constant 1.1056*10^{-52} m^{-2}

Alternative representations:

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}}=\frac{\frac{4}{3}+\frac{1}{5}+\frac{1}{7}-\frac{57}{10^2}-\frac{5}{10^4}+\frac{\pi\cot\left(\frac{7\pi}{2}\right)}{2\left(1+e^{8\pi}\right)}}{10^{52}}$$

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}}=\frac{\frac{4}{3}+\frac{1}{5}+\frac{1}{7}-\frac{57}{10^2}-\frac{5}{10^4}+\frac{\pi\cot\left(\frac{9\pi}{2}\right)}{2\left(1+e^{8\pi}\right)}}{10^{52}}$$

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}}=\frac{\frac{4}{3}+\frac{1}{5}+\frac{1}{7}-\frac{57}{10^2}-\frac{5}{10^4}-\frac{\pi\cot\left(-\frac{7\pi}{2}\right)}{2\left(1+e^{8\pi}\right)}}{10^{52}}$$

Series representations:

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}}=\frac{46\,439}{420\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}-\frac{\sum_{k=1}^{\infty}\frac{1}{-63-4k+4k^2}}{625\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(1+e^{8\pi}\right)}$$

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}} = \left(46\,439+46\,439\,e^{8\pi}-21\,000\,i\,\pi\sum_{k=1}^{\infty}(-1)^k\,\mathcal{A}^{8\,i\,k\,\pi}+21\,000\,i\,\pi\sum_{k=-\infty}^{-1}(-1)^k\,\mathcal{A}^{8\,i\,k\,\pi}\right)\Big/ \left(420\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(1+e^{8\pi}\right)\right)$$

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}} = \frac{46\,439}{420\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} - \left(i\,\pi\sum_{k=-\infty}^{\infty}(-1)^k\,\mathcal{A}^{8\,i\,k\,\pi}\operatorname{sgn}(k)\right)\Big/ \left(20\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(1+e^{8\pi}\right)\right)$$

Integral representation:

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}} = \frac{46\,439}{420\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} - \left(\pi\Big/\left(20\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(1+e^{8\pi}\right)\right)\right)\int_0^{4\pi}\sec^2(t)\,dt$$

Half-argument formulas:

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}} = \frac{\frac{46\,439}{42\,000}+\frac{\pi(\cot(8\pi)-\csc(8\pi))}{2\left(1+e^{8\pi}\right)}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}} = \frac{\frac{46\,439}{42\,000}+\frac{\pi(-1+\cos(8\pi))}{2\left(1+e^{8\pi}\right)\sin(8\pi)}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}}=\frac{\frac{46\,439}{42\,000}-\frac{\pi\sin(8\pi)}{2\left(1+e^{8\pi}\right)(1+\cos(8\pi))}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Multiple-argument formulas:

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}}=\frac{\frac{46\,439}{42\,000}+\frac{\pi\tan(2\pi)}{\left(1+e^{8\pi}\right)\left(-1+\tan^2(2\pi)\right)}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}}=\frac{\frac{46\,439}{42\,000}-\frac{\pi(\tan(\pi)+\tan(3\pi))}{2\left(1+e^{8\pi}\right)(1-\tan(\pi)\tan(3\pi))}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{-\frac{5}{10^4}-\frac{55+2}{10^2}-\frac{\pi\tan\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}+1\right)}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}}{10^{52}}=\frac{\frac{46\,439}{42\,000}-\frac{\pi\left(3\tan\left(\frac{4\pi}{3}\right)-\tan^3\left(\frac{4\pi}{3}\right)\right)}{2\left(1+e^{8\pi}\right)\left(1-3\tan^2\left(\frac{4\pi}{3}\right)\right)}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

We obtain also:

10*8((-Pi/2*(tan((8Pi)/2))/(e^(8Pi)+1)+1+1/3+1/5+1/(8-1)))+5+1/golden ratio

where 8 and 5 are Fibonacci numbers

Input:

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

ϕ is the golden ratio

Exact result:

$$\frac{1}{\phi}+\frac{2921}{21}$$

Decimal approximation:

139.7132720839879900862998249296037333558155472750438581002...

139.71327208… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternate forms:

$$\frac{2921\,\phi+21}{21\,\phi}$$

$$\frac{1}{42}\left(5821+21\sqrt{5}\right)$$

$$\frac{\sqrt{5}}{2}+\frac{5821}{42}$$

Alternative representations:

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=5+\frac{1}{\phi}+80\left(\frac{4}{3}+\frac{1}{5}+\frac{1}{7}+\frac{\pi\cot\left(\frac{7\pi}{2}\right)}{2\left(1+e^{8\pi}\right)}\right)$$

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=5+\frac{1}{\phi}+80\left(\frac{4}{3}+\frac{1}{5}+\frac{1}{7}+\frac{\pi\cot\left(\frac{9\pi}{2}\right)}{2\left(1+e^{8\pi}\right)}\right)$$

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=5+\frac{1}{\phi}+80\left(\frac{4}{3}+\frac{1}{5}+\frac{1}{7}-\frac{\pi\cot\left(-\frac{7\pi}{2}\right)}{2\left(1+e^{8\pi}\right)}\right)$$

Series representations:

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=\frac{2921}{21}+\frac{1}{\phi}-\frac{1280\sum_{k=1}^{\infty}\frac{1}{-63-4k+4k^2}}{1+e^{8\pi}}$$

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=$$
$$\frac{2921}{21}+\frac{1}{\phi}-\frac{40\,i\,\pi\sum_{k=-\infty}^{\infty}(-1)^k\,\mathcal{A}^{8ik\pi}\operatorname{sgn}(k)}{1+e^{8\pi}}$$

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=$$
$$\frac{2921}{21}+\frac{1}{\phi}-\frac{40\,i\,\pi}{1+e^{8\pi}}-\frac{80\,i\,\pi\sum_{k=1}^{\infty}(-1)^k q^{2k}}{1+e^{8\pi}}\quad\text{for } q=1$$

Integral representation:

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=\frac{2921}{21}+\frac{1}{\phi}-\frac{40\,\pi}{1+e^{8\pi}}\int_0^{4\pi}\sec^2(t)\,dt$$

Half-argument formulas:

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=\frac{2921}{21}+\frac{1}{\phi}+\frac{40\,\pi\,(\cot(8\,\pi)-\csc(8\,\pi))}{1+e^{8\pi}}$$

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=\frac{2921}{21}+\frac{1}{\phi}+\frac{40\,\pi\,(-1+\cos(8\,\pi))}{\left(1+e^{8\pi}\right)\sin(8\,\pi)}$$

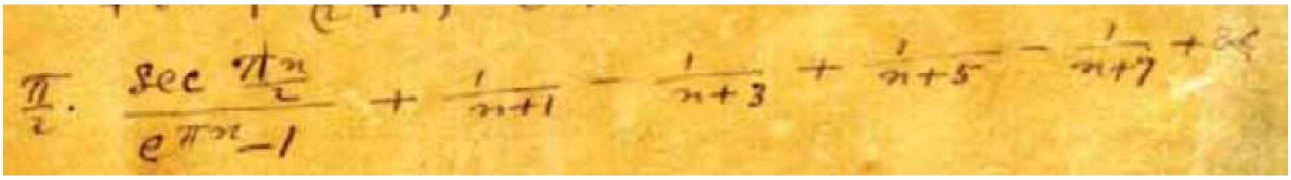
$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=\frac{2921}{21}+\frac{1}{\phi}-\frac{40\,\pi\,\sin(8\,\pi)}{\left(1+e^{8\pi}\right)(1+\cos(8\,\pi))}$$

Multiple-argument formulas:

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=$$
$$\frac{2921}{21}+\frac{1}{\phi}+\frac{80\,\pi\tan(2\,\pi)}{\left(1+e^{8\pi}\right)\left(-1+\tan^2(2\,\pi)\right)}$$

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=$$
$$\frac{2921}{21}+\frac{1}{\phi}-\frac{40\,\pi\tan\left(\frac{4\pi}{3}\right)\left(-3+\tan^2\left(\frac{4\pi}{3}\right)\right)}{\left(1+e^{8\pi}\right)\left(-1+3\tan^2\left(\frac{4\pi}{3}\right)\right)}$$

$$10\times 8\left(\frac{\tan\left(\frac{8\pi}{2}\right)(-\pi)}{\left(e^{8\pi}+1\right)2}+1+\frac{1}{3}+\frac{1}{5}+\frac{1}{8-1}\right)+5+\frac{1}{\phi}=$$
$$5+\frac{1}{\phi}+80\left(\frac{176}{105}-\frac{\pi\,(\tan(\pi)+\tan(3\,\pi))}{2\left(1+e^{8\pi}\right)(1-\tan(\pi)\tan(3\,\pi))}\right)$$



For n = 8, we obtain:

Pi/2 * (sec (8Pi/2))/(e^(8Pi)-1) + 1/9 – 1/11 + 1/13 – 1/15

Input:

$$\frac{\pi}{2} \times \frac{\sec\left(8 \times \frac{\pi}{2}\right)}{e^{8\pi} - 1} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}$$

$\sec(x)$ is the secant function

Exact result:

$$\frac{196}{6435} + \frac{\pi}{2\left(e^{8\pi} - 1\right)}$$

Decimal approximation:

0.030458430477533787037938728246373854448187619671585185075...

0.03045843…

Alternate forms:

$$\frac{-392 + 392\, e^{8\pi} + 6435\,\pi}{12870\left(e^{8\pi} - 1\right)}$$

$$\frac{-392 + 392\, e^{8\pi} + 6435\,\pi}{12870\,(e^{\pi} - 1)(1 + e^{\pi})\left(1 + e^{2\pi}\right)\left(1 + e^{4\pi}\right)}$$

$$\frac{196}{6435} + \frac{\pi}{16\,(e^{\pi} - 1)} - \frac{\pi}{16\,(1 + e^{\pi})} - \frac{\pi}{8\left(1 + e^{2\pi}\right)} - \frac{\pi}{4\left(1 + e^{4\pi}\right)}$$

Alternative representations:

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi} - 1\right)2} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15} = \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15} + \frac{\pi \csc\left(\frac{9\pi}{2}\right)}{2\left(-1 + e^{8\pi}\right)}$$

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}+\frac{\pi\csc\left(-\frac{7\pi}{2}\right)}{2\left(-1+e^{8\pi}\right)}$$

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}+\frac{\pi}{2\cos(4\pi)\left(-1+e^{8\pi}\right)}$$

Series representations:

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{196}{6435}+\frac{\pi}{2\left(-1+\left(\sum_{k=0}^{\infty}\frac{1}{k!}\right)^{8\pi}\right)}$$

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{196}{6435}+\frac{2\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}}{-1+e^{32\sum_{k=0}^{\infty}(-1)^k/(1+2k)}}$$

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{196}{6435}+\frac{\pi}{2\left(-1+\left(\frac{1}{\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}}\right)^{8\pi}\right)}$$

Integral representations:

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{196}{6435}+\frac{1}{-1+e^{16\int_0^{\infty}1/(1+t^2)\,dt}}\int_0^{\infty}\frac{1}{1+t^2}\,dt$$

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{196}{6435}+\frac{2}{-1+e^{32\int_0^1\sqrt{1-t^2}\,dt}}\int_0^1\sqrt{1-t^2}\,dt$$

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{196}{6435}+\frac{1}{-1+e^{16\int_0^1 1/\sqrt{1-t^2}\,dt}}\int_0^1\frac{1}{\sqrt{1-t^2}}\,dt$$

Multiple-argument formulas:

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{196}{6435}-\frac{\pi\sec^2(2\pi)}{2\left(-1+e^{8\pi}\right)\left(-2+\sec^2(2\pi)\right)}$$

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{196}{6435}+\frac{\pi}{2\left(-1+e^{8\pi}\right)T_4(\cos(\pi))}$$

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{196}{6435}+\frac{\pi\sec^3\left(\frac{4\pi}{3}\right)}{2\left(-1+e^{8\pi}\right)\left(4-3\sec^2\left(\frac{4\pi}{3}\right)\right)}$$

$$\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}=\frac{196}{6435}+\frac{\pi}{8\left(-1+e^{8\pi}\right)\sum_{k=0}^{\lfloor 2\rfloor}\frac{(-1)^k 2^{3-2k}\cos^{4-2k}(\pi)(3-k)!}{(4-2k)!k!}}$$

Now, we have also:

1/10^52(((((Pi/2 * (sec (8Pi/2))/(e^(8Pi)-1) + 1/9 – 1/11 + 1/13 – 1/15)))+(1.08094974-0.00572374)))

And from φ(q) = 1.075226 + 0.00572374 = **1.08094974**, that is the value of a Ramanujan mock theta function, we obtain 1.075226. Thence we have the following expression that give us a solution that multiplied by $1/10^{52}$, provide us a sub-multiple of the first result:

Input interpretation:

$$\frac{1}{10^{52}}\left(\left(\frac{\pi}{2}\times\frac{\sec\left(8\times\frac{\pi}{2}\right)}{e^{8\pi}-1}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}\right)+(1.08094974-0.00572374)\right)$$

sec(x) is the secant function

Result:

$1.1056844\ldots\times10^{-52}$

$1.1056844\ldots*10^{52}$ result practically equal to the value of Cosmological Constant $1.1056*10^{-52}$ m^{-2}

Alternative representations:

$$\frac{\left(\frac{\pi\sec\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}-1\right)}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}\right)+(1.08095-0.00572374)}{10^{52}}=\frac{1.07523+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}+\frac{\pi\csc\left(\frac{9\pi}{2}\right)}{2\left(-1+e^{8\pi}\right)}}{10^{52}}$$

$$\frac{\left(\frac{\pi \sec\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}-1\right)} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}\right) + (1.08095 - 0.00572374)}{10^{52}} = \frac{1.07523 + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15} + \frac{\pi \csc\left(-\frac{7\pi}{2}\right)}{2\left(-1+e^{8\pi}\right)}}{10^{52}}$$

$$\frac{\left(\frac{\pi \sec\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}-1\right)} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}\right) + (1.08095 - 0.00572374)}{10^{52}} = \frac{1.07523 + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15} + \frac{\pi}{2\cos(4\pi)\left(-1+e^{8\pi}\right)}}{10^{52}}$$

Series representations:

$$\frac{\left(\frac{\pi \sec\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}-1\right)} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}\right) + (1.08095 - 0.00572374)}{10^{52}} = -\frac{1.10568\times10^{-52}}{-1+e^{8\pi}} + \frac{1.10568\times10^{-52}\, e^{8\pi}}{-1+e^{8\pi}} - \frac{1\times10^{-52}\, \pi \sum_{k=1}^{\infty} (-1)^k q^{-1+2k}}{-1+e^{8\pi}} \quad \text{for } q = 1$$

$$\frac{\left(\frac{\pi \sec\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}-1\right)} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}\right) + (1.08095 - 0.00572374)}{10^{52}} = -\frac{1.10568\times10^{-52}}{-1+e^{8\pi}} + \frac{1.10568\times10^{-52}\, e^{8\pi}}{-1+e^{8\pi}} + \frac{2\times10^{-52} \sum_{k=0}^{\infty} \frac{(-1)^k (1+2k)}{-63+4k+4k^2}}{-1+e^{8\pi}}$$

$$\frac{\left(\frac{\pi \sec\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}-1\right)} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}\right) + (1.08095 - 0.00572374)}{10^{52}} = -\frac{1.10568\times10^{-52}}{-1+e^{8\pi}} + \frac{1.10568\times10^{-52}\, e^{8\pi}}{-1+e^{8\pi}} - \frac{5\times10^{-53}\, \pi \sum_{k=-\infty}^{\infty} (-1)^k \mathcal{A}^{-4i(1+2k)\pi} (-1+2\,\theta(k))}{-1+e^{8\pi}}$$

Multiple-argument formulas:

$$\frac{\left(\frac{\pi \sec\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}-1\right)} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}\right) + (1.08095 - 0.00572374)}{10^{52}} = \frac{5\times10^{-53}\,\pi + \left(-1.10568\times10^{-52} + 1.10568\times10^{-52}\, e^{8\pi}\right) T_4(\cos(\pi))}{\left(-1+e^{8\pi}\right) T_4(\cos(\pi))}$$

$$\frac{\left(\frac{\pi \sec\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}-1\right)} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}\right) + (1.08095 - 0.00572374)}{10^{52}} =$$

$$\left(2.21137\times 10^{-52} - 2.21137\times 10^{-52} e^{8\pi} + \left(-1.10568\times 10^{-52} + 1.10568\times 10^{-52} e^{8\pi} - 5\times 10^{-53} \pi\right) \sec^2(2\pi)\right) / \left(\left(-1 + e^{8\pi}\right)\left(-2 + \sec^2(2\pi)\right)\right)$$

$$\frac{\left(\frac{\pi \sec\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}-1\right)} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}\right) + (1.08095 - 0.00572374)}{10^{52}} =$$

$$\left(1.47425\times 10^{-52} - 1.47425\times 10^{-52} e^{8\pi} + \left(-1.10568\times 10^{-52} + 1.10568\times 10^{-52} e^{8\pi}\right) \sec^2\left(\frac{4\pi}{3}\right) - 1.66667\times 10^{-53} \pi \sec^3\left(\frac{4\pi}{3}\right)\right) / \left(\left(-1 + e^{8\pi}\right)\left(-1.33333 + \sec^2\left(\frac{4\pi}{3}\right)\right)\right)$$

$$\frac{\left(\frac{\pi \sec\left(\frac{8\pi}{2}\right)}{2\left(e^{8\pi}-1\right)} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}\right) + (1.08095 - 0.00572374)}{10^{52}} = 1.10568\times 10^{-52} +$$

$$\pi / \left(80\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000 \left(-1 + e^{8\pi}\right) \sum_{k=0}^{\lfloor 2 \rfloor} \frac{(-1)^k\, 2^{3-2k} \cos^{4-2k}(\pi)\,(3-k)!}{(4-2k)!\,k!}\right)$$

From the exact result of above expression

$$\frac{196}{6435} + \frac{\pi}{2\left(e^{8\pi} - 1\right)}$$

we obtain, performing the following calculations:

196/(x+(128+32-golden ratio)) + π/(2 (-1 + e^(8 π))) = 0.03045843047753

Input interpretation:

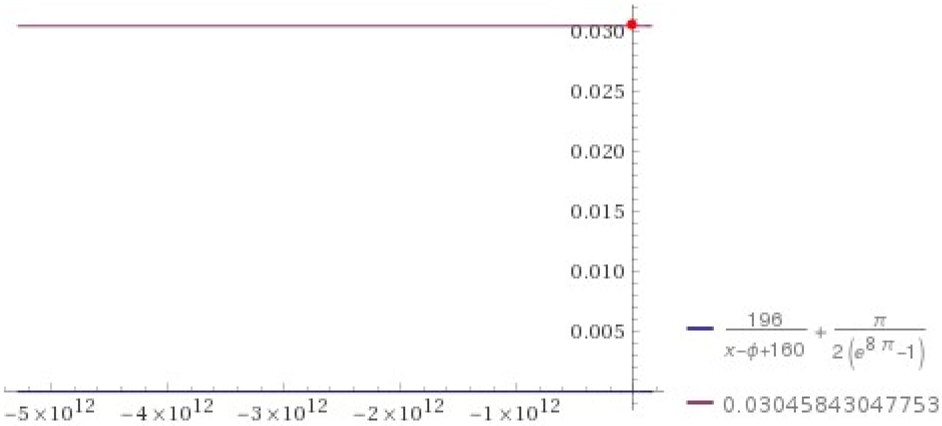
$$\frac{196}{x + (128 + 32 - \phi)} + \frac{\pi}{2\left(-1 + e^{8\pi}\right)} = 0.03045843047753$$

ϕ is the golden ratio

Result:

$$\frac{196}{x - \phi + 160} + \frac{\pi}{2\left(e^{8\pi} - 1\right)} = 0.03045843047753$$

Plot:



Alternate form assuming x is real:

$$\frac{6435.0000}{1.00000000\,x + 158.381966} = 1.00000000$$

Alternate forms:

$$\frac{196}{x + \frac{1}{2}(319 - \sqrt{5})} + \frac{\pi}{2(e^{8\pi} - 1)} = 0.03045843047753$$

$$\frac{196}{x + \frac{1}{2}(-1 - \sqrt{5}) + 160} + \frac{\pi}{2(e^{8\pi} - 1)} = 0.03045843047753$$

$$-\frac{392}{-2x + \sqrt{5} - 319} - \frac{\pi}{4(1 + e^{4\pi})} - \frac{\pi}{8(1 + e^{2\pi})} - \frac{\pi}{16(1 + e^{\pi})} + \frac{\pi}{16(e^{\pi} - 1)} = 0.03045843047753$$

Alternate form assuming x is positive:

$$1.00000000000\,x = 6276.6180340$$

Solution:

$$x \approx 6276.61803399$$

6276.61803399 result very near to the rest mass of charmed B meson 6275.6 MeV

We have also the following expression:

4/(((Pi/2 * (sec (8Pi/2))/(e^(8Pi)-1) + 1/9 – 1/11 + 1/13 – 1/15)))-2Pi

Input:

$$\frac{4}{\frac{\pi}{2} \times \frac{\sec\left(8 \times \frac{\pi}{2}\right)}{e^{8\pi}-1} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}} - 2\pi$$

$\sec(x)$ is the secant function

Exact result:

$$\frac{4}{\frac{196}{6435} + \frac{\pi}{2\left(e^{8\pi}-1\right)}} - 2\pi$$

Decimal approximation:

125.04334522269816945186017627120177020211443671071590778 25...

125.043345222… 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:

$$\frac{51480\left(e^{8\pi}-1\right)}{-392 + 392\, e^{8\pi} + 6435\,\pi} - 2\pi$$

$$\frac{1}{49}(6435 - 98\,\pi) - \frac{41409225\,\pi}{49\left(-392 + 392\, e^{8\pi} + 6435\,\pi\right)}$$

$$-\frac{2\left(25740 - 25740\, e^{8\pi} - 392\,\pi + 392\, e^{8\pi}\,\pi + 6435\,\pi^2\right)}{-392 + 392\, e^{8\pi} + 6435\,\pi}$$

Alternative representations:

$$\frac{4}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}} - 2\pi = -2\pi + \frac{4}{\frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15} + \frac{\pi\csc\left(\frac{9\pi}{2}\right)}{2\left(-1+e^{8\pi}\right)}}$$

$$\frac{4}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}} - 2\pi = -2\pi + \frac{4}{\frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15} + \frac{\pi\csc\left(-\frac{7\pi}{2}\right)}{2\left(-1+e^{8\pi}\right)}}$$

$$\frac{4}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15}} - 2\pi = -2\pi + \frac{4}{\frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15} + \frac{\pi}{2\cos(4\pi)\left(-1+e^{8\pi}\right)}}$$

Series representations:

$$\frac{4}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}-2\pi=-2\pi+\frac{4}{\frac{196}{6435}+\frac{\pi}{2\left(-1+\left(\sum_{k=0}^{\infty}\frac{1}{k!}\right)^{8\pi}\right)}}$$

$$\frac{4}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}-2\pi=-2\pi+\frac{4}{\frac{196}{6435}+\frac{\pi}{2\left(-1+\left(\frac{1}{\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}}\right)^{8\pi}\right)}}$$

$$\frac{4}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}-2\pi=$$
$$-\left(\left(2\left(6435-6435\,e^{32\sum_{k=0}^{\infty}(-1)^k/(1+2k)}-392\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}+392\,e^{32\sum_{k=0}^{\infty}(-1)^k/(1+2k)}\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}+25\,740\left(\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}\right)^2\right)\right)\Bigg/\left(-98+98\,e^{32\sum_{k=0}^{\infty}(-1)^k/(1+2k)}+6435\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}\right)\right)$$

Multiple-argument formulas:

$$\frac{4}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}-2\pi=-2\pi+\frac{4}{\frac{196}{6435}+\frac{\pi}{2\left(-1+e^{8\pi}\right)T_4(\cos(\pi))}}$$

$$\frac{4}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}-2\pi=-2\pi+\frac{4}{\frac{196}{6435}+\frac{\pi\sec^2(2\pi)}{2\left(-1+e^{8\pi}\right)\left(2-\sec^2(2\pi)\right)}}$$

$$\frac{4}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}-2\pi=-2\pi+\frac{4}{\frac{196}{6435}+\frac{\pi\sec^3\left(\frac{4\pi}{3}\right)}{2\left(-1+e^{8\pi}\right)\left(4-3\sec^2\left(\frac{4\pi}{3}\right)\right)}}$$

$$\frac{4}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}-2\pi=-2\pi+\frac{4}{\frac{196}{6435}+\frac{\pi}{8\left(-1+e^{8\pi}\right)\sum_{k=0}^{\lfloor 2\rfloor}\frac{(-1)^k\,2^{3-2k}\cos^{4-2k}(\pi)\,(3-k)!}{(4-2k)!\,k!}}}$$

We have also:

(55-3)/(((Pi/2 * (sec (8Pi/2))/(e^(8Pi)-1) + 1/9 – 1/11 + 1/13 – 1/15)))+21+3-Pi+1/golden ratio

Where 3, 21 and 55 are Fibonacci numbers.

Input:

$$\frac{55-3}{\frac{\pi}{2}\times\frac{\sec\left(8\times\frac{\pi}{2}\right)}{e^{8\pi}-1}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}$$

$\sec(x)$ is the secant function

ϕ is the golden ratio

Exact result:

$$\frac{1}{\phi}+24-\pi+\frac{52}{\frac{196}{6435}+\frac{\pi}{2\left(e^{8\pi}-1\right)}}$$

Decimal approximation:

1728.721338223570928683952962941976222850137221403490209559...

1728.72133822…

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:

$$\frac{1}{\phi}+24-\pi+\frac{669\,240\left(e^{8\pi}-1\right)}{-392+392\,e^{8\pi}+6435\,\pi}$$

$$\frac{1}{2}\left(47+\sqrt{5}\right)-\pi+\frac{52}{\frac{196}{6435}+\frac{\pi}{2\left(e^{8\pi}-1\right)}}$$

$$24+\frac{2}{1+\sqrt{5}}-\pi+\frac{52}{\frac{196}{6435}+\frac{\pi}{2\left(e^{8\pi}-1\right)}}$$

Alternative representations:

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=24-\pi+\frac{1}{\phi}+\frac{52}{\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}+\frac{\pi\csc\left(\frac{9\pi}{2}\right)}{2\left(-1+e^{8\pi}\right)}}$$

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=24-\pi+\frac{1}{\phi}+\frac{52}{\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}+\frac{\pi\csc\left(-\frac{7\pi}{2}\right)}{2\left(-1+e^{8\pi}\right)}}$$

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=$$
$$24-\pi+\frac{1}{\phi}+\frac{52}{\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}+\frac{\pi}{2\cos(4\pi)\left(-1+e^{8\pi}\right)}}$$

Series representations:

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=24+\frac{1}{\phi}-\pi+\frac{52}{\frac{196}{6435}+\frac{\pi}{2\left(-1+\left(\sum_{k=0}^{\infty}\frac{1}{k!}\right)^{8\pi}\right)}}$$

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=24+\frac{1}{\phi}-\pi+\frac{52}{\frac{196}{6435}+\frac{\pi}{2\left(-1+\left(\frac{1}{\sum_{k=0}^{\infty}\frac{(-1)^k}{k!}}\right)^{8\pi}\right)}}$$

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=$$
$$24+\frac{1}{\phi}-4\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}+\frac{52}{\frac{196}{6435}+\frac{2\sum_{k=0}^{\infty}\frac{(-1)^k}{1+2k}}{-1+e^{32\sum_{k=0}^{\infty}(-1)^k/(1+2k)}}}$$

Integral representations:

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=$$
$$24+\frac{1}{\phi}-2\int_0^{\infty}\frac{1}{1+t^2}\,dt+\frac{52}{\frac{196}{6435}+\frac{1}{-1+e^{16\int_0^{\infty}1/\left(1+t^2\right)dt}}\int_0^{\infty}\frac{1}{1+t^2}\,dt}$$

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{\left(e^{8\pi}-1\right)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=$$
$$24+\frac{1}{\phi}-2\int_0^{\infty}\frac{\sin(t)}{t}\,dt+\frac{52}{\frac{196}{6435}+\frac{1}{-1+e^{16\int_0^{\infty}\sin(t)/t\,dt}}\int_0^{\infty}\frac{\sin(t)}{t}\,dt}$$

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{(e^{8\pi}-1)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=$$
$$24+\frac{1}{\phi}-2\int_0^1\frac{1}{\sqrt{1-t^2}}\,dt+\frac{52}{\frac{196}{6435}+\frac{1}{-1+e^{16\int_0^1 1/\sqrt{1-t^2}\,dt}}\int_0^1\frac{1}{\sqrt{1-t^2}}\,dt}$$

Multiple-argument formulas:

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{(e^{8\pi}-1)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=24+\frac{1}{\phi}-\pi+\frac{52}{\frac{196}{6435}+\frac{\pi}{2\left(-1+e^{8\pi}\right)T_4(\cos(\pi))}}$$

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{(e^{8\pi}-1)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=24+\frac{1}{\phi}-\pi+\frac{52}{\frac{196}{6435}+\frac{\pi\sec^2(2\pi)}{2\left(-1+e^{8\pi}\right)\left(2-\sec^2(2\pi)\right)}}$$

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{(e^{8\pi}-1)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=24+\frac{1}{\phi}-\pi+\frac{52}{\frac{196}{6435}+\frac{\pi\sec^3\left(\frac{4\pi}{3}\right)}{2\left(-1+e^{8\pi}\right)\left(4-3\sec^2\left(\frac{4\pi}{3}\right)\right)}}$$

$$\frac{55-3}{\frac{\sec\left(\frac{8\pi}{2}\right)\pi}{(e^{8\pi}-1)2}+\frac{1}{9}-\frac{1}{11}+\frac{1}{13}-\frac{1}{15}}+21+3-\pi+\frac{1}{\phi}=$$
$$24+\frac{1}{\phi}-\pi+\frac{52}{\frac{196}{6435}+\frac{\pi}{8\left(-1+e^{8\pi}\right)\sum_{k=0}^{\lfloor 2\rfloor}\frac{(-1)^k\,2^{3-2k}\cos^{4-2k}(\pi)\,(3-k)!}{(4-2k)!\,k!}}}$$

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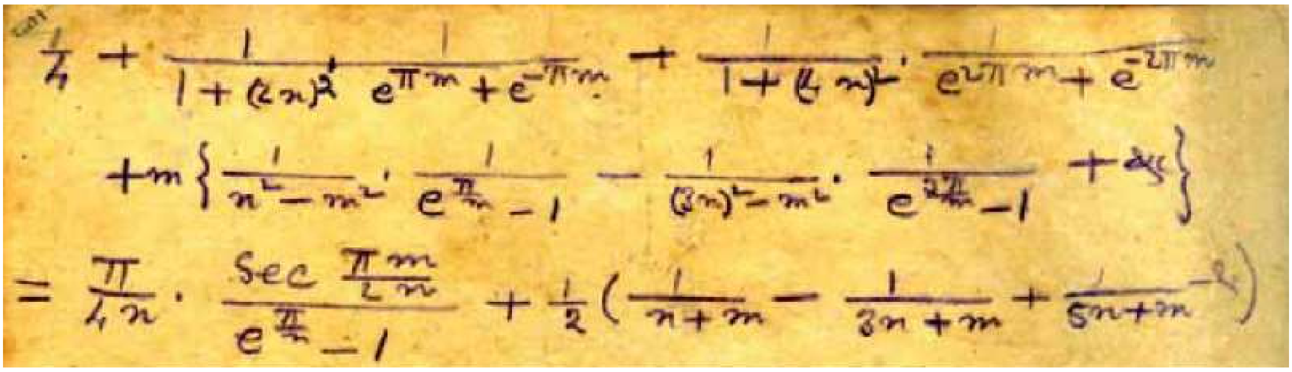


$$\frac{1}{4}+\frac{1}{1+(2n)^2}\cdot\frac{1}{e^{\pi m}+e^{-\pi m}}+\frac{1}{1+(4n)^2}\cdot\frac{1}{e^{2\pi m}+e^{-2\pi m}}$$
$$+m\left\{\frac{1}{n^2-m^2}\cdot\frac{1}{e^{\frac{\pi}{m}}-1}-\frac{1}{(3n)^2-m^2}\cdot\frac{1}{e^{\frac{3\pi}{m}}-1}+\&c\right\}$$
$$=\frac{\pi}{4n}\cdot\frac{\sec\frac{\pi m}{2n}}{e^{\frac{\pi}{n}}-1}+\frac{1}{2}\left(\frac{1}{n+m}-\frac{1}{3n+m}+\frac{1}{5n+m}-\&c\right)$$

For n = 4 and m = 1

Pi/16 * ((sec(Pi/8)))/(((e^(Pi/4)-1)))+1/2*(1/5-1/13+1/21)

Input:

$$\frac{\pi}{16} \times \frac{\sec\left(\frac{\pi}{8}\right)}{e^{\pi/4} - 1} + \frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right)$$

sec(x) is the secant function

Exact result:

$$\frac{233}{2730} + \frac{\pi \sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4} - 1\right)}$$

Decimal approximation:

0.2634513663731682134967165272217033829676421794146922469 05...

0.263451366373…

Alternate forms:

$$\frac{233}{2730} + \frac{\pi}{16\left(-1 + e^{\pi/4}\right)\cos\left(\frac{\pi}{8}\right)}$$

$$\frac{-1864 + 1864\, e^{\pi/4} + 1365\, \pi \sec\left(\frac{\pi}{8}\right)}{21\,840\left(e^{\pi/4} - 1\right)}$$

$$\frac{233}{2730} + \frac{\sqrt{\frac{1}{2}\left(2 - \sqrt{2}\right)}\,\pi}{8\left(e^{\pi/4} - 1\right)}$$

Alternative representations:

$$\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4} - 1\right)16} + \frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right) = \frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right) + \frac{\pi}{16\cos\left(\frac{\pi}{8}\right)\left(-1 + e^{\pi/4}\right)}$$

$$\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4} - 1\right)16} + \frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right) = \frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right) + \frac{\pi \csc\left(\frac{\pi}{2} + \frac{\pi}{8}\right)}{16\left(-1 + e^{\pi/4}\right)}$$

$$\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)=\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)+\frac{\pi\csc\left(\frac{\pi}{2}-\frac{\pi}{8}\right)}{16\left(-1+e^{\pi/4}\right)}$$

Series representations:

$$\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)=\frac{233}{2730}+\frac{4\sum_{k=0}^{\infty}\frac{(-1)^k(1+2k)}{15+64k+64k^2}}{-1+e^{\pi/4}}$$

$$\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)=\frac{233}{2730}-\frac{\pi\sum_{k=1}^{\infty}(-1)^k q^{-1+2k}}{8\left(-1+e^{\pi/4}\right)}\quad\text{for } q=\sqrt[8]{-1}$$

$$\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)=\frac{233}{2730}+\frac{\pi\sum_{k=0}^{\infty}\frac{(-1)^k\left(\frac{\pi}{8}\right)^{2k}E_{2k}}{(2k)!}}{16\left(-1+e^{\pi/4}\right)}$$

Integral representation:

$$\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)=\frac{233}{2730}+\frac{1}{8\left(-1+e^{\pi/4}\right)}\int_0^{\infty}\frac{\sqrt[4]{t}}{1+t^2}\,dt$$

Multiple-argument formulas:

$$\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)=\frac{233}{2730}+\frac{\pi\sec^2\left(\frac{\pi}{16}\right)}{16\left(-1+e^{\pi/4}\right)\left(2-\sec^2\left(\frac{\pi}{16}\right)\right)}$$

$$\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)=\frac{233}{2730}+\frac{\pi\sec^3\left(\frac{\pi}{24}\right)}{16\left(-1+e^{\pi/4}\right)\left(4-3\sec^2\left(\frac{\pi}{24}\right)\right)}$$

We obtain, performing the following calculations:

1+(1+3/2)*(((Pi/16 * ((sec(Pi/8)))/(((e^(Pi/4)-1)))+1/2*(1/5-1/13+1/21))))

Input:

$$1+\left(1+\frac{3}{2}\right)\left(\frac{\pi}{16}\times\frac{\sec\left(\frac{\pi}{8}\right)}{e^{\pi/4}-1}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)$$

$\sec(x)$ is the secant function

Exact result:

$$1+\frac{5}{2}\left(\frac{233}{2730}+\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}\right)$$

Decimal approximation:

1.658628415932920533741791318054258457419105448536730617264...

1.6586284159329…

Alternate forms:

$$\frac{1325}{1092}+\frac{5\pi\sec\left(\frac{\pi}{8}\right)}{32\left(e^{\pi/4}-1\right)}$$

$$\frac{5\left(-2120+2120\,e^{\pi/4}+273\,\pi\sec\left(\frac{\pi}{8}\right)\right)}{8736\left(e^{\pi/4}-1\right)}$$

$$1+\frac{5}{2}\left(\frac{233}{2730}+\frac{\pi}{16\left(-1+e^{\pi/4}\right)\cos\left(\frac{\pi}{8}\right)}\right)$$

Alternative representations:

$$1+\left(1+\frac{3}{2}\right)\left(\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)=$$
$$1+\frac{5}{2}\left(\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)+\frac{\pi}{16\cos\left(\frac{\pi}{8}\right)\left(-1+e^{\pi/4}\right)}\right)$$

$$1+\left(1+\frac{3}{2}\right)\left(\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)=$$
$$1+\frac{5}{2}\left(\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)+\frac{\pi\csc\left(\frac{\pi}{2}+\frac{\pi}{8}\right)}{16\left(-1+e^{\pi/4}\right)}\right)$$

$$1+\left(1+\frac{3}{2}\right)\left(\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)=$$
$$1+\frac{5}{2}\left(\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)+\frac{\pi\csc\left(\frac{\pi}{2}-\frac{\pi}{8}\right)}{16\left(-1+e^{\pi/4}\right)}\right)$$

Series representations:

$$1+\left(1+\frac{3}{2}\right)\left(\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)=\frac{1325}{1092}+\frac{10\sum_{k=0}^{\infty}\frac{(-1)^k(1+2k)}{15+64k+64k^2}}{-1+e^{\pi/4}}$$

$$1+\left(1+\frac{3}{2}\right)\left(\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)=\frac{1325}{1092}-\frac{5\pi\sum_{k=1}^{\infty}(-1)^k q^{-1+2k}}{16\left(-1+e^{\pi/4}\right)}$$

for $q=\sqrt[8]{-1}$

$$1+\left(1+\frac{3}{2}\right)\left(\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)=\frac{1325}{1092}+\frac{5\pi\sum_{k=0}^{\infty}\frac{(-1)^k\left(\frac{\pi}{8}\right)^{2k}E_{2k}}{(2k)!}}{32\left(-1+e^{\pi/4}\right)}$$

Integral representation:

$$1+\left(1+\frac{3}{2}\right)\left(\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)=\frac{1325}{1092}+\frac{5}{16\left(-1+e^{\pi/4}\right)}\int_0^{\infty}\frac{\sqrt[4]{t}}{1+t^2}\,dt$$

Multiple-argument formulas:

$$1+\left(1+\frac{3}{2}\right)\left(\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)=$$
$$1+\frac{5}{2}\left(\frac{233}{2730}+\frac{\pi\sec^2\left(\frac{\pi}{16}\right)}{16\left(-1+e^{\pi/4}\right)\left(2-\sec^2\left(\frac{\pi}{16}\right)\right)}\right)$$

$$1+\left(1+\frac{3}{2}\right)\left(\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)=$$
$$1+\frac{5}{2}\left(\frac{233}{2730}+\frac{\pi\sec^3\left(\frac{\pi}{24}\right)}{16\left(-1+e^{\pi/4}\right)\left(4-3\sec^2\left(\frac{\pi}{24}\right)\right)}\right)$$

And:

1/10^27(((13/10^3+1+(1+3/2)*(((Pi/16 * ((sec(Pi/8)))/(((e^(Pi/4)-1))+1/2*(1/5-1/13+1/21)))))))

Input:

$$\frac{1}{10^{27}}\left(\frac{13}{10^3}+1+\left(1+\frac{3}{2}\right)\left(\frac{\pi}{16}\times\frac{\sec\left(\frac{\pi}{8}\right)}{e^{\pi/4}-1}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)\right)$$

$\sec(x)$ is the secant function

Exact result:

$$\frac{\frac{1013}{1000}+\frac{5}{2}\left(\frac{233}{2730}+\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}\right)}{1\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

$1.671628415932920533741791318054258457419105448536730 6\ldots\times 10^{-27}$

1.6716284159…*10^{-27} result practically equal to the value of the formula:

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

that is the holographic proton mass (N. Haramein)

Alternate forms:

$$\frac{334\,799}{273\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{\pi\sec\left(\frac{\pi}{8}\right)}{6\,400\,000\,000\,000\,000\,000\,000\,000\,000\left(e^{\pi/4}-1\right)}$$

$$\frac{\frac{334\,799}{273\,000}+\frac{5\pi\sec\left(\frac{\pi}{8}\right)}{32\left(e^{\pi/4}-1\right)}}{1\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{-1\,339\,196+1\,339\,196\,e^{\pi/4}+170\,625\,\pi\sec\left(\frac{\pi}{8}\right)}{1\,092\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(e^{\pi/4}-1\right)}$$

Alternative representations:

$$\frac{\frac{13}{10^3}+1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)}{10^{27}}=\frac{1+\frac{13}{10^3}+\frac{5}{2}\left(\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)+\frac{\pi}{16\cos\left(\frac{\pi}{8}\right)\left(-1+e^{\pi/4}\right)}\right)}{10^{27}}$$

$$\frac{\frac{13}{10^3}+1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)}{10^{27}}=\frac{1+\frac{13}{10^3}+\frac{5}{2}\left(\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)+\frac{\pi\csc\left(\frac{\pi}{2}+\frac{\pi}{8}\right)}{16\left(-1+e^{\pi/4}\right)}\right)}{10^{27}}$$

$$\frac{\frac{13}{10^3}+1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)}{10^{27}}=\frac{1+\frac{13}{10^3}+\frac{5}{2}\left(\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)+\frac{\pi\csc\left(\frac{\pi}{2}-\frac{\pi}{8}\right)}{16\left(-1+e^{\pi/4}\right)}\right)}{10^{27}}$$

Series representations:

$$\frac{\frac{13}{10^3}+1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)}{10^{27}}=\frac{334799}{273\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{\sum_{k=0}^{\infty}\frac{(-1)^k(1+2k)}{15+64k+64k^2}}{100\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi/4}\right)}$$

$$\frac{\frac{13}{10^3}+1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)}{10^{27}}=\frac{334799}{273\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}-\frac{\pi\sum_{k=1}^{\infty}(-1)^k q^{-1+2k}}{3\,200\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi/4}\right)}\quad\text{for } q=\sqrt[8]{-1}$$

$$\frac{\frac{13}{10^3}+1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)}{10^{27}}=\frac{334799}{273\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\frac{\pi\sum_{k=0}^{\infty}\frac{(-1)^k\left(\frac{\pi}{8}\right)^{2k}E_{2k}}{(2k)!}}{6\,400\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi/4}\right)}$$

Integral representation:

$$\frac{\frac{13}{10^3}+1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)}{10^{27}}=$$
$$\frac{334799}{273\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+$$
$$\frac{1}{3\,200\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi/4}\right)}\int_0^\infty\frac{\sqrt[4]{t}}{1+t^2}\,dt$$

Multiple-argument formulas:

$$\frac{\frac{13}{10^3}+1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)}{10^{27}}=$$
$$\frac{\frac{1013}{1000}+\frac{5}{2}\left(\frac{233}{2730}+\frac{\pi\sec^2\left(\frac{\pi}{16}\right)}{16\left(-1+e^{\pi/4}\right)\left(2-\sec^2\left(\frac{\pi}{16}\right)\right)}\right)}{1\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\frac{13}{10^3}+1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)}{10^{27}}=$$
$$\frac{\frac{1013}{1000}+\frac{5}{2}\left(\frac{233}{2730}+\frac{\pi\sec^3\left(\frac{\pi}{24}\right)}{16\left(-1+e^{\pi/4}\right)\left(4-3\sec^2\left(\frac{\pi}{24}\right)\right)}\right)}{1\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

From

1/10^52(((-3/10^3-55/10^2+(((1+(1+3/2)*(((Pi/16 * ((sec(Pi/8)))/(((e^(Pi/4)-1)))+1/2*(1/5-1/13+1/21))))))))))

where 3 and 55 are Fibonacci numbers, we obtain:

Input:

$$\frac{1}{10^{52}}\left(-\frac{3}{10^3}-\frac{55}{10^2}+\left(1+\left(1+\frac{3}{2}\right)\left(\frac{\pi}{16}\times\frac{\sec\left(\frac{\pi}{8}\right)}{e^{\pi/4}-1}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)\right)\right)$$

sec(x) is the secant function

Exact result:

$$\frac{\frac{447}{1000}+\frac{5}{2}\left(\frac{233}{2730}+\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

$1.1056284159329205337417913180542584574191054485367306\ldots \times 10^{-52}$

1.1056284159…*10^{-52} result practically equal to the value of Cosmological Constant 1.1056*10^{-52} m^{-2}

Alternate forms:

$$\frac{180281}{2730000000000000000000000000000000000000000000000000000000} + \frac{\pi \sec\left(\frac{\pi}{8}\right)}{64000000000000000000000000000000000000000000000000000\left(e^{\pi/4}-1\right)}$$

$$\frac{\frac{180281}{273000} + \frac{5\pi\sec\left(\frac{\pi}{8}\right)}{32\left(e^{\pi/4}-1\right)}}{10000000000000000000000000000000000000000000000000000}$$

$$\left(-721124 + 721124\, e^{\pi/4} + 170625\,\pi \sec\left(\frac{\pi}{8}\right)\right) \Big/ \left(10920000000000000000000000000000000000000000000000000000000\left(e^{\pi/4}-1\right)\right)$$

Alternative representations:

$$\frac{-\frac{3}{10^3} - \frac{55}{10^2} + \left(1 + \left(1+\frac{3}{2}\right)\left(\frac{\pi \sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)} + \frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right)\right)\right)}{10^{52}} = \frac{1 - \frac{55}{10^2} - \frac{3}{10^3} + \frac{5}{2}\left(\frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right) + \frac{\pi}{16\cos\left(\frac{\pi}{8}\right)\left(-1+e^{\pi/4}\right)}\right)}{10^{52}}$$

$$\frac{-\frac{3}{10^3} - \frac{55}{10^2} + \left(1 + \left(1+\frac{3}{2}\right)\left(\frac{\pi \sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)} + \frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right)\right)\right)}{10^{52}} = \frac{1 - \frac{55}{10^2} - \frac{3}{10^3} + \frac{5}{2}\left(\frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right) + \frac{\pi \csc\left(\frac{\pi}{2}+\frac{\pi}{8}\right)}{16\left(-1+e^{\pi/4}\right)}\right)}{10^{52}}$$

$$\frac{-\frac{3}{10^3} - \frac{55}{10^2} + \left(1 + \left(1+\frac{3}{2}\right)\left(\frac{\pi \sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)} + \frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right)\right)\right)}{10^{52}} = \frac{1 - \frac{55}{10^2} - \frac{3}{10^3} + \frac{5}{2}\left(\frac{1}{2}\left(\frac{1}{5} - \frac{1}{13} + \frac{1}{21}\right) + \frac{\pi \csc\left(\frac{\pi}{2}-\frac{\pi}{8}\right)}{16\left(-1+e^{\pi/4}\right)}\right)}{10^{52}}$$

Series representations:

$$\frac{-\frac{3}{10^3}-\frac{55}{10^2}+\left(1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)\right)}{10^{52}}=$$

$$\frac{180\,281}{2\,730\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\left(\sum_{k=0}^{\infty}\frac{(-1)^k\,(1+2\,k)}{15+64\,k+64\,k^2}\right)\Big/\left(1\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi/4}\right)\right)$$

$$\frac{-\frac{3}{10^3}-\frac{55}{10^2}+\left(1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)\right)}{10^{52}}=$$

$$\frac{180\,281}{2\,730\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}-\left(\pi\sum_{k=1}^{\infty}(-1)^k\,q^{-1+2\,k}\right)\Big/\left(32\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi/4}\right)\right)\ \text{for } q=\sqrt[8]{-1}$$

$$\frac{-\frac{3}{10^3}-\frac{55}{10^2}+\left(1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)\right)}{10^{52}}=$$

$$\frac{180\,281}{2\,730\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\left(\pi\sum_{k=0}^{\infty}\frac{(-1)^k\left(\frac{\pi}{8}\right)^{2\,k}E_{2\,k}}{(2\,k)!}\right)\Big/\left(64\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi/4}\right)\right)$$

Integral representation:

$$\frac{-\frac{3}{10^3}-\frac{55}{10^2}+\left(1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)\right)}{10^{52}}=$$

$$\frac{180\,281}{2\,730\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+\left(1\Big/\left(32\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+e^{\pi/4}\right)\right)\right)\int_0^{\infty}\frac{\sqrt[4]{t}}{1+t^2}\,dt$$

Multiple-argument formulas:

$$\frac{\frac{-\frac{3}{10^3}-\frac{55}{10^2}+\left(1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)\right)}{10^{52}}=\frac{447}{1000}+\frac{5}{2}\left(\frac{233}{2730}+\frac{\pi\sec^2\left(\frac{\pi}{16}\right)}{16\left(-1+e^{\pi/4}\right)\left(2-\sec^2\left(\frac{\pi}{16}\right)\right)}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\frac{-\frac{3}{10^3}-\frac{55}{10^2}+\left(1+\left(1+\frac{3}{2}\right)\left(\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)\right)\right)}{10^{52}}=\frac{447}{1000}+\frac{5}{2}\left(\frac{233}{2730}+\frac{\pi\sec^3\left(\frac{\pi}{24}\right)}{16\left(-1+e^{\pi/4}\right)\left(4-3\sec^2\left(\frac{\pi}{24}\right)\right)}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

We have also:

34/(((Pi/16 * ((sec(Pi/8)))/(((e^(Pi/4)-1)))+1/2*(1/5-1/13+1/21))))+11-1/golden ratio

Where 34 is a Fibonacci number and 11 is a Lucas number

Input:

$$\frac{34}{\frac{\pi}{16}\times\frac{\sec\left(\frac{\pi}{8}\right)}{e^{\pi/4}-1}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)}+11-\frac{1}{\phi}$$

$\sec(x)$ is the secant function

ϕ is the golden ratio

Exact result:

$$-\frac{1}{\phi}+11+\frac{34}{\frac{233}{2730}+\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}}$$

Decimal approximation:

139.43804367774576513748065677727718236822197512016946272 54...

139.4380436777… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternate forms:

$$-\frac{1}{\phi}+11+\frac{1}{\frac{233}{92\,820}+\frac{\pi\sec\left(\frac{\pi}{8}\right)}{544\left(e^{\pi/4}-1\right)}}$$

$$11-\frac{1}{\phi}+\frac{34}{\frac{233}{2730}+\frac{\pi}{16\left(-1+e^{\pi/4}\right)\cos\left(\frac{\pi}{8}\right)}}$$

$$11-\frac{2}{1+\sqrt{5}}+\frac{34}{\frac{233}{2730}+\frac{\pi\sec\left(\frac{\pi}{8}\right)}{16\left(e^{\pi/4}-1\right)}}$$

Alternative representations:

$$\frac{34}{\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)}+11-\frac{1}{\phi}=11-\frac{1}{\phi}+\frac{34}{\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)+\frac{\pi}{16\cos\left(\frac{\pi}{8}\right)\left(-1+e^{\pi/4}\right)}}$$

$$\frac{34}{\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)}+11-\frac{1}{\phi}=11-\frac{1}{\phi}+\frac{34}{\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)+\frac{\pi\csc\left(\frac{\pi}{2}+\frac{\pi}{8}\right)}{16\left(-1+e^{\pi/4}\right)}}$$

$$\frac{34}{\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)}+11-\frac{1}{\phi}=11-\frac{1}{\phi}+\frac{34}{\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)+\frac{\pi}{16\cosh\left(\frac{i\pi}{8}\right)\left(-1+e^{\pi/4}\right)}}$$

Series representations:

$$\frac{34}{\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)}+11-\frac{1}{\phi}=11-\frac{1}{\phi}+\frac{34}{\frac{233}{2730}-\frac{\pi\sum_{k=1}^{\infty}(-1)^k q^{-1+2k}}{8\left(-1+e^{\pi/4}\right)}}$$

for $q=\sqrt[8]{-1}$

$$\frac{34}{\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)}+11-\frac{1}{\phi}=11-\frac{1}{\phi}+\frac{34}{\frac{233}{2730}+\frac{\pi\sum_{k=0}^{\infty}\frac{(-1)^k\left(\frac{\pi}{8}\right)^{2k}E_{2k}}{(2k)!}}{16\left(-1+e^{\pi/4}\right)}}$$

$$\frac{34}{\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)}+11-\frac{1}{\phi}=11-\frac{1}{\phi}+\frac{34}{\frac{233}{2730}+\frac{\pi^2\sum_{k=0}^{\infty}\frac{(-1)^k(1+2k)}{-\frac{\pi^2}{64}+\left(\frac{1}{2}+k\right)^2\pi^2}}{16\left(-1+e^{\pi/4}\right)}}$$

Integral representation:

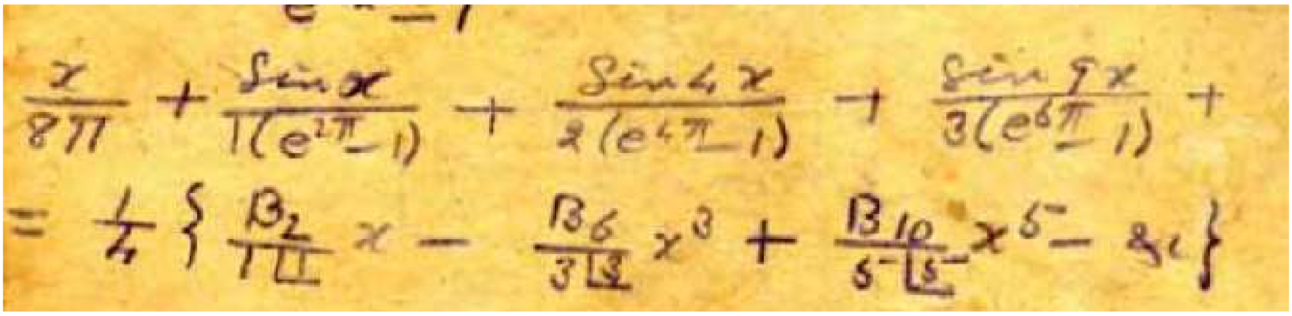
$$\frac{34}{\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)}+11-\frac{1}{\phi}=11-\frac{1}{\phi}+\frac{34}{\frac{233}{2730}+\frac{1}{8\left(-1+e^{\pi/4}\right)}\int_0^{\infty}\frac{\sqrt[4]{t}}{1+t^2}\,dt}$$

Multiple-argument formulas:

$$\frac{34}{\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)}+11-\frac{1}{\phi}=11-\frac{1}{\phi}+\frac{34}{\frac{233}{2730}+\frac{\pi\sec^2\left(\frac{\pi}{16}\right)}{16\left(-1+e^{\pi/4}\right)\left(2-\sec^2\left(\frac{\pi}{16}\right)\right)}}$$

$$\frac{34}{\frac{\sec\left(\frac{\pi}{8}\right)\pi}{\left(e^{\pi/4}-1\right)16}+\frac{1}{2}\left(\frac{1}{5}-\frac{1}{13}+\frac{1}{21}\right)}+11-\frac{1}{\phi}=11-\frac{1}{\phi}+\frac{34}{\frac{233}{2730}+\frac{\pi\sec^3\left(\frac{\pi}{24}\right)}{16\left(-1+e^{\pi/4}\right)\left(4-3\sec^2\left(\frac{\pi}{24}\right)\right)}}$$

From



For x = 2, we obtain:

2/(8Pi)+((sin(2)))/(((e^(2Pi)-1)))+((sin(8)))/(((e^(4Pi)-1)))+((sin(18)))/(((e^(6Pi)-1)))

Input:

$$\frac{2}{8\pi}+\frac{\sin(2)}{e^{2\pi}-1}+\frac{\sin(8)}{e^{4\pi}-1}+\frac{\sin(18)}{e^{6\pi}-1}$$

Decimal approximation:

0.081282154733076385715165398220347203439118415908635082273...

0.081282154733...

Alternate forms:

$$\frac{1}{4\pi}+\frac{\sin(8)}{e^{4\pi}-1}+\frac{\sin(18)}{e^{6\pi}-1}+\frac{1}{2}\sin(2)(\coth(\pi)-1)$$

$$\frac{i e^{-2i}}{2(e^{2\pi}-1)}-\frac{i e^{2i}}{2(e^{2\pi}-1)}+\frac{i e^{-8i}}{2(e^{4\pi}-1)}-\frac{i e^{8i}}{2(e^{4\pi}-1)}+\frac{i e^{-18i}}{2(e^{6\pi}-1)}-\frac{i e^{18i}}{2(e^{6\pi}-1)}+\frac{1}{4\pi}$$

$$\frac{1}{4\pi}+\Big(\sin(2)\big(e^{6\pi}+2e^{4\pi}(1+\cos(2)+\cos(6))+2(1+\cos(2)+\cos(4)+\cos(6)+\cos(8)+\cos(12)+\cos(16))+e^{2\pi}(3+2\cos(2)+2\cos(4)+2\cos(6)+2\cos(8)+2\cos(12)+2\cos(16))\big)\Big)\Big/\left((e^{2\pi}-1)(1+e^{2\pi})(1+e^{2\pi}+e^{4\pi})\right)$$

coth(x) is the hyperbolic cotangent function

Alternative representations:

$$\frac{2}{8\pi}+\frac{\sin(2)}{e^{2\pi}-1}+\frac{\sin(8)}{e^{4\pi}-1}+\frac{\sin(18)}{e^{6\pi}-1}=\frac{2}{8\pi}+\frac{1}{\csc(2)(-1+e^{2\pi})}+\frac{1}{\csc(8)(-1+e^{4\pi})}+\frac{1}{\csc(18)(-1+e^{6\pi})}$$

$$\frac{2}{8\pi}+\frac{\sin(2)}{e^{2\pi}-1}+\frac{\sin(8)}{e^{4\pi}-1}+\frac{\sin(18)}{e^{6\pi}-1}=\frac{2}{8\pi}+\frac{\cos\left(-2+\frac{\pi}{2}\right)}{-1+e^{2\pi}}+\frac{\cos\left(-8+\frac{\pi}{2}\right)}{-1+e^{4\pi}}+\frac{\cos\left(-18+\frac{\pi}{2}\right)}{-1+e^{6\pi}}$$

$$\frac{2}{8\pi}+\frac{\sin(2)}{e^{2\pi}-1}+\frac{\sin(8)}{e^{4\pi}-1}+\frac{\sin(18)}{e^{6\pi}-1}=\frac{2}{8\pi}-\frac{\cos\left(2+\frac{\pi}{2}\right)}{-1+e^{2\pi}}-\frac{\cos\left(8+\frac{\pi}{2}\right)}{-1+e^{4\pi}}-\frac{\cos\left(18+\frac{\pi}{2}\right)}{-1+e^{6\pi}}$$

Series representations:

$$\frac{2}{8\pi}+\frac{\sin(2)}{e^{2\pi}-1}+\frac{\sin(8)}{e^{4\pi}-1}+\frac{\sin(18)}{e^{6\pi}-1}=\frac{1}{4\pi}+\sum_{k=0}^{\infty}\left(\frac{(-1)^k 2^{1+2k}}{(-1+e^{2\pi})(1+2k)!}+\frac{(-1)^k 8^{1+2k}}{(-1+e^{4\pi})(1+2k)!}+\frac{(-1)^k 18^{1+2k}}{(-1+e^{6\pi})(1+2k)!}\right)$$

$$\frac{2}{8\pi}+\frac{\sin(2)}{e^{2\pi}-1}+\frac{\sin(8)}{e^{4\pi}-1}+\frac{\sin(18)}{e^{6\pi}-1}=\frac{1}{4\pi}+\sum_{k=0}^{\infty}\left(\frac{(-1)^k\left(2-\frac{\pi}{2}\right)^{2k}}{(-1+e^{2\pi})(2k)!}+\frac{(-1)^k\left(8-\frac{\pi}{2}\right)^{2k}}{(-1+e^{4\pi})(2k)!}+\frac{(-1)^k\left(18-\frac{\pi}{2}\right)^{2k}}{(-1+e^{6\pi})(2k)!}\right)$$

$$\frac{2}{8\pi} + \frac{\sin(2)}{e^{2\pi}-1} + \frac{\sin(8)}{e^{4\pi}-1} + \frac{\sin(18)}{e^{6\pi}-1} = \frac{1}{4\pi} + \sum_{k=0}^{\infty} \left(\frac{\sin\left(\frac{k\pi}{2} + z_0\right)(2-z_0)^k}{\left(-1+e^{2\pi}\right)k!} + \frac{\sin\left(\frac{k\pi}{2} + z_0\right)(8-z_0)^k}{\left(-1+e^{4\pi}\right)k!} + \frac{\sin\left(\frac{k\pi}{2} + z_0\right)(18-z_0)^k}{\left(-1+e^{6\pi}\right)k!} \right)$$

Integral representations:

$$\frac{2}{8\pi} + \frac{\sin(2)}{e^{2\pi}-1} + \frac{\sin(8)}{e^{4\pi}-1} + \frac{\sin(18)}{e^{6\pi}-1} = \frac{1}{4\pi} + \int_0^1 \left(\frac{2\cos(2t)}{-1+e^{2\pi}} + \frac{8\cos(8t)}{-1+e^{4\pi}} + \frac{18\cos(18t)}{-1+e^{6\pi}} \right) dt$$

$$\frac{2}{8\pi} + \frac{\sin(2)}{e^{2\pi}-1} + \frac{\sin(8)}{e^{4\pi}-1} + \frac{\sin(18)}{e^{6\pi}-1} = \frac{1}{4\pi} + \int_{-i\infty+\gamma}^{i\infty+\gamma} \left(-\frac{i e^{-1/s+s}}{2\left(-1+e^{2\pi}\right)\sqrt{\pi}\, s^{3/2}} - \frac{2 i e^{-16/s+s}}{\left(-1+e^{4\pi}\right)\sqrt{\pi}\, s^{3/2}} - \frac{9 i e^{-81/s+s}}{2\left(-1+e^{6\pi}\right)\sqrt{\pi}\, s^{3/2}} \right) ds \quad \text{for } \gamma > 0$$

$$\frac{2}{8\pi} + \frac{\sin(2)}{e^{2\pi}-1} + \frac{\sin(8)}{e^{4\pi}-1} + \frac{\sin(18)}{e^{6\pi}-1} = \frac{1}{4\pi} + \int_{-i\infty+\gamma}^{i\infty+\gamma} \left(-\frac{i\,\Gamma(s)}{2\left(-1+e^{2\pi}\right)\sqrt{\pi}\,\Gamma\left(\frac{3}{2}-s\right)} - \frac{i\, 2^{1-4s}\,\Gamma(s)}{\left(-1+e^{4\pi}\right)\sqrt{\pi}\,\Gamma\left(\frac{3}{2}-s\right)} - \frac{i\, 9^{1-2s}\,\Gamma(s)}{2\left(-1+e^{6\pi}\right)\sqrt{\pi}\,\Gamma\left(\frac{3}{2}-s\right)} \right) ds \quad \text{for } 0 < \gamma < 1$$

Now, calculating the following two expressions in degrees:

[1+(((((2/(8Pi)+((sin(2)))/(((e^(2Pi)-1))+((sin(8)))/(((e^(4Pi)-1)))+((sin(18)))/(((e^(6Pi)-1))))))))]^(2Pi)

we obtain:

Input:

$$\left(1 + \left(\frac{2}{8\pi} + \frac{\sin(2^\circ)}{e^{2\pi}-1} + \frac{\sin(8^\circ)}{e^{4\pi}-1} + \frac{\sin(18^\circ)}{e^{6\pi}-1}\right)\right)^{2\pi}$$

Decimal approximation:

1.618475527677377311537442130867785411641926899393566691212...

1.6184755276… result that is a very good approximation to the value of the golden ratio 1,618033988749...

Alternate forms:

$$\left(1+\frac{\sqrt{5}-1}{4\left(e^{6\pi}-1\right)}+\frac{1}{4\pi}+\frac{\sin\left(\frac{\pi}{90}\right)}{e^{2\pi}-1}+\frac{\sin\left(\frac{2\pi}{45}\right)}{e^{4\pi}-1}\right)^{2\pi}$$

$$\left(\left(4\left(e^{2\pi}-1\right)\left(1+e^{2\pi}\right)\left(1+e^{2\pi}+e^{4\pi}\right)\pi\right)\Big/\left(e^{6\pi}\left(4\pi\left(\sin(2°)+1\right)+1\right)+4e^{4\pi}\pi\left(2\sin(2°)+\sin(8°)\right)+\pi\left(4\sin(2°)+4\sin(8°)-5+\sqrt{5}\right)+e^{2\pi}\left(\pi\left(8\sin(2°)+4\sin(8°)-5+\sqrt{5}\right)-1\right)-1+e^{8\pi}\left(1+4\pi\right)\right)\right)^{-2\pi}$$

We obtain also:

1/10^52(((24/10^3+2/10^3+1+(((((2/(8Pi)+((sin(2)))/(((e^(2Pi)-1)))+((sin(8)))/(((e^(4Pi)-1)))+((sin(18)))/(((e^(6Pi)-1)))))))))))

Input:

$$\frac{1}{10^{52}}\left(\frac{24}{10^3}+\frac{2}{10^3}+1+\left(\frac{2}{8\pi}+\frac{\sin(2°)}{e^{2\pi}-1}+\frac{\sin(8°)}{e^{4\pi}-1}+\frac{\sin(18°)}{e^{6\pi}-1}\right)\right)$$

Exact result:

$$\frac{\frac{\sin(2°)}{e^{2\pi}-1}+\frac{\sin(8°)}{e^{4\pi}-1}+\frac{513}{500}+\frac{\sqrt{5}-1}{4\left(e^{6\pi}-1\right)}+\frac{1}{4\pi}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

$1.1056432536499916413946123726584607803899245605511607\ldots \times 10^{-52}$

$1.1056432536\ldots*10^{-52}$ result practically equal to the value of Cosmological Constant $1.1056*10^{-52}\ m^{-2}$

Alternate forms:

$$\frac{\frac{513}{500}+\frac{\sqrt{5}-1}{4\left(e^{6\pi}-1\right)}+\frac{1}{4\pi}+\frac{\sin\left(\frac{\pi}{90}\right)}{e^{2\pi}-1}+\frac{\sin\left(\frac{2\pi}{45}\right)}{e^{4\pi}-1}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\sin(2°)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,(e^{2\pi}-1)}+$$

$$\frac{\sin(8°)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,(e^{4\pi}-1)}+$$

$$\frac{513}{5\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}-$$

$$\frac{1}{40\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,(e^{6\pi}-1)}+$$

$$1\Big/\left(8\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\sqrt{5}\,(e^{6\pi}-1)\right)+$$

$$\frac{1}{40\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}$$

$$\Big(4\sin(2°)+4e^{6\pi}\sin(2°)+4\sin(8°)+4e^{4\pi}(2\sin(2°)+\sin(8°))+e^{2\pi}\left(8\sin(2°)+4\sin(8°)-1+\sqrt{5}\right)-1+\sqrt{5}\Big)\Big/$$
$$\left(40\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,(e^{2\pi}-1)(1+e^{2\pi})(1+e^{2\pi}+e^{4\pi})\right)+$$

$$\frac{513}{5\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+$$

$$\frac{1}{40\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi}$$

We have also:

12/(((2/(8Pi)+((sin(2)))/(((e^(2Pi)-1))+((sin(8)))/(((e^(4Pi)-1)))+((sin(18)))/(((e^(6Pi)-1)))))))-11

Where 11 is a Lucas number

Input:

$$\frac{12}{\frac{2}{8\pi}+\frac{\sin(2°)}{e^{2\pi}-1}+\frac{\sin(8°)}{e^{4\pi}-1}+\frac{\sin(18°)}{e^{6\pi}-1}}-11$$

Decimal approximation:

139.67189561009678070728104387711338073301056821632222288 18...

139.67189561… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternate forms:

$$\frac{48}{\frac{4\sin(2°)}{e^{2\pi}-1}+\frac{4\sin(8°)}{e^{4\pi}-1}+\frac{\sqrt{5}-1}{e^{6\pi}-1}+\frac{1}{\pi}}-11$$

$$\frac{12}{\frac{\sqrt{5}-1}{4\left(e^{6\pi}-1\right)}+\frac{1}{4\pi}+\frac{\sin\left(\frac{\pi}{90}\right)}{e^{2\pi}-1}+\frac{\sin\left(\frac{2\pi}{45}\right)}{e^{4\pi}-1}}-11$$

$$-\left(\left(48\pi^2\left(4\sin(2°)+8e^{2\pi}\sin(2°)+8e^{4\pi}\sin(2°)+4e^{6\pi}\sin(2°)+4\sin(8°)+4e^{2\pi}\sin(8°)+4e^{4\pi}\sin(8°)-1+\sqrt{5}-e^{2\pi}+\sqrt{5}\,e^{2\pi}\right)\right)\Big/\left(4\pi\sin(2°)+8e^{2\pi}\pi\sin(2°)+8e^{4\pi}\pi\sin(2°)+4e^{6\pi}\pi\sin(2°)+4\pi\sin(8°)+4e^{2\pi}\pi\sin(8°)+4e^{4\pi}\pi\sin(8°)-1-e^{2\pi}+e^{6\pi}+e^{8\pi}-\pi+\sqrt{5}\,\pi-e^{2\pi}\pi+\sqrt{5}\,e^{2\pi}\pi\right)\right)-11+48\pi$$

And again:

12/(((2/(8Pi)+((sin(2)))/(((e^(2Pi)-1))+((sin(8)))/(((e^(4Pi)-1))+((sin(18)))/(((e^(6Pi)-1))))))-29+(5+sqrt5)/2

Where 29 is a Lucas number

Input:

$$\frac{12}{\frac{2}{8\pi}+\frac{\sin(2°)}{e^{2\pi}-1}+\frac{\sin(8°)}{e^{4\pi}-1}+\frac{\sin(18°)}{e^{6\pi}-1}}-29+\frac{1}{2}\left(5+\sqrt{5}\right)$$

Exact result:

$$\frac{12}{\frac{\sin(2°)}{e^{2\pi}-1}+\frac{\sin(8°)}{e^{4\pi}-1}+\frac{\sqrt{5}-1}{4\left(e^{6\pi}-1\right)}+\frac{1}{4\pi}}-29+\frac{1}{2}\left(5+\sqrt{5}\right)$$

Decimal approximation:

125.2899295988466755554856307114790188507308773961279857440...

125.28992959… result very near to the dilaton mass calculated as a type of Higgs boson: 125 GeV for T = 0 and to the Higgs boson mass 125.18 GeV

Alternate forms:

$$\frac{1}{2}\left(\frac{96}{\frac{4\sin(2°)}{e^{2\pi}-1}+\frac{4\sin(8°)}{e^{4\pi}-1}+\frac{\sqrt{5}-1}{e^{6\pi}-1}+\frac{1}{\pi}}-53+\sqrt{5}\right)$$

$$-29+\frac{1}{2}\left(5+\sqrt{5}\right)+\frac{12}{\frac{\sqrt{5}-1}{4\left(e^{6\pi}-1\right)}+\frac{1}{4\pi}+\frac{\sin\left(\frac{\pi}{90}\right)}{e^{2\pi}-1}+\frac{\sin\left(\frac{2\pi}{45}\right)}{e^{4\pi}-1}}$$

$$\frac{1}{2}\left(-53+\sqrt{5}+96\pi\right)-$$

$$\left(48\pi^2\left(4\sin(2^\circ)+8e^{2\pi}\sin(2^\circ)+8e^{4\pi}\sin(2^\circ)+4e^{6\pi}\sin(2^\circ)+4\sin(8^\circ)+\right.\right.$$
$$\left.\left.4e^{2\pi}\sin(8^\circ)+4e^{4\pi}\sin(8^\circ)-1+\sqrt{5}-e^{2\pi}+\sqrt{5}\,e^{2\pi}\right)\right)\Big/$$
$$\left(4\pi\sin(2^\circ)+8e^{2\pi}\pi\sin(2^\circ)+8e^{4\pi}\pi\sin(2^\circ)+4e^{6\pi}\pi\sin(2^\circ)+\right.$$
$$4\pi\sin(8^\circ)+4e^{2\pi}\pi\sin(8^\circ)+4e^{4\pi}\pi\sin(8^\circ)-1-$$
$$\left.e^{2\pi}+e^{6\pi}+e^{8\pi}-\pi+\sqrt{5}\,\pi-e^{2\pi}\pi+\sqrt{5}\,e^{2\pi}\pi\right)$$

Now, we have that:

$$\int_0^\infty \frac{\sin 2nx}{x(\cosh \pi x + \cos \pi x)} = \frac{\pi}{4} - 2\left\{\frac{e^{-n}\cos n}{\cosh\frac{\pi}{2}} - \frac{e^{-3n}\cos 3n}{3\cosh\frac{3\pi}{2}} + \&c\right\}$$

If $\alpha\beta = \frac{\pi^2}{4}$, then

$$\frac{1}{\cosh\alpha + \cos\alpha} - \frac{1}{3(\cosh 3\alpha + \cos 3\alpha)} + \&c$$

$$+\frac{2\cos\beta\cosh\beta}{\cosh\frac{\pi}{2}\cdot(\cosh 2\beta + \cos 2\beta)} - \frac{2\cos 3\beta\cosh 3\beta}{3\cosh\frac{3\pi}{2}(\cosh 6\beta + \cos 6\beta)}$$

$$+\frac{2\cos 5\beta\cosh 5\beta}{5\cosh\frac{5\pi}{2}(\cosh 10\beta + \cos 10\beta)} - \&c$$

1/(((cosh(Pi/2)+cos(Pi/2)))) –
1/(((3(cosh(3Pi/2)+cos(3Pi/2)))))+(((2cos(Pi/2)cosh(Pi/2))))/(((cosh(Pi/2)*(cosh(Pi)+cos(Pi)))))- ((2cos(3Pi/2)cosh(3Pi/2)))/(((3cosh(3Pi/2)*(cosh(3Pi)+cos(3Pi)))))

+(((2cos((5Pi)/2)cosh((5Pi)/2))))/(((5cosh((5Pi)/2)*(cosh((10Pi)/2)+cos((10Pi)/2)))))

From:

1/(((cosh(Pi/2)+cos(Pi/2)))) –
1/(((3(cosh(3Pi/2)+cos(3Pi/2)))))+(((2cos(Pi/2)cosh(Pi/2))))/(((cosh(Pi/2)*(cosh(Pi)+cos(Pi)))))- ((2cos(3Pi/2)cosh(3Pi/2)))/(((3cosh(3Pi/2)*(cosh(3Pi)+cos(3Pi)))))

Input:

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

cosh(x) is the hyperbolic cosine function

Exact result:

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

sech(x) is the hyperbolic secant function

Decimal approximation:

0.392548437916802679240635951021784129507495098450634708724...

0.392548437916…

Property:

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

Alternate forms:

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

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

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

Alternative representations:

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

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

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

Series representations:

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

$$\frac{1}{\cosh\left(\frac{\pi}{2}\right)+\cos\left(\frac{\pi}{2}\right)} - \frac{1}{3\left(\cosh\left(\frac{3\pi}{2}\right)+\cos\left(\frac{3\pi}{2}\right)\right)} + \frac{2\left(\cos\left(\frac{\pi}{2}\right)\cosh\left(\frac{\pi}{2}\right)\right)}{\cosh\left(\frac{\pi}{2}\right)(\cosh(\pi)+\cos(\pi))} - \frac{2\cos\left(\frac{3\pi}{2}\right)\cosh\left(\frac{3\pi}{2}\right)}{3\cosh\left(\frac{3\pi}{2}\right)(\cosh(3\pi)+\cos(3\pi))} = \sum_{k=0}^{\infty} \frac{4(-1)^k(1+2k)\left(7+2k+2k^2\right)}{3\left(1+2k+2k^2\right)\left(5+2k+2k^2\right)\pi}$$

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

Integral representation:

$$\frac{1}{\cosh\left(\frac{\pi}{2}\right)+\cos\left(\frac{\pi}{2}\right)} - \frac{1}{3\left(\cosh\left(\frac{3\pi}{2}\right)+\cos\left(\frac{3\pi}{2}\right)\right)} + \frac{2\left(\cos\left(\frac{\pi}{2}\right)\cosh\left(\frac{\pi}{2}\right)\right)}{\cosh\left(\frac{\pi}{2}\right)(\cosh(\pi)+\cos(\pi))} - \frac{2\cos\left(\frac{3\pi}{2}\right)\cosh\left(\frac{3\pi}{2}\right)}{3\cosh\left(\frac{3\pi}{2}\right)(\cosh(3\pi)+\cos(3\pi))} = \int_0^{\infty} \frac{6t^i-2t^{3i}}{3\pi+3\pi t^2}\,dt$$

Half-argument formula:

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

Multiple-argument formulas:

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

$$\frac{1}{\cosh\left(\frac{\pi}{2}\right)+\cos\left(\frac{\pi}{2}\right)}-\frac{1}{3\left(\cosh\left(\frac{3\pi}{2}\right)+\cos\left(\frac{3\pi}{2}\right)\right)}+\frac{2\left(\cos\left(\frac{\pi}{2}\right)\cosh\left(\frac{\pi}{2}\right)\right)}{\cosh\left(\frac{\pi}{2}\right)(\cosh(\pi)+\cos(\pi))}-\frac{2\cos\left(\frac{3\pi}{2}\right)\cosh\left(\frac{3\pi}{2}\right)}{3\cosh\left(\frac{3\pi}{2}\right)(\cosh(3\pi)+\cos(3\pi))}=\frac{\operatorname{sech}^3\left(\frac{\pi}{6}\right)}{4-3\operatorname{sech}^2\left(\frac{\pi}{6}\right)}-\frac{\operatorname{sech}^3\left(\frac{\pi}{2}\right)}{3\left(4-3\operatorname{sech}^2\left(\frac{\pi}{2}\right)\right)}$$

+(((2cos((5Pi)/2)cosh((5Pi)/2))))/(((5cosh((5Pi)/2)*(cosh((10Pi)/2)+cos((10Pi)/2)))))

Input:

$$\frac{2\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)}$$

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

Result:

0

0

Alternative representations:

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)}=\frac{2\cosh\left(-\frac{5i\pi}{2}\right)\cos\left(-\frac{5i\pi}{2}\right)}{5\cos\left(-\frac{5i\pi}{2}\right)(\cosh(-5i\pi)+\cos(-5i\pi))}$$

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)}=\frac{2\cosh\left(\frac{5i\pi}{2}\right)\cos\left(-\frac{5i\pi}{2}\right)}{5\cos\left(-\frac{5i\pi}{2}\right)(\cosh(5i\pi)+\cos(-5i\pi))}$$

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)}=\frac{2\cosh\left(-\frac{5i\pi}{2}\right)\cos\left(\frac{5i\pi}{2}\right)}{5\cos\left(\frac{5i\pi}{2}\right)(\cosh(-5i\pi)+\cos(5i\pi))}$$

Series representations:

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = \frac{2\sum_{k=0}^{\infty}\frac{\left(-\frac{25}{4}\right)^k\pi^{2k}}{(2k)!}}{5\sum_{k=0}^{\infty}\frac{\left((-25)^k+25^k\right)\pi^{2k}}{(2k)!}}$$

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = \frac{2\sum_{k=0}^{\infty}\frac{\left(-\frac{25}{4}\right)^k\pi^{2k}}{(2k)!}}{5\sum_{k=0}^{\infty}\left(\frac{(-25)^k\pi^{2k}}{(2k)!}+\frac{i\left(5\pi-\frac{i\pi}{2}\right)^{1+2k}}{(1+2k)!}\right)}$$

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = \frac{2\sum_{k=0}^{\infty}\frac{\left(-\frac{25}{4}\right)^k\pi^{2k}}{(2k)!}}{5\left(I_0(5\pi)+2\sum_{k=1}^{\infty}I_{2k}(5\pi)+\sum_{k=0}^{\infty}\frac{(-25)^k\pi^{2k}}{(2k)!}\right)}$$

Integral representations:

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = -\frac{-2+5\pi\int_0^1\sin\left(\frac{5\pi t}{2}\right)dt}{10+\int_0^1 25\pi(\sinh(5\pi t)-\sin(5\pi t))\,dt}$$

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = -\frac{2\int_{\frac{\pi}{2}}^{\frac{5\pi}{2}}\sin(t)\,dt}{5+\int_0^1\frac{5}{2}\pi\left(10\sinh(5\pi t)-9\sin\left(\frac{1}{2}(\pi+9\pi t)\right)\right)dt}$$

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = -\frac{2\int_{\frac{\pi}{2}}^{\frac{5\pi}{2}}\sin(t)\,dt}{5\int_{\frac{i\pi}{2}}^{5\pi}\left(\sinh(t)+\frac{9\sin\left(\frac{5(-1+i)\pi-9t}{-10+i}\right)}{-10+i}\right)dt}$$

Half-argument formulas:

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = \left(2(-1)^{\lfloor(\pi+\mathrm{Re}(5\pi))/(2\pi)\rfloor}\sqrt{\frac{1}{2}(1+\cos(5\pi))}\left(1-\left(1+(-1)^{\lfloor-(\pi+\mathrm{Re}(5\pi))/(2\pi)\rfloor+\lfloor(\pi+\mathrm{Re}(5\pi))/(2\pi)\rfloor}\right)\theta(-\mathrm{Im}(5\pi))\right)\right)\Big/\left(5\left(\sqrt{\frac{1}{2}(1+\cosh(10\pi))}+(-1)^{\lfloor(\pi+\mathrm{Re}(10\pi))/(2\pi)\rfloor}\sqrt{\frac{1}{2}(1+\cos(10\pi))}\left(1-\left(1+(-1)^{\lfloor-(\pi+\mathrm{Re}(10\pi))/(2\pi)\rfloor+\lfloor(\pi+\mathrm{Re}(10\pi))/(2\pi)\rfloor}\right)\theta(-\mathrm{Im}(10\pi))\right)\right)\right)$$

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = \left(2(-1)^{\lfloor(\pi+\operatorname{Re}(5\pi))/(2\pi)\rfloor}\sqrt{\frac{1}{2}(1+\cos(5\pi))}\left(1-\left(1+(-1)^{\lfloor-(\pi+\operatorname{Re}(5\pi))/(2\pi)\rfloor+\lfloor(\pi+\operatorname{Re}(5\pi))/(2\pi)\rfloor}\right)\theta(-\operatorname{Im}(5\pi))\right)\right) \Big/ \left(5\left((-1)^{\lfloor(\pi+\operatorname{Re}(10\pi))/(2\pi)\rfloor}\sqrt{\frac{1}{2}(1+\cos(10\pi))}\left(1-\left(1+(-1)^{\lfloor-(\pi+\operatorname{Re}(10\pi))/(2\pi)\rfloor+\lfloor(\pi+\operatorname{Re}(10\pi))/(2\pi)\rfloor}\right)\theta(-\operatorname{Im}(10\pi))\right)+(-1)^{\lfloor(\pi+\operatorname{Im}(10\pi))/(2\pi)\rfloor}\sqrt{\frac{1}{2}(1+\cosh(10\pi))}\left(1-\left(1+(-1)^{\lfloor-(\pi+\operatorname{Im}(10\pi))/(2\pi)\rfloor+\lfloor(\pi+\operatorname{Im}(10\pi))/(2\pi)\rfloor}\right)\theta(\operatorname{Re}(10\pi))\right)\right)\right)$$

Multiple-argument formulas:

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = \frac{-1+2\cos^2\left(\frac{5\pi}{4}\right)}{5\left(\cos^2\left(\frac{5\pi}{2}\right)+\sinh^2\left(\frac{5\pi}{2}\right)\right)}$$

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = \frac{-1+2\cos^2\left(\frac{5\pi}{4}\right)}{5\left(-1+\cosh^2\left(\frac{5\pi}{2}\right)+\cos^2\left(\frac{5\pi}{2}\right)\right)}$$

$$\frac{2\left(\cos\left(\frac{5\pi}{2}\right)\cosh\left(\frac{5\pi}{2}\right)\right)}{5\cosh\left(\frac{5\pi}{2}\right)\left(\cosh\left(\frac{10\pi}{2}\right)+\cos\left(\frac{10\pi}{2}\right)\right)} = \frac{1-2\sin^2\left(\frac{5\pi}{4}\right)}{5\cosh^2\left(\frac{5\pi}{2}\right)-5\sin^2\left(\frac{5\pi}{2}\right)}$$

0.392548437916…. + 0 = 0.392548437916…

We have also:

1/10^52[(((sech(π/2) - 1/3 sech((3 π)/2))))+1/golden ratio+(76+18)/10^3+11/10^4]

Where 76, 18 and 11 are Lucas numbers

Input:

$$\frac{1}{10^{52}}\left(\left(\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)\right)+\frac{1}{\phi}+\frac{76+18}{10^3}+\frac{11}{10^4}\right)$$

sech(x) is the hyperbolic secant function

ϕ is the golden ratio

Exact result:

$$\frac{\frac{1}{\phi}+\frac{951}{10000}+\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

1.105682426666975274452227853874222472278042782563975... × 10^{-52}

1.105682426…*10^{-52} result practically equal to the value of Cosmological Constant 1.1056*10^{-52} m^{-2}

Property:

$$\frac{\frac{951}{10000}+\frac{1}{\phi}+\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$ is a transcendental number

Alternate forms:

$$\frac{\frac{951}{10000}+\frac{1}{\phi}+\frac{1}{\cosh\left(\frac{\pi}{2}\right)}-\frac{1}{3\cosh\left(\frac{3\pi}{2}\right)}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\frac{5000\sqrt{5}-4049}{10000}+\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\frac{951}{10000}+\frac{2}{1+\sqrt{5}}+\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

cosh(x) is the hyperbolic cosine function

Alternative representations:

$$\frac{\left(\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)\right)+\frac{1}{\phi}+\frac{76+18}{10^3}+\frac{11}{10^4}}{10^{52}}=\frac{\frac{1}{\phi}+\frac{1}{\cosh\left(\frac{\pi}{2}\right)}-\frac{1}{3\cosh\left(\frac{3\pi}{2}\right)}+\frac{94}{10^3}+\frac{11}{10^4}}{10^{52}}$$

$$\frac{\left(\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)\right)+\frac{1}{\phi}+\frac{76+18}{10^3}+\frac{11}{10^4}}{10^{52}}=\frac{\csc\left(\frac{\pi}{2}+\frac{i\pi}{2}\right)-\frac{1}{3}\csc\left(\frac{\pi}{2}+\frac{3i\pi}{2}\right)+\frac{1}{\phi}+\frac{94}{10^3}+\frac{11}{10^4}}{10^{52}}$$

$$\frac{\left(\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)\right)+\frac{1}{\phi}+\frac{76+18}{10^3}+\frac{11}{10^4}}{10^{52}}=\frac{\frac{1}{\phi}+\frac{1}{\cos\left(\frac{i\pi}{2}\right)}-\frac{1}{3\cos\left(\frac{3i\pi}{2}\right)}+\frac{94}{10^3}+\frac{11}{10^4}}{10^{52}}$$

Series representations:

$$\frac{\left(\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)\right)+\frac{1}{\phi}+\frac{76+18}{10^3}+\frac{11}{10^4}}{10^{52}}=$$
$$\frac{951}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+$$
$$\frac{1}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\phi}+$$
$$\sum_{k=0}^{\infty}\frac{e^{(-3/2-(3-i)k)\pi}\left(-1+3e^{\pi+2k\pi}\right)}{15\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

$$\frac{\left(\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)\right)+\frac{1}{\phi}+\frac{76+18}{10^3}+\frac{11}{10^4}}{10^{52}}=$$
$$\frac{951}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+$$
$$\frac{1}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\phi}+$$
$$\sum_{k=0}^{\infty}\left((-1)^k(1+2k)\left(7+2k+2k^2\right)\right)\Big/$$
$$\left(7\,500\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(1+2k+2k^2\right)\left(5+2k+2k^2\right)\pi\right)$$

$$\frac{\left(\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)\right)+\frac{1}{\phi}+\frac{76+18}{10^3}+\frac{11}{10^4}}{10^{52}}=$$
$$\frac{951}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}+$$
$$\frac{1}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\phi}+$$
$$\sum_{k=0}^{\infty}\frac{i\,2^{-52-k}\left(\operatorname{Li}_{-k}\left(-i e^{z_0}\right)-\operatorname{Li}_{-k}\left(i e^{z_0}\right)\right)\left(3(\pi-2z_0)^k-(3\pi-2z_0)^k\right)}{6\,661\,338\,147\,750\,939\,242\,541\,790\,008\,544\,921\,875\,k!}\quad \text{for } \frac{1}{2}+\frac{i z_0}{\pi}\notin\mathbb{Z}$$

Integral representation:

$$\frac{\left(\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)\right)+\frac{1}{\phi}+\frac{76+18}{10^3}+\frac{11}{10^4}}{10^{52}} = \frac{951}{100\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \frac{1}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\phi} + \int_0^\infty -\left(\left(\left(-3+t^{2i}\right)t^i\right)/\left(15\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,\pi\left(1+t^2\right)\right)\right)dt$$

And again:

48/(((sech(π/2) - 1/3 sech((3 π)/2))))+3

Where 3 is a Fibonacci number

Input:

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+3$$

sech(x) is the hyperbolic secant function

Decimal approximation:

125.27790347282745768309841340736884896533932600110375437 14...

125.277903472… 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

Property:

$$3+\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}$$ is a transcendental number

Alternate forms:

$$3-\frac{144}{\operatorname{sech}\left(\frac{3\pi}{2}\right)-3\operatorname{sech}\left(\frac{\pi}{2}\right)}$$

$$\frac{3\left(-2+3\cosh(\pi)+24\cosh\left(\frac{3\pi}{2}\right)\right)}{3\cosh(\pi)-2}$$

$$3+\frac{48}{\frac{1}{\cosh\left(\frac{\pi}{2}\right)}-\frac{1}{3\cosh\left(\frac{3\pi}{2}\right)}}$$

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

Alternative representations:

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+3=3+\frac{48}{\frac{1}{\cosh\left(\frac{\pi}{2}\right)}-\frac{1}{3\cosh\left(\frac{3\pi}{2}\right)}}$$

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+3=3+\frac{48}{\frac{1}{\cos\left(\frac{i\pi}{2}\right)}-\frac{1}{3\cos\left(\frac{3i\pi}{2}\right)}}$$

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+3=3+\frac{48}{\csc\left(\frac{\pi}{2}+\frac{i\pi}{2}\right)-\frac{1}{3}\csc\left(\frac{\pi}{2}+\frac{3i\pi}{2}\right)}$$

Series representations:

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+3=3+\frac{48}{\sum_{k=0}^{\infty}\frac{2}{3}e^{(-3/2-(3-i)k)\pi}\left(-1+3e^{\pi+2k\pi}\right)}$$

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+3=3+\frac{48}{\sum_{k=0}^{\infty}\frac{4(-1)^k(1+2k)(7+2k+2k^2)}{3(1+2k+2k^2)(5+2k+2k^2)\pi}}$$

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+3=3-\frac{144i}{\sum_{k=0}^{\infty}\frac{\left(\operatorname{Li}_{-k}(-ie^{z_0})-\operatorname{Li}_{-k}(ie^{z_0})\right)\left(3\left(\frac{\pi}{2}-z_0\right)^k-\left(\frac{3\pi}{2}-z_0\right)^k\right)}{k!}}$$

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

Integral representation:

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+3=3+\frac{72\pi}{\int_0^{\infty}-\frac{\left(-3+t^{2i}\right)t^i}{1+t^2}\,dt}$$

And:

48/(((sech(π/2) - 1/3 sech((3 π)/2))))+18-1/golden ratio

Input:

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+18-\frac{1}{\phi}$$

sech(x) is the hyperbolic secant function

ϕ is the golden ratio

Decimal approximation:

139.6598694840775628348938265730032108476190168212979915092...

139.6598694… result practically equal to the rest mass of Pion meson 139.57 MeV

Property:

$$18-\frac{1}{\phi}+\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}$$ is a transcendental number

Alternate forms:

$$18-\frac{1}{\phi}+\frac{48}{\frac{1}{\cosh\left(\frac{\pi}{2}\right)}-\frac{1}{3\cosh\left(\frac{3\pi}{2}\right)}}$$

$$18-\frac{2}{1+\sqrt{5}}+\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}$$

$$\frac{1}{2}\left(37-\sqrt{5}\right)+\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}$$

cosh(x) is the hyperbolic cosine function

Alternative representations:

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+18-\frac{1}{\phi}=18-\frac{1}{\phi}+\frac{48}{\frac{1}{\cosh\left(\frac{\pi}{2}\right)}-\frac{1}{3\cosh\left(\frac{3\pi}{2}\right)}}$$

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+18-\frac{1}{\phi}=18-\frac{1}{\phi}+\frac{48}{\frac{1}{\cos\left(\frac{i\pi}{2}\right)}-\frac{1}{3\cos\left(\frac{3i\pi}{2}\right)}}$$

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+18-\frac{1}{\phi}=18-\frac{1}{\phi}+\frac{48}{\csc\left(\frac{\pi}{2}+\frac{i\pi}{2}\right)-\frac{1}{3}\csc\left(\frac{\pi}{2}+\frac{3i\pi}{2}\right)}$$

Series representations:

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+18-\frac{1}{\phi}=18-\frac{1}{\phi}-\frac{72\,e^{(3\pi)/2}}{\sum_{k=0}^{\infty}e^{(-3+i)k\pi}\left(1-3\,e^{\pi+2k\pi}\right)}$$

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+18-\frac{1}{\phi}=18-\frac{1}{\phi}+\frac{48}{\sum_{k=0}^{\infty}\frac{4(-1)^k(1+2k)(7+2k+2k^2)}{3(1+2k+2k^2)(5+2k+2k^2)\pi}}$$

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+18-\frac{1}{\phi}=$$
$$18-\frac{1}{\phi}+\frac{48}{\sum_{k=0}^{\infty}\frac{i\left(\operatorname{Li}_{-k}\left(-i\,e^{z_0}\right)-\operatorname{Li}_{-k}\left(i\,e^{z_0}\right)\right)\left(3\left(\frac{\pi}{2}-z_0\right)^k-\left(\frac{3\pi}{2}-z_0\right)^k\right)}{3\,k!}}\quad\text{for }\frac{1}{2}+\frac{i z_0}{\pi}\notin\mathbb{Z}$$

Integral representation:

$$\frac{48}{\operatorname{sech}\left(\frac{\pi}{2}\right)-\frac{1}{3}\operatorname{sech}\left(\frac{3\pi}{2}\right)}+18-\frac{1}{\phi}=18-\frac{1}{\phi}+\frac{72\pi}{\int_0^{\infty}-\frac{\left(-3+t^{2i}\right)t^i}{1+t^2}\,dt}$$

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If $\alpha\beta=\frac{\pi^2}{2}$, then

$$\frac{\cos\alpha}{\cosh\alpha-\cos\alpha}-\frac{\cos 3\alpha}{3(\cosh 3\alpha-\cos 3\alpha)}+\&c$$
$$=\frac{\pi^3}{32\alpha^2}-\frac{\pi}{8}+\frac{\sin\beta\sinh\beta}{\cosh 2\beta+\cos 2\beta}\cdot\frac{\coth\pi}{1}$$
$$+\frac{\sin 2\beta\sinh 2\beta}{\cosh 4\beta+\cos 4\beta}\cdot\frac{\coth 2\pi}{2}+\&c$$

Pi^3/((32*(Pi^2)/2))-Pi/8+(((sin(Pi/2)sinh(Pi/2)*coth(Pi))))/(((cosh(Pi)+cos(Pi))))+(((sin(Pi)sinh(Pi)coth(2Pi))))/(((2((cosh(2Pi)+cos(2Pi))))))

Input:

$$\frac{\pi^3}{32\times\frac{\pi^2}{2}}-\frac{\pi}{8}+\frac{\sin\left(\frac{\pi}{2}\right)\sinh\left(\frac{\pi}{2}\right)\coth(\pi)}{\cosh(\pi)+\cos(\pi)}+\frac{\sin(\pi)\sinh(\pi)\coth(2\pi)}{2(\cosh(2\pi)+\cos(2\pi))}$$

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

$\coth(x)$ is the hyperbolic cotangent function

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

Exact result:

$$\frac{\sinh\left(\frac{\pi}{2}\right)\coth(\pi)}{\cosh(\pi)-1}-\frac{\pi}{16}$$

Decimal approximation:

0.021732054764090002439002440311683086602599827285163308916...

0.02173205476…

Alternate forms:

$$\frac{e^{\pi/2}\coth(\pi)}{e^{\pi}-1}-\frac{\pi}{16}$$

$$-\frac{\pi}{16}+\frac{\cosh(\pi)\sinh\left(\frac{\pi}{2}\right)}{(-1+\cosh(\pi))\sinh(\pi)}$$

$$-\frac{-\pi+\pi\cosh(\pi)-16\sinh\left(\frac{\pi}{2}\right)\coth(\pi)}{16(\cosh(\pi)-1)}$$

Alternative representations:

$$\frac{\pi^3}{\frac{32\pi^2}{2}}-\frac{\pi}{8}+\frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)}+\frac{\sin(\pi)(\sinh(\pi)\coth(2\pi))}{2(\cosh(2\pi)+\cos(2\pi))}=-\frac{\pi}{8}+\frac{\cos(0)\left(-e^{-\pi/2}+e^{\pi/2}\right)\left(1+\frac{2}{-1+e^{2\pi}}\right)}{2\left(\frac{1}{2}\left(e^{-\pi}+e^{\pi}\right)+\frac{1}{2}\left(e^{-i\pi}+e^{i\pi}\right)\right)}+\frac{\cos\left(-\frac{\pi}{2}\right)\left(-e^{-\pi}+e^{\pi}\right)\left(1+\frac{2}{-1+e^{4\pi}}\right)}{2\left(2\left(\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)+\frac{1}{2}\left(e^{-2i\pi}+e^{2i\pi}\right)\right)\right)}+\frac{\pi^3}{16\pi^2}$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\,(\sinh(\pi)\coth(2\pi))}{2\,(\cosh(2\pi)+\cos(2\pi))} = -\frac{\pi}{8} + \frac{\left(-e^{-\pi/2}+e^{\pi/2}\right)\left(-e^{-(i\pi)/2}+e^{(i\pi)/2}\right)\left(1+\frac{2}{-1+e^{2\pi}}\right)}{2\,(2\,i)\left(\cosh(-i\pi)+\frac{1}{2}\left(e^{-\pi}+e^{\pi}\right)\right)} + \frac{\left(-e^{-\pi}+e^{\pi}\right)\left(-e^{-i\pi}+e^{i\pi}\right)\left(1+\frac{2}{-1+e^{4\pi}}\right)}{2\,(2\,i)\left(2\left(\cosh(-2\,i\pi)+\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)\right)\right)} + \frac{\pi^3}{16\pi^2}$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\,(\sinh(\pi)\coth(2\pi))}{2\,(\cosh(2\pi)+\cos(2\pi))} = -\frac{\pi}{8} - \frac{i\left(\cos(0)\cos\left(\frac{\pi}{2}-\frac{i\pi}{2}\right)\left(1+\frac{2}{-1+e^{2\pi}}\right)\right)}{\frac{1}{2}\left(e^{-\pi}+e^{\pi}\right)+\frac{1}{2}\left(e^{-i\pi}+e^{i\pi}\right)} - \frac{i\left(\cos\left(-\frac{\pi}{2}\right)\cos\left(\frac{\pi}{2}-i\pi\right)\left(1+\frac{2}{-1+e^{4\pi}}\right)\right)}{2\left(\frac{1}{2}\left(e^{-2\pi}+e^{2\pi}\right)+\frac{1}{2}\left(e^{-2i\pi}+e^{2i\pi}\right)\right)} + \frac{\pi^3}{16\pi^2}$$

Series representations:

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\,(\sinh(\pi)\coth(2\pi))}{2\,(\cosh(2\pi)+\cos(2\pi))} = -\frac{-\pi+\pi\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}+16\sum_{k=0}^{\infty}\frac{\left(\frac{2}{\pi}\right)^{-1-2k}}{(1+2k)!}+32\sum_{k_1=1}^{\infty}\sum_{k_2=0}^{\infty}\frac{\left(\frac{2}{\pi}\right)^{-1-2k_2}q^{2k_1}}{(1+2k_2)!}}{16\left(-1+\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}\right)} \quad \text{for } q=e^{\pi}$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\,(\sinh(\pi)\coth(2\pi))}{2\,(\cosh(2\pi)+\cos(2\pi))} = \frac{\pi\left(1-\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}+4\sqrt{\pi}\sum_{k_1=-\infty}^{\infty}\sum_{k_2=0}^{\infty}\frac{\operatorname{Res}_{s=-k_2}\frac{\left(-\frac{1}{16}\right)^{-s}\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}}{\pi+\pi k_1^2}\right)}{16\left(-1+\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}\right)}$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\,(\sinh(\pi)\coth(2\pi))}{2\,(\cosh(2\pi)+\cos(2\pi))} = -\frac{-\pi+\pi^{3/2}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{\left(-\frac{1}{4}\right)^{-s}\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}-16\sum_{k_1=-\infty}^{\infty}\sum_{k_2=0}^{\infty}\frac{\left(\frac{2}{\pi}\right)^{-1-2k_2}}{(1+2k_2)!\left(\pi+\pi k_1^2\right)}}{16\left(-1+\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{\left(-\frac{1}{4}\right)^{-s}\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)}$$

Integral representations:

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\left(\sinh(\pi)\coth(2\pi)\right)}{2\left(\cosh(2\pi)+\cos(2\pi)\right)} = -\frac{\pi\int_0^1 \sinh(\pi t)\,dt - \int_0^1\int_0^1 \cosh\left(\frac{\pi t_1}{2}\right)\sec^2\left(\left(\frac{1}{2}+i\right)\pi t_2\right)dt_2\,dt_1}{16\int_0^1 \sinh(\pi t)\,dt}$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\left(\sinh(\pi)\coth(2\pi)\right)}{2\left(\cosh(2\pi)+\cos(2\pi)\right)} = -\frac{\pi\left(-1+\int_{\frac{i\pi}{2}}^{\pi}\sinh(t)\,dt - \int_0^1\int_0^1\cosh\left(\frac{\pi t_1}{2}\right)\sec^2\left(\left(\frac{1}{2}+i\right)\pi t_2\right)dt_2\,dt_1\right)}{16\left(-1+\int_{\frac{i\pi}{2}}^{\pi}\sinh(t)\,dt\right)}$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\left(\sinh(\pi)\coth(2\pi)\right)}{2\left(\cosh(2\pi)+\cos(2\pi)\right)} = -\frac{-2i\left(\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{\pi^2/(16s)+s}}{s^{3/2}}\,ds\right)\int_{\frac{i\pi}{2}}^{\pi}\operatorname{csch}^2(t)\,dt + \pi^{3/2}\int_0^1\sinh(\pi t)\,dt}{16\sqrt{\pi}\int_0^1\sinh(\pi t)\,dt} \quad \text{for } \gamma > 0$$

Half-argument formulas:

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\left(\sinh(\pi)\coth(2\pi)\right)}{2\left(\cosh(2\pi)+\cos(2\pi)\right)} = -\frac{\pi}{16} + \frac{\sqrt{\frac{1}{2}(-1+\cosh(\pi))}\,(1+\cosh(2\pi))\operatorname{csch}(2\pi)}{-1+\sqrt{\frac{1}{2}(1+\cosh(2\pi))}}$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\left(\sinh(\pi)\coth(2\pi)\right)}{2\left(\cosh(2\pi)+\cos(2\pi)\right)} = -\frac{\pi}{16} + \frac{\sqrt{\frac{1}{2}(-1+\cosh(\pi))}\,\sinh(2\pi)}{(-1+\cosh(2\pi))\left(-1+\sqrt{\frac{1}{2}(1+\cosh(2\pi))}\right)}$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\,(\sinh(\pi)\coth(2\pi))}{2\,(\cosh(2\pi)+\cos(2\pi))} = -\frac{\pi}{16} + \frac{\sqrt{\frac{(-1+\cosh(\pi))\,(1+\cosh(2\pi))}{2\,(-1+\cosh(2\pi))}}}{-1+\sqrt{\frac{1}{2}\,(1+\cosh(2\pi))}}$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\,(\sinh(\pi)\coth(2\pi))}{2\,(\cosh(2\pi)+\cos(2\pi))} = -\frac{\pi}{16} + \frac{\sqrt{\frac{1}{2}\,(-1+\cosh(\pi))}\;(\coth(2\pi)+\operatorname{csch}(2\pi))}{-1+\sqrt{\frac{1}{2}\,(1+\cosh(2\pi))}}$$

Multiple-argument formulas:

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\,(\sinh(\pi)\coth(2\pi))}{2\,(\cosh(2\pi)+\cos(2\pi))} = \frac{1}{16}\left(-\pi + 8\coth(\pi)\operatorname{csch}\left(\frac{\pi}{2}\right)\right)$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\,(\sinh(\pi)\coth(2\pi))}{2\,(\cosh(2\pi)+\cos(2\pi))} = \frac{\pi - \pi\cosh(\pi) + 8\cosh(\pi)\operatorname{sech}\left(\frac{\pi}{2}\right)}{16\,(-1+\cosh(\pi))}$$

$$\frac{\pi^3}{\frac{32\pi^2}{2}} - \frac{\pi}{8} + \frac{\sin\left(\frac{\pi}{2}\right)\left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right)}{\cosh(\pi)+\cos(\pi)} + \frac{\sin(\pi)\,(\sinh(\pi)\coth(2\pi))}{2\,(\cosh(2\pi)+\cos(2\pi))} = -\frac{\pi}{16} + \cosh\left(\frac{\pi}{4}\right)\coth(\pi)\operatorname{csch}^2\left(\frac{\pi}{2}\right)\sinh\left(\frac{\pi}{4}\right)$$

3/(((-π/16 + (coth(π) sinh(π/2))/(-1 + cosh(π)))))+golden ratio

Input:

$$\frac{3}{-\frac{\pi}{16} + \frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}} + \phi$$

$\coth(x)$ is the hyperbolic cotangent function

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

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

ϕ is the golden ratio

Decimal approximation:

139.6629649704807680310769270466441587129278063567806963376...

139.66296497… result practically equal to the rest mass of Pion meson 139.57 MeV

Alternate forms:

$$\phi + \frac{3}{-\frac{\pi}{16} + \frac{\cosh(\pi)\sinh\left(\frac{\pi}{2}\right)}{(-1+\cosh(\pi))\sinh(\pi)}}$$

$$\frac{1}{2}\left(1+\sqrt{5}\right) + \frac{3}{\frac{\sinh\left(\frac{\pi}{2}\right)\coth(\pi)}{\cosh(\pi)-1} - \frac{\pi}{16}}$$

$$\frac{1}{2}\left(1+\sqrt{5}\right) - \frac{48\,(\cosh(\pi)-1)}{-\pi + \pi\cosh(\pi) - 16\sinh\left(\frac{\pi}{2}\right)\coth(\pi)}$$

Alternative representations:

$$\frac{3}{-\frac{\pi}{16} + \frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}} + \phi = \phi + \frac{3}{-\frac{\pi}{16} + \frac{\left(-e^{-\pi/2}+e^{\pi/2}\right)\left(1+\frac{2}{-1+e^{2\pi}}\right)}{2\,(-1+\cos(-i\,\pi))}}$$

$$\frac{3}{-\frac{\pi}{16} + \frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}} + \phi = \phi + \frac{3}{-\frac{\pi}{16} - \frac{i\left(\cos\left(\frac{\pi}{2}-\frac{i\,\pi}{2}\right)\left(1+\frac{2}{-1+e^{2\pi}}\right)\right)}{-1+\cos(-i\,\pi)}}$$

$$\frac{3}{-\frac{\pi}{16} + \frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}} + \phi = \phi + \frac{3}{-\frac{\pi}{16} - \frac{i\cot(-i\,\pi)\left(-e^{-\pi/2}+e^{\pi/2}\right)}{2\left(-1+\frac{1}{2}\left(e^{-\pi}+e^{\pi}\right)\right)}}$$

Series representations:

$$\frac{3}{-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}}+\phi=\phi+\frac{3}{-\frac{\pi}{16}+\frac{\left(-1-2\sum_{k=1}^{\infty}q^{2k}\right)\sum_{k=0}^{\infty}\frac{\left(\frac{2}{\pi}\right)^{-1-2k}}{(1+2k)!}}{-1+\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}}} \quad \text{for } q=e^{\pi}$$

$$\frac{3}{-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}}+\phi=\frac{1}{2}+\frac{\sqrt{5}}{2}+\frac{3}{-\frac{\pi}{16}+\frac{\pi^{3/2}\left(-1-2\sum_{k=1}^{\infty}q^{2k}\right)\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{\left(-\frac{1}{16}\right)^{-s}\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}}{4\left(-1+\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}\right)}} \quad \text{for } q=e^{\pi}$$

$$\frac{3}{-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}}+\phi=\frac{1}{2}+\frac{\sqrt{5}}{2}+\frac{3}{-\frac{\pi}{16}+\frac{\left(-1-2\sum_{k=1}^{\infty}q^{2k}\right)\sum_{k=0}^{\infty}\frac{\left(\frac{2}{\pi}\right)^{-1-2k}}{(1+2k)!}}{-1+\sqrt{\pi}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{\left(-\frac{1}{4}\right)^{-s}\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}}} \quad \text{for } q=e^{\pi}$$

Integral representations:

$$\frac{3}{-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}}+\phi=\phi+\frac{48}{-\pi-\int_0^1\int_0^1\cosh\left(\frac{\pi t_1}{2}\right)\sec^2\left(\left(\frac{1}{2}+i\right)\pi t_2\right)dt_2\,dt_1}$$

$$\frac{3}{-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}}+\phi=\left(192\sqrt{\pi}-2\pi^{3/2}-2\sqrt{5}\,\pi^{3/2}+96\,i\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{\pi^2/(4s)+s}}{\sqrt{s}}\,ds-i\pi\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{\pi^2/(4s)+s}}{\sqrt{s}}\,ds-i\sqrt{5}\,\pi\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{\pi^2/(4s)+s}}{\sqrt{s}}\,ds-2\int_0^1\int_0^1\cosh\left(\frac{\pi t_1}{2}\right)\sec^2\left(\left(\frac{1}{2}+i\right)\pi t_2\right)dt_2\,dt_1\right)\Big/\left(2\pi\left(-2\sqrt{\pi}-i\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{e^{\pi^2/(4s)+s}}{\sqrt{s}}\,ds-\int_0^1\int_0^1\cosh\left(\frac{\pi t_1}{2}\right)\sec^2\left(\left(\frac{1}{2}+i\right)\pi t_2\right)dt_2\,dt_1\right)\right) \quad \text{for } \gamma>0$$

$$\frac{3}{-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}}+\phi = \left(i\left(-2\,i\left(\int_{-i\,\infty+\gamma}^{i\,\infty+\gamma}\frac{e^{\pi^2/(16 s)+s}}{s^{3/2}}\,ds\right)\int_{\frac{i\pi}{2}}^{\pi}\operatorname{csch}^2(t)\,dt-2\,i\sqrt{5}\left(\int_{-i\,\infty+\gamma}^{i\,\infty+\gamma}\frac{e^{\pi^2/(16 s)+s}}{s^{3/2}}\,ds\right)\int_{\frac{i\pi}{2}}^{\pi}\operatorname{csch}^2(t)\,dt-96\sqrt{\pi}\int_0^1\sinh(\pi\,t)\,dt+\pi^{3/2}\int_0^1\sinh(\pi\,t)\,dt+\sqrt{5}\,\pi^{3/2}\int_0^1\sinh(\pi\,t)\,dt\right)\right)\Big/\left(2\left(2\left(\int_{-i\,\infty+\gamma}^{i\,\infty+\gamma}\frac{e^{\pi^2/(16 s)+s}}{s^{3/2}}\,ds\right)\int_{\frac{i\pi}{2}}^{\pi}\operatorname{csch}^2(t)\,dt+i\,\pi^{3/2}\int_0^1\sinh(\pi\,t)\,dt\right)\right)\quad \text{for } \gamma>0$$

We have also:

1/10^52(((1+1/12+55/10^5+(((-π/16 + (coth(π) sinh(π/2))/(-1 + cosh(π))))))))

Where 55 is a Fibonacci number

Input:

$$\frac{1}{10^{52}}\left(1+\frac{1}{12}+\frac{55}{10^5}+\left(-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}\right)\right)$$

$\coth(x)$ is the hyperbolic cotangent function

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

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

Exact result:

$$\frac{\frac{65\,033}{60\,000}-\frac{\pi}{16}+\frac{\sinh\left(\frac{\pi}{2}\right)\coth(\pi)}{\cosh(\pi)-1}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Decimal approximation:

$1.105615388097423335772335773645016419935933160618 4966\ldots\times 10^{-52}$

$1.105615388\ldots*10^{-52}$ result practically equal to the value of Cosmological Constant $1.1056*10^{-52}\ m^{-2}$

Alternate forms:

$$\frac{65\,033}{600\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} - \frac{\pi}{160\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \frac{e^{\pi/2}\coth(\pi)}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,(e^{\pi}-1)}$$

$$\frac{65\,033 - 3750\,\pi}{600\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} + \left(\sinh\left(\frac{\pi}{2}\right)\coth(\pi)\right) \Big/ (10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,(\cosh(\pi)-1))$$

$$\frac{\frac{65033}{60000} - \frac{\pi}{16} + \frac{\cosh(\pi)\sinh\left(\frac{\pi}{2}\right)}{(-1+\cosh(\pi))\sinh(\pi)}}{10\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}$$

Alternative representations:

$$\frac{1+\frac{1}{12}+\frac{55}{10^5}+\left(-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}\right)}{10^{52}} = \frac{1+\frac{1}{12}-\frac{\pi}{16}+\frac{55}{10^5}+\frac{\left(-e^{-\pi/2}+e^{\pi/2}\right)\left(1+\frac{2}{-1+e^{2\pi}}\right)}{2\,(-1+\cos(-i\,\pi))}}{10^{52}}$$

$$\frac{1+\frac{1}{12}+\frac{55}{10^5}+\left(-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}\right)}{10^{52}} = \frac{1+\frac{1}{12}-\frac{\pi}{16}+\frac{55}{10^5}-\frac{i\left(\cos\left(\frac{\pi}{2}-\frac{i\,\pi}{2}\right)\left(1+\frac{2}{-1+e^{2\pi}}\right)\right)}{-1+\cos(-i\,\pi)}}{10^{52}}$$

$$\frac{1+\frac{1}{12}+\frac{55}{10^5}+\left(-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}\right)}{10^{52}} = \frac{1+\frac{1}{12}-\frac{\pi}{16}+\frac{55}{10^5}-\frac{i\cot(-i\,\pi)\left(-e^{-\pi/2}+e^{\pi/2}\right)}{2\left(-1+\frac{1}{2}\left(e^{-\pi}+e^{\pi}\right)\right)}}{10^{52}}$$

Series representations:

$$\frac{1+\frac{1}{12}+\frac{55}{10^5}+\left(-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}\right)}{10^{52}} = -\left(\left(65\,033-3750\,\pi-65\,033\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}+3750\,\pi\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}+60\,000\sum_{k=0}^{\infty}\frac{\left(\frac{2}{\pi}\right)^{-1-2k}}{(1+2k)!}+120\,000\sum_{k_1=1}^{\infty}\sum_{k_2=0}^{\infty}\frac{\left(\frac{2}{\pi}\right)^{-1-2k_2}q^{2k_1}}{(1+2k_2)!}\right)\Big/\left(600\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}\right)\right)\right) \text{ for } q=e^{\pi}$$

$$\frac{1+\frac{1}{12}+\frac{55}{10^5}+\left(-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}\right)}{10^{52}} = \left(-65\,033+3750\,\pi+65\,033\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}-3750\,\pi\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}+15\,000\,\pi^{3/2}\sum_{k_1=-\infty}^{\infty}\sum_{k_2=0}^{\infty}\frac{\operatorname{Res}_{s=-k_2}\frac{\left(-\frac{1}{16}\right)^{-s}\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{3}{2}-s\right)}}{\pi+\pi k_1^2}\right)\Big/\left(600\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+\sum_{k=0}^{\infty}\frac{\pi^{2k}}{(2k)!}\right)\right)$$

$$\frac{1+\frac{1}{12}+\frac{55}{10^5}+\left(-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}\right)}{10^{52}} =$$

$$-\left(\left(65\,033-3750\,\pi-65\,033\,\sqrt{\pi}\,\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{\left(-\frac{1}{4}\right)^{-s}\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}+3750\,\pi^{3/2}\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{\left(-\frac{1}{4}\right)^{-s}\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}-60\,000\sum_{k_1=-\infty}^{\infty}\sum_{k_2=0}^{\infty}\frac{\left(\frac{2}{\pi}\right)^{-1-2k_2}}{(1+2k_2)!\,(\pi+\pi k_1^2)}\right)\Big/\left(600\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+\sqrt{\pi}\,\sum_{j=0}^{\infty}\operatorname{Res}_{s=-j}\frac{\left(-\frac{1}{4}\right)^{-s}\pi^{-2s}\,\Gamma(s)}{\Gamma\left(\frac{1}{2}-s\right)}\right)\right)\right)$$

Integral representations:

$$\frac{1+\frac{1}{12}+\frac{55}{10^5}+\left(-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}\right)}{10^{52}} =$$

$$-\left(\left(-65\,033\int_0^1\sinh(\pi t)\,dt+3750\,\pi\int_0^1\sinh(\pi t)\,dt-\int_0^1\int_0^1\cosh\left(\frac{\pi t_1}{2}\right)\sec^2\left(\left(\frac{1}{2}+i\right)\pi t_2\right)dt_2\,dt_1\right)\Big/\left(600\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\int_0^1\sinh(\pi t)\,dt\right)\right)$$

$$\frac{1+\frac{1}{12}+\frac{55}{10^5}+\left(-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}\right)}{10^{52}} =$$

$$-\left(\left(65\,033-3750\,\pi-65\,033\int_{\frac{i\pi}{2}}^{\pi}\sinh(t)\,dt+3750\,\pi\int_{\frac{i\pi}{2}}^{\pi}\sinh(t)\,dt-\int_0^1\int_0^1\cosh\left(\frac{\pi t_1}{2}\right)\sec^2\left(\left(\frac{1}{2}+i\right)\pi t_2\right)dt_2\,dt_1\right)\Big/\left(600\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\left(-1+\int_{\frac{i\pi}{2}}^{\pi}\sinh(t)\,dt\right)\right)\right)$$

$$\frac{1+\frac{1}{12}+\frac{55}{10^5}+\left(-\frac{\pi}{16}+\frac{\coth(\pi)\sinh\left(\frac{\pi}{2}\right)}{-1+\cosh(\pi)}\right)}{10^{52}} =$$

$$-\left(\left(-7500\, i \left(\int_{-i\,\infty+\gamma}^{i\,\infty+\gamma} \frac{e^{\pi^2/(16 s)+s}}{s^{3/2}}\, ds\right) \int_{\frac{i\pi}{2}}^{\pi} \operatorname{csch}^2(t)\, dt - 65\,033\sqrt{\pi} \int_0^1 \sinh(\pi t)\, dt + 3750\,\pi^{3/2} \int_0^1 \sinh(\pi t)\, dt\right) \Big/ \left(600\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\sqrt{\pi} \int_0^1 \sinh(\pi t)\, dt\right)\right) \text{ for } \gamma > 0$$

Appendix

From

$$R_{\mu\nu} - \frac{1}{2} R g_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu},$$

We obtain:

$$\pi = \frac{c^4\left(R_{\mu\nu} - \frac{1}{2}Rg_{\mu\nu} + \Lambda g_{\mu\nu}\right)}{8GT_{\mu\nu}}$$

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

$$\left(\frac{24}{\sqrt{142}}\log\left\{\sqrt{\left(\frac{10+11\sqrt{2}}{4}\right)} + \sqrt{\left(\frac{10+7\sqrt{2}}{4}\right)}\right\}\right) = \left[\frac{c^4\left(R_{\mu\nu} - \frac{1}{2}Rg_{\mu\nu} + \Lambda g_{\mu\nu}\right)}{8GT_{\mu\nu}}\right]$$

We know that:

$G = 6.6743015 * 10^{-11}$

c = 299.792.458

$\Lambda = 1.1056 * 10^{-52}$

We have the following equation:

((((299792458)^4*(x-xy+(1.1056e-52)y)))) / (((8*6.6743015e-11*z))) = Pi

Input interpretation:

$$\frac{299\,792\,458^4\,(x - x\,y + 1.1056\times10^{-52}\,y)}{8\times6.6743015\times10^{-11}\,z} = \pi$$

Result:

$$\frac{1.51282\times10^{43}\,(x\,(-y) + x + 1.1056\times10^{-52}\,y)}{z} = \pi$$

Geometric figure:

pair of intersecting planes

Alternate form:

$$z = 5.32396\times10^{-10}\ y - 0.31831\ x\left(1.51282\times10^{43}\ y - 1.51282\times10^{43}\right)$$

Expanded form:

$$-\frac{15\,128\,191\,154\,277\,509\,208\,520\,589\,291\,525\,768\,493\,400\,064\ x\ y}{z} + \frac{15\,128\,191\,154\,277\,509\,208\,520\,589\,291\,525\,768\,493\,400\,064\ x}{z} + \frac{1.67257\times10^{-9}\ y}{z} = \pi$$

Solutions:

$$z \approx -2.19726\times10^{-13}\left(2.19157\times10^{55}\ y\,x - 2.19157\times10^{55}\ x - 2423\ y\right),$$
$$2.19157\times10^{55}\ x\,y - 2.19157\times10^{55}\ x - 2423\ y \neq 0$$

$$x \approx 1.1056\times10^{-52}, \quad z \approx 5.32396\times10^{-10}$$

Solution for the variable z:

$$z \approx -5.32396\times10^{-10}\,(9\,044\,862\,518\,089\,726\,230\,993\,936\,993\,213\,082\,285\,197\,812\,048\,068\,608\ x\ y - 9\,044\,862\,518\,089\,726\,230\,993\,936\,993\,213\,082\,285\,197\,812\,048\,068\,608\ x - y)$$

Implicit derivatives:

$$\frac{\partial x(y,z)}{\partial z} = -\frac{\pi}{15\,128\,191\,154\,277\,509\,208\,520\,589\,291\,525\,768\,493\,400\,064\,(-1+y)}$$

$$\frac{\partial x(y,z)}{\partial y} = \frac{1}{9\,044\,862\,518\,089\,725\,751\,402\,526\,395\,111\,288\,736\,371\,857\,504\,075\,776\,(-1+y)} - \frac{x}{-1+y}$$

$$\frac{\partial y(x,z)}{\partial z} = -((490\,322\,979\,597\,279\,540\,403\,766\,389\,263\,011\,\pi)/(820\,100\,885\,762\,183\,322\,927\,104\,(-1 + 9\,044\,862\,518\,089\,725\,751\,402\,526\,395\,111\,288\,736\,371\,857\,504\,075\,776\,x)))$$

$$\frac{\partial y(x,z)}{\partial x} = -\frac{9\,044\,862\,518\,089\,725\,751\,402\,526\,395\,111\,288\,736\,371\,857\,504\,075\,776\,(-1+y)}{-1+9\,044\,862\,518\,089\,725\,751\,402\,526\,395\,111\,288\,736\,371\,857\,504\,075\,776\,x}$$

$$\frac{\partial z(x,y)}{\partial y} = \frac{1}{\pi}\left(\frac{820\,100\,885\,762\,183\,322\,927\,104}{490\,322\,979\,597\,279\,540\,403\,766\,389\,263\,011} - 15\,128\,191\,154\,277\,509\,208\,520\,589\,291\,525\,768\,493\,400\,064\ x\right)$$

$$\frac{\partial z(x,y)}{\partial x} = -\frac{15\,128\,191\,154\,277\,509\,208\,520\,589\,291\,525\,768\,493\,400\,064\,(-1+y)}{\pi}$$

We obtain:

$x \approx 1.1056\times10^{-52}, \quad z \approx 5.32396\times10^{-10}$

thence, we have that:

((((299792458)^4*((((1.1056e-52)-(1.1056e-52)y+(1.1056e-52)))y)))) / (((8*6.6743015e-11*(5.32396e-10)))) = Pi

Input interpretation:

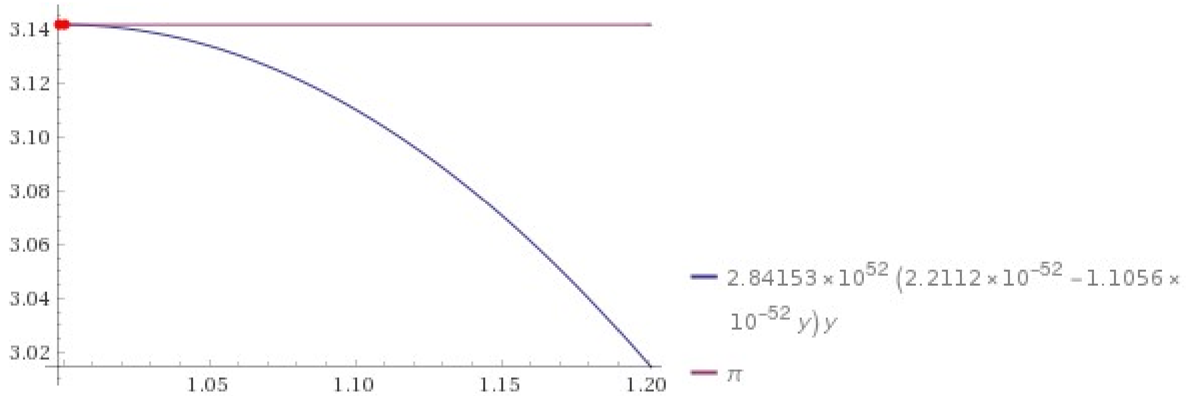
$$\frac{299\,792\,458^4\,((1.1056\times10^{-52} - 1.1056\times10^{-52}\,y + 1.1056\times10^{-52})\,y)}{8\times6.6743015\times10^{-11}\times5.32396\times10^{-10}} = \pi$$

Result:

$$2.84153\times10^{52}\,(2.2112\times10^{-52} - 1.1056\times10^{-52}\,y)\,y = \pi$$

2.84153e+52(2.2112e-52 – 1.1056e-52 * 1.00093)*1.00093

Plot:



Alternate forms:

$$-3.1416\,(y-2)\,y = \pi$$

$$y\,(6.28319 - 3.1416\,y) = \pi$$

$$-3.1416\,y^2 + 6.28319\,y - \pi = 0$$

Expanded form:

$6.28319\, y - 3.1416\, y^2 = \pi$

Alternate form assuming y is real:

$-3.1416\, y^2 + 6.28319\, y + 0 = \pi$

Solutions:

$y \approx 0.999068$

$y \approx 1.00093$

where we take the solution 1.00093

We have also that:

((((299792458)^4*(((((1.1056e-52)-(1.1056e-52)*1.00093+(1.1056e-52)))*1.00093)))) / (((8*6.6743015e-11*(1/x))))

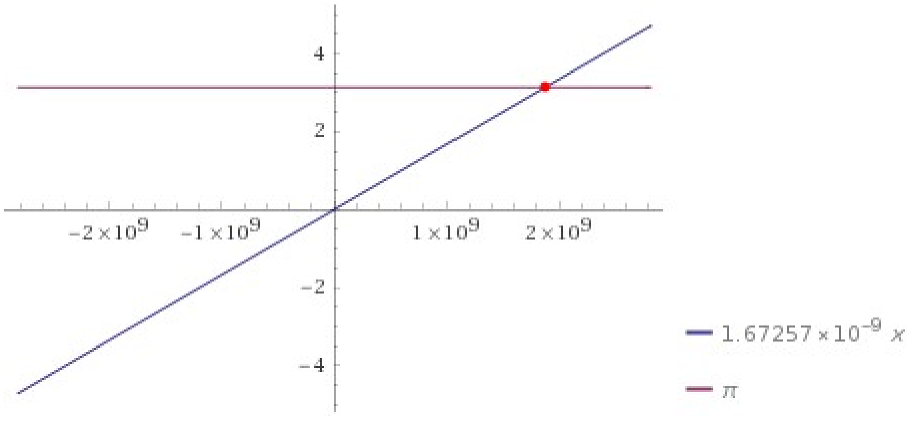
Input interpretation:

$$(299\,792\,458^4 ((1.1056\times 10^{-52} + 1.1056\times 10^{-52}\times(-1.00093) + 1.1056\times 10^{-52})\times 1.00093)) \Big/ \left(8\times 6.6743015\times 10^{-11}\times \frac{1}{x}\right) = \pi$$

Result:

$1.67257\times 10^{-9}\, x = \pi$

Plot:



Alternate form:

$1.67257\times 10^{-9}\, x - \pi = 0$

Alternate form assuming x is real:

$1.67257\times 10^{-9}\, x + 0 = \pi$

Solution:

$x \approx 1.8783\times 10^{9}$

$1.8783*10^9$

From which:

ln(1.8783×10^9)*1/13

Input interpretation:

$\log(1.8783\times 10^{9})\times \frac{1}{13}$

log(x) is the natural logarithm

Result:

1.64259...

$1.64259... \approx \zeta(2) = \frac{\pi^2}{6} = 1.644934\ ...$

And:

(((1.8783×10^9)*33021.1005))/2 = scientific notation

Where 33021.1005 is the value of a Ramanujan mock theta function

Input interpretation:

scientific notation	$\frac{1}{2}(1.8783\times 10^{9}\times 33\,021.1005)$

Result:

$3.1011766534575\times 10^{13}$

$3.1011766534575*10^{13}$ result very near to the value of the Ramanujan mock theta function $3.0773505768 * 10^{13}$

We have also that, from:

$$6.28319\, y - 3.1416\, y^2 = \pi$$

where, for y = 1.00093, we obtain:

(6.28319*1.00093) – (3.1416*1.00093)

Input interpretation:

$6.28319 \times 1.00093 - 3.1416 \times 1.00093$

Result:

3.1445116787

3.1445116787 ≈ π

Or:

2.84153e+52(2.2112e-52 – 1.1056e-52 * 1.00093)*1.00093

Input interpretation:

$2.84153 \times 10^{52} \left(2.2112 \times 10^{-52} + 1.1056 \times 10^{-52} \times (-1.00093)\right) \times 1.00093$

Result:

3.1415928508339932368

3.14159285….

From the Ramanujan's equation, we have:

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

24/(sqrt142) ln(((((10+11sqrt2)/4)^1/2+((((10+7sqrt2)/4)^1/2)))))

Input:

$$\frac{24}{\sqrt{142}} \log\left(\sqrt{\frac{1}{4}\left(10 + 11\sqrt{2}\right)} + \sqrt{\frac{1}{4}\left(10 + 7\sqrt{2}\right)}\right)$$

log(x) is the natural logarithm

Exact result:

$$12\sqrt{\frac{2}{71}}\log\left(\frac{1}{2}\sqrt{10+7\sqrt{2}}+\frac{1}{2}\sqrt{10+11\sqrt{2}}\right)$$

Decimal approximation:

3.141592653589793127379949506290255350331758331654956045001...

3.141592653...

Property:

$$12\sqrt{\frac{2}{71}}\log\left(\frac{1}{2}\sqrt{10+7\sqrt{2}}+\frac{1}{2}\sqrt{10+11\sqrt{2}}\right)$$ is a transcendental number

Alternate forms:

$$6\sqrt{\frac{2}{71}}\log\left(5+\frac{9}{\sqrt{2}}+\sqrt{\frac{127}{2}+45\sqrt{2}}\right)$$

$$6\sqrt{\frac{2}{71}}\log\left(5+\frac{9}{\sqrt{2}}+\sqrt{\frac{1}{2}\left(127+90\sqrt{2}\right)}\right)$$

$$6\sqrt{\frac{2}{71}}\left(-5\log(2)+2\log\left(\sqrt{2\left(10-7\sqrt{2}\right)}+2\sqrt{10-\sqrt{2}}+2^{3/4}\sqrt{7+5\sqrt{2}}+2\sqrt{10-i\sqrt{142}}+2\sqrt{10+i\sqrt{142}}\right)\right)$$

Alternative representations:

$$\frac{\log\left(\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}\right)24}{\sqrt{142}}=\frac{24\log_e\left(\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}\right)}{\sqrt{142}}$$

$$\frac{\log\left(\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}\right)24}{\sqrt{142}}=\frac{24\log(a)\log_a\left(\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}\right)}{\sqrt{142}}$$

$$\frac{\log\left(\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}\right)24}{\sqrt{142}} = -\frac{24\,\mathrm{Li}_1\left(1-\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}-\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}\right)}{\sqrt{142}}$$

Series representations:

$$\frac{\log\left(\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}\right)24}{\sqrt{142}} = 12\sqrt{\frac{2}{71}}\log\left(\frac{1}{2}\left(-2+\sqrt{10+7\sqrt{2}}+\sqrt{10+11\sqrt{2}}\right)\right) - 12\sqrt{\frac{2}{71}}\sum_{k=1}^{\infty}\frac{\left(-\frac{2}{-2+\sqrt{10+7\sqrt{2}}+\sqrt{10+11\sqrt{2}}}\right)^k}{k}$$

$$\frac{\log\left(\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}\right)24}{\sqrt{142}} = 12\sqrt{\frac{2}{71}}\log\left(-1+\frac{1}{2}\sqrt{10+7\sqrt{2}}+\frac{1}{2}\sqrt{10+11\sqrt{2}}\right) - 12\sqrt{\frac{2}{71}}\sum_{k=1}^{\infty}\frac{\left(-\frac{2}{-2+\sqrt{10+7\sqrt{2}}+\sqrt{10+11\sqrt{2}}}\right)^k}{k}$$

$$\frac{\log\left(\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}\right)24}{\sqrt{142}} = 24\,i\sqrt{\frac{2}{71}}\,\pi\left\lfloor\frac{\arg\left(\frac{1}{2}\sqrt{10+7\sqrt{2}}+\frac{1}{2}\sqrt{10+11\sqrt{2}}-x\right)}{2\pi}\right\rfloor + 12\sqrt{\frac{2}{71}}\log(x) - 12\sqrt{\frac{2}{71}}\sum_{k=1}^{\infty}\frac{\left(-\frac{1}{2}\right)^k\left(\sqrt{10+7\sqrt{2}}+\sqrt{10+11\sqrt{2}}-2x\right)^k x^{-k}}{k} \quad \text{for } x<0$$

Integral representations:

$$\frac{\log\left(\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}\right)24}{\sqrt{142}} = 12\sqrt{\frac{2}{71}}\int_1^{\frac{1}{2}\left(\sqrt{10+7\sqrt{2}}+\sqrt{10+11\sqrt{2}}\right)}\frac{1}{t}\,dt$$

$$\frac{\log\left(\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}\right)24}{\sqrt{142}} = -\frac{6i\sqrt{\frac{2}{71}}}{\pi}\int_{-i\infty+\gamma}^{i\infty+\gamma}\frac{\left(-1+\frac{1}{2}\sqrt{10+7\sqrt{2}}+\frac{1}{2}\sqrt{10+11\sqrt{2}}\right)^{-s}\Gamma(-s)^2\,\Gamma(1+s)}{\Gamma(1-s)}\,ds$$

for $-1 < \gamma < 0$

In conclusion, we have, from the sum of the two previous equations and dividing by 2:

1/2 * [24/(sqrt142) ln(((((10+11sqrt2)/4)^1/2+((((10+7sqrt2)/4)^1/2))))) + ((((299792458)^4*((((1.1056e-52)-(1.1056e-52)*1.00093+(1.1056e-52)))*1.00093)))) / (((8*6.6743015e-11*(5.32396e-10))))]

Input interpretation:

$$\frac{1}{2}\left(\frac{24}{\sqrt{142}}\log\left(\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}\right)+ \left(299\,792\,458^4\left(\left(1.1056\times10^{-52}+1.1056\times10^{-52}\times(-1.00093)+1.1056\times10^{-52}\right)\times 1.00093\right)\right)/\left(8\times6.6743015\times10^{-11}\times5.32396\times10^{-10}\right)\right)$$

log(x) is the natural logarithm

Result:

3.141592658293156178846946748628636297462981035948851372504...

3.141592658...

From the following equation, we obtain:

2.84153e+52(2.2112e-52 – 1.1056e-52 * 1.00093)*1.00093 = x/(sqrt142) ln(((((10+11sqrt2)/4)^1/2+((((10+7sqrt2)/4)^1/2)))))

Input interpretation:

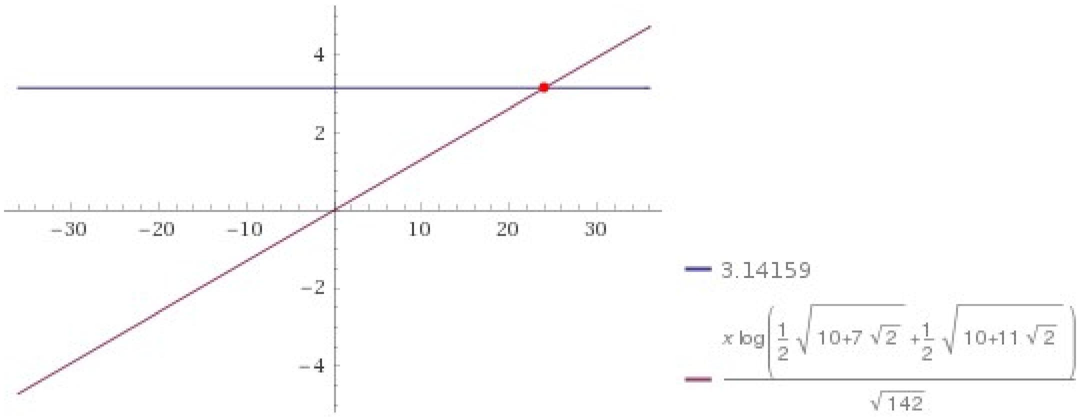
$$2.84153\times 10^{52}\left(2.2112\times 10^{-52}+1.1056\times 10^{-52}\times(-1.00093)\right)\times 1.00093 = \frac{x}{\sqrt{142}}\log\left(\sqrt{\frac{1}{4}\left(10+11\sqrt{2}\right)}+\sqrt{\frac{1}{4}\left(10+7\sqrt{2}\right)}\right)$$

log(x) is the natural logarithm

Result:

$$3.14159 = \frac{x\log\left(\frac{1}{2}\sqrt{10+7\sqrt{2}}+\frac{1}{2}\sqrt{10+11\sqrt{2}}\right)}{\sqrt{142}}$$

Plot:



Alternate forms:

$$3.14159 = \frac{x\log\left(5+\frac{9}{\sqrt{2}}+\sqrt{\frac{127}{2}+45\sqrt{2}}\right)}{2\sqrt{142}}$$

$$3.14159 = \frac{x\log\left(5+\frac{9}{\sqrt{2}}+\sqrt{\frac{1}{2}\left(127+90\sqrt{2}\right)}\right)}{2\sqrt{142}}$$

$$\frac{1}{284} x \left(-5 \sqrt{142} \log(2) + 2 \sqrt{142} \log\left(\sqrt{2\left(10 - 7\sqrt{2}\right)} + 2\sqrt{10 - \sqrt{2}} + 2^{3/4}\sqrt{7 + 5\sqrt{2}} + 2\sqrt{10 - i\sqrt{142}} + 2\sqrt{10 + i\sqrt{142}}\right)\right) = 3.14159$$

Solution:

$x \approx 24.$

24

This value is linked to the "Ramanujan function" (an elliptic modular function that satisfies the need for "conformal symmetry") that has 24 "modes" corresponding to the physical vibrations of a bosonic string.

From which:

2.84153e+52(2.2112e-52 – x* 1.00093)*1.00093 = 24/(sqrt142) ln(((((10+11sqrt2)/4)^1/2+((((10+7sqrt2)/4)^1/2)))))

Input interpretation:

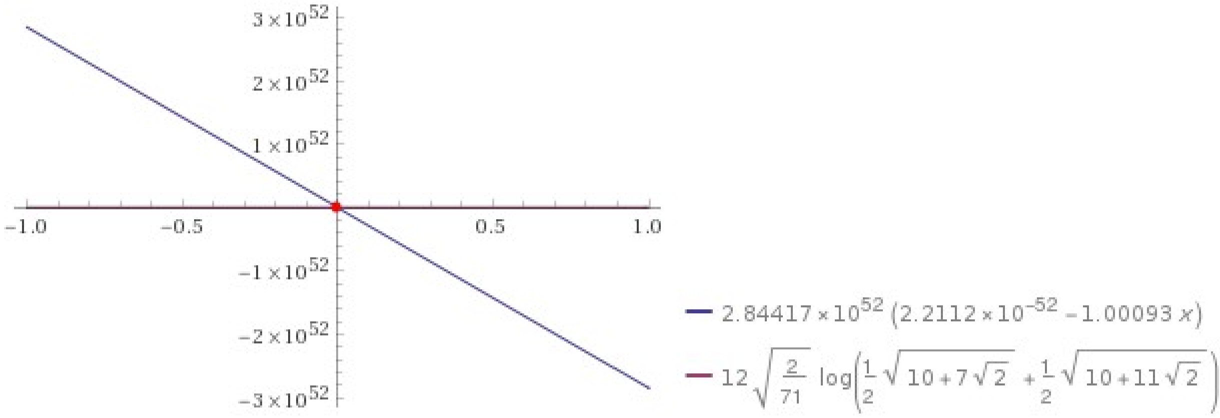
$$2.84153 \times 10^{52} \left(2.2112 \times 10^{-52} + x \times (-1.00093)\right) \times 1.00093 = \frac{24}{\sqrt{142}} \log\left(\sqrt{\frac{1}{4}\left(10 + 11\sqrt{2}\right)} + \sqrt{\frac{1}{4}\left(10 + 7\sqrt{2}\right)}\right)$$

$\log(x)$ is the natural logarithm

Result:

$$2.84417 \times 10^{52} \left(2.2112 \times 10^{-52} - 1.00093\, x\right) = 12\sqrt{\frac{2}{71}} \log\left(\frac{1}{2}\sqrt{10 + 7\sqrt{2}} + \frac{1}{2}\sqrt{10 + 11\sqrt{2}}\right)$$

Plot:



Alternate forms:

$$3.14744 - 2.84682\times10^{52}\,x = 0$$

$$6.28903 - 2.84682\times10^{52}\,x = 6\sqrt{\frac{2}{71}}\log\left(5+\frac{9}{\sqrt{2}}+\sqrt{\frac{127}{2}+45\sqrt{2}}\right)$$

$$2.84417\times10^{52}\,(2.2112\times10^{-52} - 1.00093\,x) = 6\sqrt{\frac{2}{71}}\log\left(5+\frac{9}{\sqrt{2}}+\sqrt{\frac{1}{2}\left(127+90\sqrt{2}\right)}\right)$$

Solution:

$x \approx 1.1056\times10^{-52}$

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

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