Les nombres en base e^{π}

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Résumé

Une expérience à grande échelle a été menée pour trouver des formules relatives à la base e^{π} . Les nombres en cette base sont

$$x = \sum_{n=0}^{\infty} \frac{a(n)}{e^{\pi n}}$$

La suite $a(n)$ est issue du catalogue OEIS. Ces expériences ont été inspirées par plusieurs faits. En effet, il est connu que la formule générant les partages d'entiers,

$$\prod_{k\geq 1} \frac{1}{1-x^k} = \sum_{n=0}^{\infty} p(n)\, x^n$$

est égale à

$$\frac{2^{3/8}\, \Gamma(3/4)}{\pi^{1/4}\, e^{\pi/24}} \qquad (1)$$

lorsqu'elle est évaluée au point $x = e^{-\pi}$. En analysant les 387007 suites du catalogue OEIS le modèle qui a été utilisé tient au fait que la somme infinie évaluée à e^{π}, est une expression qui permet d'être détectée à l'aide d'un programme comme lindep de Pari-Gp ou PSLQ (version Maple). Le procédé a permis de trouver 793 expressions similaires à (1).

La plupart des nombres réels connus en base 10 qui sont issus de l'analyse mathématique classique n'ont aucun motif dans leur développement décimal. Par contre en base e^{π} c'est beaucoup plus riche puisqu'une classe de nombres ont des coefficients qui sont issus justement de l'analyse, la combinatoire et la théorie des nombres. Les exemples sont nombreux et variés.

Pour détecter une relation avec des entiers, il est nécessaire de prendre le logarithme de la somme et d'évaluer à une certaine précision (160 chiffres décimaux) si le signe '=' est vérifié.

$$\log\left(\sum_{n=0}^{\infty}\frac{a(n)}{e^{k\pi n}}\right) \equiv [\pi, \log(\pi), \log(2), \log(3), \log\Gamma(3/4)] \qquad (2)$$

Le signe $\equiv$ signifie qu'il y a une identité avec 0 ou dit autrement, le logarithme de la somme est une combinaison linéaire de la liste des constantes. Cette hypothèse semble être la bonne puisque plus de 793 expressions ont été identifiées. La première version de cet article publié en 2023 en avait identifié 659. En rajoutant des éléments à la liste (2) :

$$\pi, \log(\pi), \log(2), \log(3), \log(5), \log\Gamma(1/3), \log\Gamma(1/4),$$
$$\log\Gamma(1/5), \log\Gamma(2/5), \log\Gamma(1/6), \log\Gamma(1/8), \log\Gamma(3/8), \log\Gamma(1/10),$$
$$\log\Gamma(3/10), \log\Gamma(1/12), \log\Gamma(5/12).$$

On obtient plus d'identités, de 659 à 793 y compris celles reliées aux fonctions de Ramanujan les plus connues.

La chose remarquable à propos de ces expressions est le fait que malgré la grande variété de contextes combinatoires, elles ont toutes le même modèle si on évalue la suite au point e^{π}. L'expérience est concluante, puisque 363 suites se réfèrent aux fonctions thêta, 262 aux fonctions Ramanujan et variantes et 57 aux partitions (partages) d'entiers. Par contre du travail reste à faire puisqu'il y a des milliers d'autres suites se référant aux fonctions thêta et des milliers aux partitions dans tous les contextes.

Note : Les suites étendues proviennent des fichiers 'b' du site OEIS, normalement une suite comporte environ 3 lignes pleines d'environ 80 caractères de termes. Dans bien des cas de figure il a été pensé depuis longtemps qu'une extension de la suite de base était nécessaire. Le choix a été fait de prendre les 2000 premiers termes de chaque suite (lorsque c'est disponible) et avec une précision de 160 décimales pour les sommes évaluées.

Index: la plupart des suites sont définies à partir de 0, certaines à partir de 1 ou un autre point de départ. Ça ne change en fait pas le résultat final puisque le facteur e^{π} apparaît alors dans l'expression finale, ce n'est qu'un décalage. J'ai donc pris ce point comme départ. Dans certains cas l'exposant est même fractionnaire.

Chaque page contient le numéro de la suite, le nom, la formule, les quelques premiers termes de la suite et la valeur en $x = e^{-\pi}$.

Autres approches

Le développement en base e^{π}

On peut y aller dans l'autre direction à partir d'une valeur connue. Un bon exemple est la suite A000122 qui énumère le nombre de façons de représenter n comme somme de 1 carré. Évaluée en $x = e^{-\pi}$ elle nous donne bien la valeur $\frac{\pi^{1/4}}{\Gamma\left(\frac{3}{4}\right)}$ mais si on effectue le développement en base e^{π} on obtient la suite :

1,2,0,0,2,0,0,0,0,2,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,2,0, …

Ça fonctionne bien sûr si on connait à l'avance le nombre $\frac{\pi^{1/4}}{\Gamma\left(\frac{3}{4}\right)}$.
Ce procédé ne fonctionne que si les termes de la suite $a(n)$ ne dépassent pas la valeur e^{π}. Le développement d'un nombre en base e^{π} utilise le même procédé que celui qu'on peut utiliser pour développer un nombre réel en base 2, 10 ou 16. Il est donc possible à partir de valeurs semblables à la formule (1) de remonter à l'envers. Un programme en a trouvé quelques exemples mais ce n'est pas assez pour en faire une méthode.

Les identités Rogers-Ramanujan

On considère ici les deux fonctions $G(q)$ et $H(q)$.

$$G(q) = \sum_{n=0}^{\infty} \frac{q^{n^2}}{(q;q)_n} = \frac{1}{(q;q^5)_\infty (q^4;q^5)_\infty} = 1 + q + q^2 + q^3 + 2q^4 + 2q^5 + 3q^6$$

$$H(q) = \sum_{n=0}^{\infty} \frac{q^{n^2+n}}{(q;q)_n} = \frac{1}{(q^2;q^5)_\infty (q^3;q^5)_\infty} = 1 + q^2 + q^3 + q^4 + q^5 + 2q^6 + \cdots$$

Et on s'intéresse à la fonction $R(q)$ bien connue

$$R(q) = q^{1/5} \prod_{k=0}^{\infty} \frac{(1-q^{5k+1})(1-q^{5k+4})}{(1-q^{5k+2})(1-q^{5k+3})} = q^{1/5} \frac{H(q)}{G(q)}$$

Qui a un développement en fraction continuée remarquable

$$R(q) = q^{1/5} \left[1 + \cfrac{q}{1 + \cfrac{q^2}{1 + \cfrac{q^3}{1 + \cdots}}} \right]$$

Quand $q = e^{-\pi}$ la valeur est algébrique, la valeur numérique est 0.5114284554037…

et plus exactement

$$\frac{1}{4}(\sqrt{5}+1)(\sqrt{5}-\sqrt{\sqrt{5}+2})(\sqrt{\sqrt{5}+2}+\sqrt[4]{5})$$

Mais ce qui est moins connu est la valeur quand elle est évaluée en $e^{-\pi/n}$

n	valeur en $e^{-\pi/n}$
1	.51142845540370351929463301354268
2	.60900295189734706892868001337065
3	.61729972602946859110062866515646
4	.61797449361217335219105975903425
5	.61802916937167616162641498260454
6	.61803359836699331081163334071515
7	.61803395712786281601119176526411
8	.61803398618842825100587467815680
9	.61803398854240941388707852692804
10	.61803398873308799018841882292394
11	.61803398874853344913923731603680
12	.61803398874978457135133206066600
13	.61803398874988591549361817618333
14	.61803398874989412463184337535911
15	.61803398874989478959331899935178
16	.61803398874989484345692221006610
17	.61803398874989484782001369310102
18	.61803398874989484817343541304887
19	.61803398874989484820206348848960
20	.61803398874989484820438243680879
21	.61803398874989484820457027763369
22	.61803398874989484820458549322731
23	.61803398874989484820458672573031
24	.61803398874989484820458682556626

Les valeurs à m sont presqu'exactement la $nième$ décimale de $\phi - 1$. La limite connue de $\phi - 1$ est facile à vérifier si on examine la fraction continuée de $R(q)$.

Le même phénomène d'approximation se produit avec A000122, $a(n)$ est le nombre de solutions de $k^2 = n$. La suite se lit : 1, 2, 0, 0, 2, 0, 0, 0, 0, 2, 0, 0, 0, 0, 0, 0, 2, 0, 0, …
Si on évalue en $e^{-\pi/n}$ on y voit apparaître un autre motif en construisant une petite table des valeurs on a

n	valeur en $e^{-\pi/n}$
1	1.08643481121330801457531612151 02
2	1.41949548808376612336218673135 17
3	1.73233035889803357021221785709 57
4	2.00001394936942483598255871491 14
5	2.23606865145840390415024699212 08
6	2.44948977468735155440609102979 78
7	2.64575131255376148271764058101 64
8	2.82842712481498625135544206257 41
9	3.00000000000315329110560386913 32
10	3.16227766016852296904234046087 41

11	3.31662479035540635919673896276 11
12	3.46410161513775488089046594559 94
13	3.60555127546398930633549642398 70
14	3.74165738677394138617643526584 66
15	3.87298334620741688520577665664 70
16	4.00000000000000000000118322769 29
17	4.12310562561766054982146256153 52

On devine assez vite que la fonction $\sqrt{n}$ à une précision de n décimales. La précision s'accroit quand n >> 1.

Références :

[1] Le catalogue des suites d'entier : https://oeis.org/ pour tous les numéros de suites apparaissant dans ce document.
[2] Fonction Tau de Ramanujan : https://mathworld.wolfram.com/TauFunction.html
[3] Fonction de Partition : https://mathworld.wolfram.com/PartitionFunctionP.html
[4] Sommes de carrés : https://mathworld.wolfram.com/SumofSquaresFunction.html
[5] Séries Theta : https://mathworld.wolfram.com/ThetaSeries.html
[6] Plouffe Simon, Neil Sloane, The Encyclopedia of Integer Sequences, Academic Press, 1995.
[7] Plouffe, Simon, Les nombres en base e^{π} (2023) disponible ici :
https://archive.org/details/all-articles/articles/Les%20nombres%20en%20base%20exp%28Pi%29%202023.pdf
http://plouffe.fr/articles/
[8] Theta functions sur Wikipedia : https://en.wikipedia.org/wiki/Theta_function

A000009 Expansion of Product_{m >= 1} (1 + x^m); number of partitions of n into distinct parts; number of partitions of n into odd parts.

$$\frac{e^{\frac{\pi}{24}}\ 2^{7/8}}{2}$$

1.045250214354711942547595012 2036

1,1,1,2,2,3,4,5,6,8,10,12,15,18,22,27,32,38,46,54,64,76,89,104,122,142,165,192,222,256,296,340,390,448,512,585,668,760,864,982,1113,1260,1426,1610,1816,2048,2304,2590,2910,3264,3658,4097,4582,5120,5718,6378

A000041 a(n) is the number of partitions of n (the partition numbers).

$$\frac{e^{-\frac{\pi}{24}}\ 2^{3/8}\ \Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

1.047209470046042130219798863 1655

1,1,2,3,5,7,11,15,22,30,42,56,77,101,135,176,231,297,385,490,627,792,1002,1255,1575,1958,2436,3010,3718,4565,5604,6842,8349,10143,12310,14883,17977,21637,26015,31185,37338,44583,53174,63261,75175,89134,105558,124754,147273,173525

A000118 Number of ways of writing n as a sum of 4 squares; also theta series of four-dimensional cubic lattice Z^4.

$$\frac{\pi}{\Gamma\left(\frac{3}{4}\right)^4}$$

1.393203929685676859184246260 3253

1,8,24,32,24,48,96,64,24,104,144,96,96,112,192,192,24,144,312,160,144,256,288,192,96,248,336,320,192,240,576,256,24,384,432,384,312,304,480,448,144,336,768,352,288,624,576,384,96,456,744,576,336,432,960,576,192

A000122 Expansion of Jacobi theta function theta_3(x) = Sum_{m =-oo..oo} x^(m^2) (number of integer solutions to k^2 = n).

$$\frac{\pi^{1/4}}{\Gamma\left(\frac{3}{4}\right)}$$

1.086434811213308014575316121 5102

1,2,0,0,2,0,0,0,0,2,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,

0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,2,0,0,0,0

A000132 Number of ways of writing n as a sum of 5 squares.

$$\frac{\pi^{5/4}}{\Gamma\left(\frac{3}{4}\right)^5}$$

1.513625248329697192054690256391 9

1,10,40,80,90,112,240,320,200,250,560,560,400,560,800,960,730,480,1240,1520,752,
1120,1840,1600,1200,1210,2000,2240,1600,1680,2720,3200,1480,1440,3680,3040,
2250,2800,3280,4160,2800,1920,4320,5040,2800,3472,5920

A000141 Number of ways of writing n as a sum of 6 squares.

$$\frac{\pi^{3/2}}{\Gamma\left(\frac{3}{4}\right)^6}$$

1.644455160916771031069445642914 1

1,12,60,160,252,312,544,960,1020,876,1560,2400,2080,2040,3264,4160,4092,3480,
4380,7200,6552,4608,8160,10560,8224,7812,10200,13120,12480,10104,14144,19200,
16380,11520,17400,24960,18396,16440,24480,27200

A000143 Number of ways of writing n as a sum of 8 squares.

$$\frac{\pi^{2}}{\Gamma\left(\frac{3}{4}\right)^8}$$

1.941017189691612429949896004798 3

1,16,112,448,1136,2016,3136,5504,9328,12112,14112,21312,31808,35168,38528,56448,
74864,78624,84784,109760,143136,154112,149184,194688,261184,252016,246176,
327040,390784,390240,395136,476672,599152,596736,550368,693504,859952

A000144 Number of ways of writing n as a sum of 10 squares.

$$\frac{\pi^{5/2}}{\Gamma\left(\frac{3}{4}\right)^{10}}$$

2.291061392381137492286068576237 2

1,20,180,960,3380,8424,16320,28800,52020,88660,129064,175680,262080,386920,
489600,600960,840500,1137960,1330420,1563840,2050344,2611200,2986560,

3358080,4194240,5318268,5878440,6299520,7862400,9619560

A000145 Number of ways of writing n as a sum of 12 squares.

$$\frac{\pi^3}{\Gamma\left(\frac{3}{4}\right)^{12}}$$

2.704232776265803306001809535067 7

1,24,264,1760,7944,25872,64416,133056,253704,472760,825264,1297056,1938336, 2963664,4437312,6091584,8118024,11368368,15653352,19822176,24832944, 32826112,42517728,51425088,61903776,78146664,98021616

A000152 Number of ways of writing n as a sum of 16 squares.

$$\frac{\pi^4}{\Gamma\left(\frac{3}{4}\right)^{16}}$$

3.767547730678324950795940861413 3

1,32,480,4480,29152,140736,525952,1580800,3994080,8945824,18626112,36714624, 67978880,118156480,197120256,321692928,509145568,772845120,1143441760, 1681379200,2428524096,3392205824,4658843520,6411152640

A000156 Number of ways of writing n as a sum of 24 squares.

$$\frac{\pi^6}{\Gamma\left(\frac{3}{4}\right)^{24}}$$

7.312874908230254200189153117560 7

1,48,1104,16192,170064,1362336,8662720,44981376,195082320,721175536, 2319457632,6631997376,17231109824,41469483552,93703589760,200343312768, 407488018512,793229226336,1487286966928,2697825744960,4744779429216

A000594 Ramanujan's tau function (or Ramanujan numbers, or tau numbers).

$$\frac{e^{\pi}\,\pi^6}{512\,\Gamma\left(\frac{3}{4}\right)^{24}}$$

0.330517559596328547438597582932 50

1,-24,252,-1472,4830,-6048,-16744,84480,-113643,-115920,534612,-370944,-577738, 401856,1217160,987136,-6905934,2727432,10661420,-7109760,-4219488,-12830688,

18643272,21288960,-25499225,13865712,-73279080,24647168

A000700 Expansion of Product_{k>=0} (1 + x^(2k+1)); number of partitions of n into distinct odd parts; number of self-conjugate partitions; number of symmetric Ferrers graphs with n nodes.

$$e^{-\frac{\pi}{24}}\ 2^{1/4}$$

1.043298262644687012527875688 8156

1,1,0,1,1,1,1,1,2,2,2,2,3,3,3,4,5,5,5,6,7,8,8,9,11,12,12,14,16,17,18,20,23,25,26,29,33,35,37,41,46,49,52,57,63,68,72,78,87,93,98,107,117,125,133,144,157,168,178,192,209,223,236,255,276,294,312,335,361,385

A000712 Generating function = Product_{m>=1} 1/(1 - x^m)^2; a(n) = number of partitions of n into parts of 2 kinds.

$$\frac{e^{-\frac{\pi}{12}}\ 2^{3/4}\ \Gamma\left(\frac{3}{4}\right)^2}{\sqrt{\pi}}$$

1.096647674154112409572412979 7593

1,2,5,10,20,36,65,110,185,300,481,752,1165,1770,2665,3956,5822,8470,12230,17490,24842,35002,49010,68150,94235,129512,177087,240840,326015,439190,589128,786814,1046705,1386930,1831065,2408658,3157789,4126070,5374390

A000716 Number of partitions of n into parts of 3 kinds.

$$\frac{2\,e^{-\frac{\pi}{8}}\ 2^{1/8}\ \Gamma\left(\frac{3}{4}\right)^3}{\pi^{3/4}}$$

1.148419829678152749767392718 8231

1,3,9,22,51,108,221,429,810,1479,2640,4599,7868,13209,21843,35581,57222,90882,142769,221910,341649,521196,788460,1183221,1762462,2606604,3829437,5590110,8111346,11701998,16790136,23964594,34034391,48104069,67679109,94800537,132230021,183686994,254170332

A000727 Expansion of Product_{k >= 1} (1 - x^k)^4.

$$\frac{e^{\frac{\pi}{6}}\ \pi\sqrt{2}}{4\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.83150670626724744966596392634565

1,-4,2,8,-5,-4,-10,8,9,0,14,-16,-10,-4,0,-8,14,20,2,0,-11,20,-32,-16,0,-4,14,8,-9,20,26,0,2,-28,0,-16,16,-28,-22,0,14,16,0,40,0,-28,26,32,-17,0,-32,-16,-22,0,-10,32,-34,-8,14,0,45,-4,38,8,0,0,-34,-8,38,0,-22,-56,2,-28,0,0,-10,20,64,-40,-20,44

A000728 Expansion of Product_{n>=1} (1-x^n)^5.

$$\frac{e^{\frac{5\pi}{24}}\ \pi^{5/4}\ 2^{1/8}}{4\ \Gamma\left(\frac{3}{4}\right)^5}$$

0.79402137781535628587400492096605

1,-5,5,10,-15,-6,-5,25,15,-20,9,-45,-5,25,20,10,15,20,-50,-35,-30,55,-50,15,80,1,50,-35,-45,-15,5,-50,-25,-55,85,51,50,10,-40,65,10,-10,-115,50,-115,-100,85,80,-30,5,20,45,70,65,45,-55,-100

A000729 Expansion of Product_{k >= 1} (1 - x^k)^6.

$$\frac{e^{\frac{\pi}{4}}\ \pi^{3/2}\ 2^{3/4}}{8\ \Gamma\left(\frac{3}{4}\right)^6}$$

0.75822593332778584280344454334574

1,-6,9,10,-30,0,11,42,0,-70,18,-54,49,90,0,-22,-60,0,-110,0,81,180,-78,0,130,-198,0,-182,-30,90,121,84,0,0,210,0,-252,-102,-270,170,0,0,-69,330,0,-38,420,0,-190,-390,0,-108,0,0,0,-300,99,442,210,0,418,-294,0,0,-510,378,-540,138,0

A000730 Expansion of Product_{n>=1} (1 - x^n)^7.

$$\frac{e^{\frac{7\pi}{24}}\ \pi^{7/4}\ 2^{3/8}}{8\ \Gamma\left(\frac{3}{4}\right)^7}$$

0.72404419079064411620167339982762

1,-7,14,7,-49,21,35,41,-49,-133,98,-21,126,112,-176,-105,-126,140,-35,147,259,98,-420,-224,238,-455,273,-14,322,406,-35,-7,-637,-196,245,-181,-574,462,147,924,217,-329,-140,-7,-371,-777

A000731 Expansion of Product (1 - x^k)^8 in powers of x.

$$\frac{e^{\frac{\pi}{3}}\ \pi^2}{8\ \Gamma\left(\frac{3}{4}\right)^8}$$

0.691403402567406529188714128773 92

1,-8,20,0,-70,64,56,0,-125,-160,308,0,110,0,-520,0,57,560,0,0,182,-512,-880,0,1190,-448,884,0,0,0,-1400,0,-1330,1000,1820,0,-646,1280,0,0,-1331,-2464,380,0,1120,0,2576,0,0,-880,1748,0,-3850,0,-3400,0,2703,4160,-2500,0,3458

A000735 Expansion of Product_{k>=1} (1 - x^k)^12.

$$\frac{e^{\frac{\pi}{2}}\ \pi^3\ \sqrt{2}}{32\ \Gamma\left(\frac{3}{4}\right)^{12}}$$

0.574906565970791942075109707726 62

1,-12,54,-88,-99,540,-418,-648,594,836,1056,-4104,-209,4104,-594,4256,-6480,-4752,-298,5016,17226,-12100,-5346,-1296,-9063,-7128,19494,29160,-10032,-7668,-34738,8712,-22572,21812,49248,-46872,67562,2508,-47520,-76912,-25191,67716

A000739 Expansion of Product_{k>=1} (1 - x^k)^16.

$$\frac{e^{\frac{2\pi}{3}}\ \pi^4}{64\ \Gamma\left(\frac{3}{4}\right)^{16}}$$

0.478038665081787213518128666645 50

1,-16,104,-320,260,1248,-3712,1664,6890,-7280,-5568,-4160,33176,4640,-74240,29824,14035,54288,27040,-142720,1508,-110240,289536,222720,-380770,-83200,-123904,142912,7640,408000,386048

A001934 Expansion of 1/theta_4(q)^2 in powers of q.

$$\frac{\sqrt{2}\ \Gamma\left(\frac{3}{4}\right)^2}{\sqrt{\pi}}$$

1.198140234735592207439922492280 4

1,4,12,32,76,168,352,704,1356,2532,4600,8160,14176,24168,40512,66880,108876,174984,277932,436640,679032,1046016,1597088,2418240,3632992,5417708,8022840,11802176,17252928,25070568,36223424,52053760,74414412

A001935 Number of partitions with no even part repeated; partitions of n in which no parts are multiples of 4.

$$\frac{e^{\frac{\pi}{8}}\sqrt{2}}{2}$$

1.047205818055365718125154393907 3

1,1,2,3,4,6,9,12,16,22,29,38,50,64,82,105,132,166,208,258,320,395,484,592,722,876, 1060,1280,1539,1846,2210,2636,3138,3728,4416,5222,6163,7256,8528,10006,11716, 13696,15986,18624,21666,25169,29190,33808,39104,45164

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*A001936 Expansion of q^(-1/4) * (eta(q^4) / eta(q))^2 in powers of q.*

$$\frac{e^{\frac{\pi}{4}}}{2}$$

1.096640025369007728279884829639 4

1,2,5,10,18,32,55,90,144,226,346,522,777,1138,1648,2362,3348,4704,6554,9056,12425, 16932,22922,30848,41282,54946,72768,95914,125842,164402,213901,277204, 357904,460448,590330,754368,960948,1220370,1545306

A001937 Expansion of (psi(x^2) / psi(-x))^3 in powers of x where psi() is a Ramanujan theta function.

$$\frac{e^{\frac{3\pi}{8}}\sqrt{2}}{4}$$

1.148407814878808752471001171501 6

1,3,9,22,48,99,194,363,657,1155,1977,3312,5443,8787,13968,21894,33873,51795, 78345,117312,174033,255945,373353,540486,776848,1109040,1573209,2218198, 3109713,4335840,6014123,8300811,11402928,15593702,21232521,28790667, 38884082

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*A001938 Expansion of k/(4*q^(1/2)) in powers of q, where k defined by sqrt(k) = theta_2 (0, q)/theta_3(0, q).*

$$\frac{e^{\frac{\pi}{2}}\sqrt{2}}{8}$$

0.850380294206275782059975775222 94

1,-4,14,-40,101,-236,518,-1080,2162,-4180,7840,-14328,25591,-44776,76918,-129952, 216240,-354864,574958,-920600,1457946,-2285452,3548550,-5460592,8332425,

-12614088,18953310,-28276968,41904208,-61702876,90304598,-131399624

A001939 Expansion of (psi(-x) / phi(-x))^5 in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{e^{\frac{5\pi}{8}}\sqrt{2}}{8}$$

1.259389975242663561187313275210 1

1,5,20,65,185,481,1165,2665,5820,12220,24802,48880,93865,176125,323685,583798,1035060,1806600,3108085,5276305,8846884,14663645,24044285,39029560,62755345,100004806,158022900,247710570,385366265,595212280,913040649,1391449780

A001940 Absolute value of coefficients of an elliptic function.

$$\frac{e^{\frac{3\pi}{4}}}{8}$$

1.318840509274720273470883930 9306

1,6,27,98,309,882,2330,5784,13644,30826,67107,141444,289746,578646,1129527,2159774,4052721,7474806,13569463,24274716,42838245,74644794,128533884,218881098,368859591,615513678,1017596115,1667593666,2710062756,4369417452

A001941 Absolute values of coefficients of an elliptic function.

$$\frac{e^{\frac{7\pi}{8}}\sqrt{2}}{16}$$

1.381097454399588582589799937861 8

1,7,35,140,483,1498,4277,11425,28889,69734,161735,362271,786877,1662927,3428770,6913760,13660346,26492361,50504755,94766875,175221109,319564227,575387295,1023624280,1800577849,3133695747,5399228149,9214458260,15584195428

A002107 Expansion of Product_{k>=1} (1 - x^k)^2.

$$\frac{e^{\frac{\pi}{12}}\sqrt{\pi}\ 2^{1/4}}{2\,\Gamma\left(\frac{3}{4}\right)^2}$$

0.911869895471523640137077550486 20

1,-2,-1,2,1,2,-2,0,-2,-2,1,0,0,2,3,-2,2,0,0,-2,-2,0,0,-2,-1,0,2,2,-2,2,1,2,0,2,-2,-2,2,0,-2,0,

-4,0,0,0,1,-2,0,0,2,0,2,2,1,-2,0,2,2,0,0,-2,0,-2,0,-2,2,0,-4,0,0,-2,-1,2,0,2,0,0,0,-2

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*A002171 Glaisher's chi numbers. a(n) = chi(4*n + 1).*

$$\frac{e^{\frac{\pi}{4}}\,\pi\,2^{1/4}}{4\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.90846099773996681643318774600265

1,-2,-3,6,2,0,-1,-10,0,-2,10,6,-7,14,0,-10,-12,0,-6,0,9,-4,10,0,18,-2,0,6,-14,-18,-11,12,0,0,-22,0,20,14,-6,22,0,0,23,-26,0,-18,4,0,-14,-2,0,-20,0,0,0,12,3,30,26,0,-30,14,0,0,2,30,-28,-26,0,-18,10,0,-13,-34,0,0,20,0,26,22,0,-6,0,6,18,0

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*A002284 q-expansion of modular form of weight 13/2: eta(8 tau)^12 * theta(tau).*

$$\frac{\Gamma\left(\frac{5}{8}\right)^{13}\left(7\sqrt{2}+10\right)\sqrt{2+\sqrt{2}}}{8388608\,\pi^{13/4}\,\Gamma\left(\frac{7}{8}\right)^{13}}$$

$3.7887701338511646536026588165454 \times 10^{-6}$

0,0,0,0,1,2,0,0,2,0,0,0,-12,-22,0,0,-24,0,0,0,56,84,0,0,108,0,0,0,-112,-66,0,0,-176,0,0,0,9,-398,0,0,-196,0,0,0,364,990,0,0,1056,0,0,0,-616,70,0,0,-728,0,0,0,432,-2354,0,0,-1472,0,0,0,-240,1080,0,0,990,0,0,0

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*A002288 G.f.: q * Product_{m>=1} (1-q^m)^8*(1-q^2m)^8.*

$$\frac{\pi^4}{128\,\Gamma\left(\frac{3}{4}\right)^{16}}$$

0.029433966645924413678093287979791

0,1,-8,12,64,-210,-96,1016,-512,-2043,1680,1092,768,1382,-8128,-2520,4096,14706,16344,-39940,-13440,12192,-8736,68712,-6144,-34025,-11056,-50760,65024,-102570,20160,227552,-32768,13104,-117648,-213360,-130752,160526,319520

A002408 Expansion of 8-dimensional cusp form.

$$\frac{\pi^2}{64\,\Gamma\left(\frac{3}{4}\right)^8}$$

0.030328393588931444217967125074973

0,1,-8,28,-64,126,-224,344,-512,757,-1008,1332,-1792,2198,-2752,3528,-4096,4914,

-6056,6860,-8064,9632,-10656,12168,-14336,15751,-17584,20440,-22016,24390,
-28224,29792,-32768,37296,-39312,43344,-48448,50654,-54880,61544,-64512,68922

A002448 Expansion of Jacobi theta function theta_4(x).

$$\frac{\pi^{1/4}\, 2^{3/4}}{2\,\Gamma\left(\frac{3}{4}\right)}$$

0.913579138156116821407242593401 20

1,-2,0,0,2,0,0,0,0,-2,0,0,0,0,0,0,2,0,0,0,0,0,0,0,-2,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,
0,0,0,0,-2,0,0,0,0,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,-2,0,0,0,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0

A002470 Glaisher's function W(n).

$$\frac{\pi^{7/2}}{64\,\Gamma\left(\frac{3}{4}\right)^{14}}$$

0.049873683359633424991692848635262

0,1,4,-8,-48,10,224,80,-448,-231,40,-248,1408,1466,-2240,-80,1280,-4766,-924,1944,
-480,9600,6944,-2704,-8704,-15525,5864,-3984,-14080,25498,2240,10816,33792,
-29760,-19064,800,11088,1994,-54432,-11728,-4480

A002483 Expansion of {theta_1}'(q) in powers of q^(1/4).

$$\frac{2^{15/16}\,\Gamma\left(\frac{5}{8}\right)^3\left(2+\sqrt{2}\right)^{3/2}}{32\,\pi^{3/4}\,\Gamma\left(\frac{7}{8}\right)^3\left(\sqrt{2}\,\sqrt{2+\sqrt{2}}\right)^{3/2}}$$

0.086427836524391208443231605210328

0,2,0,0,0,0,0,0,0,-6,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,10,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
0,0,0,0,-14,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,18,0,0,0

A002512 Expansion of chi(x)^10 / phi(x)^4 in powers of x where phi(), chi() are Ramanujan theta functions.

$$\frac{4\,e^{-\frac{5\pi}{12}}\,\sqrt{2}\,\Gamma\left(\frac{3}{4}\right)^4}{\pi}$$

1.096655322992565420512045215 0757

1,2,5,10,22,40,75,130,230,382,636,1022,1645,2570,4002,6110,9297,13910,20715,30462, 44597,64584,93085,132990,189164,266992,375192,523800,728285,1006684,1386043, 1898586,2591120,3519840,4764736,6423032

A002513 Number of cubic partitions of n: expansion of Product_{k>0} 1/((1-x^(2k))^2(1 -x^(2k-1))) in powers of x.*

$$\frac{e^{-\frac{\pi}{8}}\ 2^{7/8}\ \Gamma\left(\frac{3}{4}\right)^2}{\sqrt{\pi}}$$

1.049172398238761260015224470 7675

1,1,3,4,9,12,23,31,54,73,118,159,246,329,489,651,940,1242,1751,2298,3177,4142,5630, 7293,9776,12584,16659,21320,27922,35532,46092,58342,75039,94503,120615, 151173,191611,239060,301086,374026,468342,579408,721638,889287

A002612 Glaisher's function U(n).

$$\frac{e^{\pi}\ \pi^{9/2}}{64\ \Gamma\left(\frac{3}{4}\right)^{18}}$$

1.607912784497292415194497 9407061

1,12,48,16,-414,-960,672,4800,2721,-9064,-8880,6912,-2398,-13440,29280,30976, -10878,57228,-9360,-252384,-53760,177600,-113952,107520,436131,-16488,150624, 96768,-915678,-585600,-32640,248832,710400,-466408

A002613 Glaisher's function J(n) (18 squares version).

$$\frac{9\ e^{\pi}\ \pi^{9/2}}{256\ \Gamma\left(\frac{3}{4}\right)^{18}}$$

3.617803765118907934187620 3665887

1,44,432,-1136,610,-5568,6048,11456,-3423,26840,-79920,768,-5470,-77952,263520, 61696,73090,-150612,-84240,-692960,-139776,1030080,-1025568,1410048,-18525, -240680,1355616,10752,-128222,-3396480,-293760

A003781 Expansion of theta series of {E_7} lattice in powers of q^(1/2).*

$$\frac{9\ \pi^{7/4}}{16\ \Gamma\left(\frac{3}{4}\right)^{7}}$$

1.0049587494183912303582169038978

1,0,0,56,126,0,0,576,756,0,0,1512,2072,0,0,4032,4158,0,0,5544,7560,0,0,12096,11592,0,0,13664,16704,0,0,24192,24948,0,0,27216,31878,0,0,44352,39816,0,0,41832,55944,0,0,72576,66584,0,0,67536,76104,0,0,100800

A003982 Table read by rows: 1 if x = y, 0 otherwise, where (x,y) = (0,0),(0,1),(1,0),(0,2),(1,1),(2,0),...

$$\frac{e^{\frac{\pi}{2}}\, 2^{3/4}\, \Gamma\left(\frac{5}{8}\right)}{8\, \pi^{1/4}\, \Gamma\left(\frac{7}{8}\right)}$$

1.0000034873423562514070036054270

1,0,0,0,1,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0

A004008 Expansion of theta series of E_7 lattice in powers of q^2.

$$\frac{9\, \pi^{7/4}}{2\, \Gamma\left(\frac{3}{4}\right)^{7}}$$

8.0396699953471298428657352311822

1,126,756,2072,4158,7560,11592,16704,24948,31878,39816,55944,66584,76104,99792,116928,133182,160272,177660,205128,249480,265104,281736,350784,382536,390726,470232,505568,532800,615384,640080,701568,799092,809424,853776

A004011 Theta series of D_4 lattice; Fourier coefficients of Eisenstein series E_{gamma,2}.

$$\frac{3\, \pi}{2\, \Gamma\left(\frac{3}{4}\right)^{4}}$$

2.0898058945285152887763693904880

1,24,24,96,24,144,96,192,24,312,144,288,96,336,192,576,24,432,312,480,144,768,288,576,96,744,336,960,192,720,576,768,24,1152,432,1152,312,912,480,1344,144,1008,768,1056,288,1872,576,1152,96,1368,744,1728,336

A004018 Theta series of square lattice (or number of ways of writing n as a sum of 2 squares). Often denoted by r(n) or r_2(n).

$$\frac{\sqrt{\pi}}{\Gamma\left(\frac{3}{4}\right)^2}$$

1.180340599016096226045337940558 4

1,4,4,0,4,8,0,0,4,4,8,0,0,8,0,0,4,8,4,0,8,0,0,0,0,12,8,0,0,8,0,0,4,0,8,0,4,8,0,0,8,8,0,0,0,8,0,0,0,4,12,0,8,8,0,0,0,0,8,0,0,8,0,0,4,16,0,0,8,0,0,0,4,8,8,0,0,0,0,0,8,4,8,0,0,16,0,0,0,8,8,0,0,0,0,0,0,8,4,0,12,8

A004020 Theta series of square lattice with respect to edge.

$$\frac{e^{\frac{\pi}{4}}\sqrt{\pi}\ 2^{3/4}}{2\,\Gamma\left(\frac{3}{4}\right)^2}$$

2.176927346160588286588222480467 1

2,4,2,4,4,0,6,4,0,4,4,4,2,4,0,4,8,0,4,0,2,8,4,0,4,4,0,4,4,4,2,8,0,0,4,0,8,4,4,4,0,0,6,4,0,4,8,0,4,4,0,8,0,0,0,8,6,4,4,0,4,4,0,0,4,4,8,4,0,4,4,0,6,4,0,0,8,0,4,4,0,12,0,4,4,0,0,4,4,0,2,8,4,4,8,0,0,4,0,4,4,4,4,0

A004024 Theta series of b.c.c. lattice with respect to deep hole.

$$\frac{e^{\frac{5\pi}{8}}\ \pi^{3/4}\ 2^{7/8}}{4\,\Gamma\left(\frac{3}{4}\right)^3}$$

4.188779448639004085159654525687 5

4,4,8,12,4,12,12,12,16,16,8,8,28,12,20,24,8,16,28,12,16,28,20,32,20,16,16,32,20,24,28,8,36,44,12,32,36,16,24,20,28,20,56,28,16,40,20,40,44,12,36,40,20,32,40,16,24,60,32,36,40,24,32,60,24,40,24,20,60,36,24,32,56,32

A004025 Theta series of b.c.c. lattice with respect to long edge.

$$\frac{e^{\pi}\ 2^{3/4}\ \Gamma\left(\frac{5}{8}\right)^3\sqrt{2+\sqrt{2}}}{32\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

2.172884777533579306967011485833 7

2,4,0,0,8,8,0,0,10,8,0,0,8,16,0,0,16,12,0,0,16,8,0,0,10,24,0,0,24,16,0,0,16,16,0,0,8,24,0,0,32,16,0,0,24,16,0,0,18,28,0,0,24,32,0,0,16,8,0,0,24,32,0,0,32,32,0,0,32,16,0,0,16,40,0,0,32

A004402 Expansion of 1 / Sum_{n=-oo..oo} x^(n^2).

$$\frac{\Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

0.92044178783559098393491713075000

1,-2,4,-8,14,-24,40,-64,100,-154,232,-344,504,-728,1040,-1472,2062,-2864,3948,-5400,7336,-9904,13288,-17728,23528,-31066,40824,-53408,69568,-90248,116624,-150144,192612,-246256,313808

A004403 Expansion of 1/theta_3(q)^2 in powers of q.

$$\frac{\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{\pi}}$$

0.84721308479397908660649912348225

1,-4,12,-32,76,-168,352,-704,1356,-2532,4600,-8160,14176,-24168,40512,-66880,108876,-174984,277932,-436640,679032,-1046016,1597088,-2418240,3632992,-5417708,8022840,-11802176,17252928,-25070568,36223424,-52053760,74414412

A004404 Expansion of 1 / (Sum_{n=-oo..oo} x^(n^2))^3.

$$\frac{\Gamma\left(\frac{3}{4}\right)^3}{\pi^{3/4}}$$

0.77981032644547625244225118286032

1,-6,24,-80,234,-624,1552,-3648,8184,-17654,36816,-74544,147056,-283440,535008,-990912,1803882,-3232224,5707624,-9943536,17106960,-29088352,48922320,-81438528,134261584,-219336630,355242288

A004405 Expansion of 1 / (Sum_{n=-oo..oo} x^(n^2))^4.

$$\frac{\Gamma\left(\frac{3}{4}\right)^4}{\pi}$$

0.71777001104612999782119322366580

1,-8,40,-160,552,-1712,4896,-13120,33320,-80872,188784,-425952,932640,-1988080,4137024,-8422848,16810536,-32943760,63482760,-120440608,225217904,-415498496,756920160,-1362645440,2425895712

A004406 Expansion of 1 / (Sum_{n=-oo..oo} x^(n^2))^5.

$$\frac{\Gamma\left(\frac{3}{4}\right)^5}{\pi^{5/4}}$$

0.660665512222071784397857299754 07

1,-10,60,-280,1110,-3912,12600,-37760,106620,-286290,736184,-1822920,4365800,-10149320,22971120,-50744448,109643350,-232145040,482403060,-985229640,1980034104,-3920000400,7652388280,-14742829440

A004407 Expansion of (Sum_{n = -infinity..infinity} x^(n^2))^(-6).

$$\frac{\Gamma\left(\frac{3}{4}\right)^6}{\pi^{3/2}}$$

0.608104145231000239482949473650 40

1,-12,84,-448,2004,-7896,28224,-93312,289236,-848972,2377704,-6391872,16571968,-41599320,101430144,-240877440,558440916,-1266406680,2814053908,-6136337088,13148606184,-27717527552

A004408 Expansion of (Sum_{n = -infinity..infinity} x^(n^2))^(-7).

$$\frac{\Gamma\left(\frac{3}{4}\right)^7}{\pi^{7/4}}$$

0.559724466626655729275587204396 77

1,-14,112,-672,3346,-14560,57120,-206208,694960,-2209774,6683040,-19345760,53874912,-144936288,377965760,-958231680,2367566866,-5713057728,13488657168,-31210552800,70873262880,-158145658560

A004409 Expansion of (Sum_{n = -infinity..infinity} x^(n^2))^(-8).

$$\frac{\Gamma\left(\frac{3}{4}\right)^8}{\pi^2}$$

0.515193788757161579089223649066 45

1,-16,144,-960,5264,-25056,106944,-418176,1520784,-5201232,16871648,-52252992,155341248,-445226848,1234726272,-3323392128,8704504976,-22234655520,55498917840,-135595345600,324759439584

A004410 Expansion of (Sum_{n = -infinity..infinity} x^(n^2))^(-9).

$$\frac{\Gamma\left(\frac{3}{4}\right)^9}{\pi^{9/4}}$$

0.474205892005433597769381338915 43

1,-18,180,-1320,7902,-40824,188232,-792000,3088980,-11297546,39090312,
-128849976,406865880,-1236379320,3629385936,-10324840512,28542038238,
-76852151280,201967043260,-518957929080,1305848905416

A004411 Expansion of (Sum_{n = -infinity..infinity} x^(n^2))^(-10).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{10}}{\pi^{5/2}}$$

0.436478919039652482329243886715 65

1,-20,220,-1760,11420,-63624,315040,-1418560,5903260,-22976820,84413912,
-294841120,984745120,-3159938760,9780562880,-29296914112,85169213340,
-240882506920,664216884540,-1788966694240,4714033526616,-12170584419840,
30826269009760

A004412 Expansion of (Sum_{n = -infinity..infinity} x^(n^2))^(-11).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{11}}{\pi^{11/4}}$$

0.401753436593403904121307417756 61

1,-22,264,-2288,15994,-95568,505648,-2425280,10721832,-44229350,171861360,
-633713808,2230733648,-7532979344,24502989984,-77036477760,234785552122,
-695409096096,2006117554936,-5647472566736

A004413 Expansion of (Sum_{n = -infinity..infinity} x^(n^2))^(-12).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{12}}{\pi^3}$$

0.369790651447125431304509574145 87

1,-24,312,-2912,21816,-139152,783328,-3986112,18650424,-81251896,332798544,
-1291339296,4776117216,-16922753616,57683178432,-189821722688,
604884735288,-1871370360240,5633654421720

A004414 Expansion of (Sum_{n=-inf..inf} x^(n^2))^(-13).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{13}}{\pi^{13/4}}$$

0.340370768342880002295706060082 58

1,-26,364,-3640,29094,-197288,1177176,-6333184,31258604,-143374530,617193304,-2513060264,9739727816,-36115518376,128680223152,-442158402816,1469734751654,-4738671343952,14853923411652

A004415 Expansion of (Sum_{n=-inf..inf} x^(n^2))^(-14).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{14}}{\pi^{7/2}}$$

0.313291478540494243261934632668 80

1,-28,420,-4480,38052,-273336,1723008,-9770240,50722980,-244273820,1102294984,-4698110592,19034512000,-73696070840,273868321536,-980502270720,3392689809572,-11376760267320,37060195850020

A004416 Expansion of (Sum_{n=-inf..inf} x^(n^2))^(-15).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{15}}{\pi^{15/4}}$$

0.288366568621468207943304382609 41

1,-30,480,-5440,48930,-371136,2464320,-14688000,80001120,-403533790,1904433984,-8477603520,35829727680,-144548556480,559157308800,-2081866609920,7484792950050,-26057409056640,88057506412320

A004417 Expansion of (Sum x^(n^2), n = -inf .. inf)^(-16).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{16}}{\pi^{4}}$$

0.265424639973958828691371100332 34

1,-32,544,-6528,61984,-495040,3453312,-21581568,123040288,-648624288,3194776000,-14823993472,65231647104,-273714726080,1100198199040,-4252621927680,15859616674336,-57229459033664

A004418 Expansion of (Sum_{n=-inf..inf} x^(n^2))^(-17).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{17}}{\pi^{17/4}}$$

0.244307930153248733821523881972 61

1,-34,612,-7752,77486,-649944,4751976,-31070016,185025348,-1017375098,
5220022312,-25201899288,115265410488,-502210951832,2094181357968,
-8390590348992,32410328691374,-121046064563376

A004419 Expansion of (Sum_{n=-inf..inf} x^(n^2))^(-18).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{18}}{\pi^{9/2}}$$

0.224871228012668952154026900201 87

1,-36,684,-9120,95724,-841320,6433248,-43918272,272670444,-1561033348,
8329222584,-41772509280,198265106400,-895619289384,3868763174208,
-16044584545344,64103055405804,-247461482137032

A004420 Expansion of (Sum_{n=-inf..inf} x^(n^2))^(-19).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{19}}{\pi^{19/4}}$$

0.206980875144765839633829168733 63

1,-38,760,-10640,117002,-1075248,8582224,-61061440,394559320,-2348001494,
13008061200,-67666510320,332809029680,-1556541579760,6955832361824,
-29820933412800,123079426294922,-490508040685920

A004421 Expansion of (Sum_{n=-inf..inf} x^(n^2))^(-20).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{20}}{\pi^{5}}$$

0.190513846766023506247042266876 82

1,-40,840,-12320,141640,-1358448,11297440,-83631680,561539400,-3468363400,
19922193200,-107343635040,546373245600,-2642351627440,12200693947200,
-54007656632000,230002160331080,-945228781171920

A004422 Expansion of (Sum_{n=-inf..inf} x^(n^2))^(-21).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{21}}{\pi^{21/4}}$$

0.17535690572475449964648085916134

1,-42,924,-14168,169974,-1698312,14692216,-112987776,787175004,-5039316786,29971442424,-167060546184,878920016296,-4390113366408,20920981191792,-95515527307648,419275600889334,-1775001330567696

A004423 Expansion of (Sum_{n=-inf..inf} x^(n^2))^(-22).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{22}}{\pi^{11/2}}$$

0.16140582381461021118522782521847

1,-44,1012,-16192,202356,-2102936,18896064,-150747520,1088265332,-7211641580,44356933544,-255472920256,1387689358528,-7151069205016,35134409940608,-165273439140480,747047401948276,-3254796172584792

A004424 Expansion of (Sum_{n=-inf..inf} x^(n^2))^(-23).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{23}}{\pi^{23/4}}$$

0.14856466503899623062585451325936

1,-46,1104,-18400,239154,-2581152,24056160,-198823040,1485433104,-10177345486,64663512288,-384402300960,2153523131040,-11437761254432,57880610587200,-280265903825280,1303272560982834,-5838468742907712

A004425 Expansion of (Sum x^(n^2), n = -inf .. inf)^(-24).

$$\frac{\Gamma\left(\frac{3}{4}\right)^{24}}{\pi^{6}}$$

0.13674512589768940984142190063751

1,-48,1200,-20800,280752,-3142560,30338880,-259459200,2003790000,-14178640368,92960115360,-569803615680,3289122824000,-17987650183200,93669997008000,-466466351287680,2229627536828592,-10261752523778400

A004533 Theta series of 12-dimensional unimodular lattice {D_12}^{+}.

$$\frac{5\,\pi^3}{8\,\Gamma\left(\frac{3}{4}\right)^{12}}$$

1.6901454851661270662511309594173

1,0,264,2048,7944,24576,64416,135168,253704,475136,825264,1284096,1938336, 2973696,4437312,6107136,8118024,11354112,15653352,19802112,24832944, 32800768,42517728,51523584

A005369 a(n) = 1 if n is of the form m(m+1), else 0.

$$\frac{e^{\frac{\pi}{4}}\,\pi^{1/4}\,2^{3/4}}{4\,\Gamma\left(\frac{3}{4}\right)}$$

1.0018674492441201673058427718235

1,0,1,0,0,0,1,0,0,0,0,0,1,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0, 0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1, 0,0,0,0,0,0,0,0,0,0,0,0,0,0

A005758 Number of partitions of n into parts of 12 kinds.

$$\frac{16\,e^{-\frac{\pi}{2}}\,\sqrt{2}\,\Gamma\left(\frac{3}{4}\right)^{12}}{\pi^3}$$

1.7394130789085558608215180278642

1,12,90,520,2535,10908,42614,153960,521235,1669720,5098938,14931072,42124380, 114945780,304351020,784087848,1970043621,4837060800,11626305640, 27398234760,63388751544,144156086776,322590526350

A005798 Expansion of (theta_2(q)/theta_3(q))^4/16 in powers of q.

$$\frac{1}{32}$$

0.031250000000000000000000000000000

0,1,-8,44,-192,718,-2400,7352,-20992,56549,-145008,356388,-844032,1934534, -4306368,9337704,-19771392,40965362,-83207976,165944732,-325393024, 628092832,-1194744096,2241688744,-4152367104,7599231223,-13749863984

A005869 Theta series of b.c.c. lattice with respect to short edge.

$$\frac{e^{\frac{3\pi}{8}}\ \pi^{3/4}\ 2^{1/8}}{2\,\Gamma\left(\frac{3}{4}\right)^3}$$

2.271176597727460859013818232835 0

2,6,6,8,12,6,12,18,6,14,18,12,18,18,12,12,30,18,14,24,6,30,30,12,24,24,18,24,30,12,26,42,24,12,30,18,24,48,18,36,24,18,36,30,24,26,48,18,30,48,12,36,54,12,24,30,36,48,42,30,24,54,18,26,36,30,54,54,18,24

A005875 Theta series of simple cubic lattice; also number of ways of writing a nonnegative integer n as a sum of 3 squares (zero being allowed).

$$\frac{\pi^{3/4}}{\Gamma\left(\frac{3}{4}\right)^3}$$

1.282363115859455399000142818379 3

1,6,12,8,6,24,24,0,12,30,24,24,8,24,48,0,6,48,36,24,24,48,24,0,24,30,72,32,0,72,48,0,12,48,48,48,30,24,72,0,24,96,48,24,24,72,48,0,8,54,84,48,24,72,96,0,48,48,24,72,0,72,96,0,6,96,96,24,48,96,48,0,36,48,120

A005876 Theta series of cubic lattice with respect to edge.

$$\frac{e^{\frac{\pi}{4}}\ \pi^{3/4}\ 2^{3/4}}{2\,\Gamma\left(\frac{3}{4}\right)^3}$$

2.365089650351066360872516335478 8

2,8,10,8,16,16,10,24,16,8,32,24,18,24,16,24,32,32,16,32,34,16,48,16,16,56,32,24,32,40,26,48,48,16,32,32,32,56,48,24,64,32,26,56,16,40,64,64,16,40,48,32,80,32,32,64,50,40,48,48,48,56,48,16,64,72,32,88,32,24

A005877 Theta series of cubic lattice with respect to square.

$$\frac{e^{\frac{\pi}{2}}\ \pi^{3/4}\ \sqrt{2}}{2\,\Gamma\left(\frac{3}{4}\right)^3}$$

4.361985294975360797961620969797 0

4,8,8,16,12,8,24,16,16,24,16,16,28,32,8,32,32,16,40,16,16,40,40,32,36,16,24,48,32,24,40,48,16,56,32,16,64,40,32,32,36,40,48,48,32,48,48,16,80,40,24,80

A005878 Theta series of cubic lattice with respect to deep hole.

$$\frac{2\, e^{\frac{3\pi}{8}}\, \pi^{3/4}\, 2^{1/8}}{\Gamma\left(\frac{3}{4}\right)^3}$$

9.084706390909843436055272931340 2

8,24,24,32,48,24,48,72,24,56,72,48,72,72,48,48,120,72,56,96,24,120,120,48,96,96,72, 96,120,48,104,168,96,48,120,72,96,192,72,144,96,72,144,120,96,104,192,72,120,192, 48,144,216,48,96,120,144,192,168,120,96,216,72

A005879 Theta series of D_4 lattice with respect to deep hole.

$$\frac{e^{\frac{\pi}{2}}\, \pi \sqrt{2}}{\Gamma\left(\frac{3}{4}\right)^4}$$

9.478025340923563562136323432623 7

8,32,48,64,104,96,112,192,144,160,256,192,248,320,240,256,384,384,304,448,336,352, 624,384,456,576,432,576,640,480,496,832,672,544,768,576,592,992,768,640,968, 672,864,960,720,896,1024,960,784,1248,816,832,1536

A005880 Theta series of D_4 lattice with respect to edge.

$$\frac{e^{\frac{\pi}{2}}\, \pi \sqrt{2}}{4\, \Gamma\left(\frac{3}{4}\right)^4}$$

2.369506335230890890534080858155 9

2,8,12,16,26,24,28,48,36,40,64,48,62,80,60,64,96,96,76,112,84,88,156,96,114,144,108, 144,160,120,124,208,168,136,192,144,148,248,192,160,242,168,216,240

A005883 Theta series of square lattice with respect to deep hole.

$$\frac{e^{\frac{\pi}{4}}\, \sqrt{\pi}\, 2^{3/4}}{\Gamma\left(\frac{3}{4}\right)^2}$$

4.353854692321176573176444960934 2

4,8,4,8,8,0,12,8,0,8,8,8,4,8,0,8,16,0,8,0,4,16,8,0,8,8,0,8,8,8,4,16,0,0,8,0,16,8,8,8,0,0,12, 8,0,8,16,0,8,8,0,16,0,0,0,16,12,8,8,0,8,8,0,0,8,8,16,8,0,8,8,0,12,8,0,0,16,0,8,8,0,24,0, 8,8,0,0,8,8,0,4,16,8,8,16,0,0

A005884 Theta series of f.c.c. lattice with respect to edge.

$$\frac{e^{\frac{\pi}{2}}\ \pi^{3/4}\ \sqrt{2}}{4\ \Gamma\left(\frac{3}{4}\right)^3}$$

2.180992647487680398980810484898 5

2,4,4,8,6,4,12,8,8,12,8,8,14,16,4,16,16,8,20,8,8,20,20,16,18,8,12,24,16,12,20,24,8,28, 16,8,32,20,16,16,18,20,24,24,16,24,24,8,40,20,12,40,16,12,20,24,16,40,36,16,22,24, 24,32,16,12,40,32,24,28,16,24,40,28,12

A005886 Theta series of f.c.c. lattice with respect to tetrahedral hole.

$$\frac{e^{\frac{3\pi}{8}}\ \pi^{3/4}\ 2^{1/8}}{\Gamma\left(\frac{3}{4}\right)^3}$$

4.542353195454921718027636465670 1

4,12,12,16,24,12,24,36,12,28,36,24,36,36,24,24,60,36,28,48,12,60,60,24,48,48,36,48,60, 24,52,84,48,24,60,36,48,96,36,72,48,36,72,60,48,52,96,36,60,96,24,72,108,24,48,60, 72,96,84,60,48,108,36,52,72,60,108,108,36,48,108

A005931 Theta series of the coset of the E_7 lattice in its dual.

$$\frac{15\ e^{\frac{3\pi}{4}}\ \pi^{7/4}\ 2^{1/4}}{4\ \Gamma\left(\frac{3}{4}\right)^7}$$

84.061423648437965574829788283410

56,576,1512,4032,5544,12096,13664,24192,27216,44352,41832,72576,67536,100800, 101304,145728,126504,205632,176456,249984,234360,326592,277200,423360, 355320,479808,439992,608832,494928,749952,599760,806400,745416

A006914 Theta series of laminated lattice LAMBDA_12^{max}.

$$\frac{15\ \pi^3}{16\ \Gamma\left(\frac{3}{4}\right)^{12}}$$

2.535218227749190599376696439126 0

1,0,648,3072,20232,36864,158112,202752,646920,712704,2025648,1926144,4936608, 4460544,10891584,9160704,20700936,17031168,38421864,29703168,63245232,

49201152,104361696,77285376,157848480,117227520,240598512,172849152, 340059456

A006922 Expansion of 1/eta(q)^24; Fourier coefficients of T_{14}.

$$\frac{512\, e^{-\pi}\, \Gamma\left(\frac{3}{4}\right)^{24}}{\pi^6}$$

3.025557859078141977638466315192 2

1,24,324,3200,25650,176256,1073720,5930496,30178575,143184000,639249300, 2705114880,10914317934,42189811200,156883829400,563116739584, 1956790259235,6599620022400,21651325216200,69228721526400, 216108718571250,659641645039360,1971466420726656

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*A006950 G.f.: Product_{k>=1} (1 + x^(2*k - 1)) / (1 - x^(2*k)).*

$$\frac{e^{-\frac{\pi}{8}}\, 2^{3/4}\, \Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

1.045253859525481170773835623524 7

1,1,1,2,3,4,5,7,10,13,16,21,28,35,43,55,70,86,105,130,161,196,236,287,350,420,501, 602,722,858,1016,1206,1431,1687,1981,2331,2741,3206,3740,4368,5096,5922,6868, 7967,9233,10670,12306,14193,16357,18803,21581

A007096 Expansion of theta_3 / theta_4.

$$2^{1/4}$$

1.189207115002721066717499970560 5

1,4,8,16,32,56,96,160,256,404,624,944,1408,2072,3008,4320,6144,8648,12072,16720, 22976,31360,42528,57312,76800,102364,135728,179104,235264,307672,400704, 519808,671744,864960,1109904,1419456,1809568,2299832

A007191 McKay-Thompson series of class 2B for the Monster group with a(0) = -24.

$$8\, e^{-\pi}$$

0.345711346110177998195341897373 82

1,-24,276,-2048,11202,-49152,184024,-614400,1881471,-5373952,14478180,-37122048, 91231550,-216072192,495248952,-1102430208,2390434947,-5061476352, 10487167336,-21301241856,42481784514,-83300614144

A007246 McKay-Thompson series of class 2B for the Monster group.

$$32\, e^{-\pi}$$

1.38284538444071199278136758949 53

1,0,276,-2048,11202,-49152,184024,-614400,1881471,-5373952,14478180,-37122048, 91231550,-216072192,495248952,-1102430208,2390434947,-5061476352, 10487167336,-21301241856,42481784514,-83300614144

A007247 McKay-Thompson series of class 4B for the Monster group.

$$18\, e^{-\frac{\pi}{2}} \sqrt{2}$$

5.29175009188117441410426437116 57

1,52,834,4760,24703,94980,343998,1077496,3222915,8844712,23381058,58359168, 141244796,327974700,742169724,1627202744,3490345477,7301071680, 14987511560,30138820888,59623576440,115928963656

A007248 McKay-Thompson series of class 4C for the Monster group.

$$6\, e^{-\frac{\pi}{2}} \sqrt{2}$$

1.76391669729372480470142145705 52

1,20,-62,216,-641,1636,-3778,8248,-17277,34664,-66878,125312,-229252,409676, -716420,1230328,-2079227,3460416,-5677816,9198424,-14729608,23328520, -36567242,56774712,-87369461,133321908,-201825396,303248408,-452431503

A007249 McKay-Thompson series of class 4D for the Monster group.

$$2\, e^{-\frac{\pi}{2}} \sqrt{2}$$

0.58797223243124160156714048568508

1,-12,66,-232,639,-1596,3774,-8328,17283,-34520,66882,-125568,229244,-409236, 716412,-1231048,2079237,-3459264,5677832,-9200232,14729592,-23325752, 36567222,-56778888,87369483,-133315692

A007259 Expansion of Product_{m>=1} (1 + q^m)^(-8).

$$2\, e^{-\frac{\pi}{3}}$$

0.70183961435682193513147343199390

1,-8,28,-64,134,-288,568,-1024,1809,-3152,5316,-8704,13990,-22208,34696,-53248, 80724,-121240,180068,-264448,384940,-556064,796760,-1132544,1598789,-2243056,

3127360,-4333568,5971922,-8188096,11170160,-15163392,20491033,-27572936

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*A007267 Expansion of 16 * (1 + k^2)^4 /(k * k'^2)^2 in powers of q where k is the Jacobian elliptic modulus, k' the complementary modulus and q is the nome.*

$$648\, e^{-\pi}$$

28.002619034924417853822693687280

1,104,4372,96256,1240002,10698752,74428120,431529984,2206741887,10117578752, 42616961892,166564106240,611800208702,2125795885056,7040425608760, 22327393665024,68134255043715,200740384538624

A007331 Fourier coefficients of E_{infinity,4}.

$$\frac{\pi^2}{32\,\Gamma\left(\frac{3}{4}\right)^8}$$

0.060656787177862888435934250149947

0,1,8,28,64,126,224,344,512,757,1008,1332,1792,2198,2752,3528,4096,4914,6056,6860, 8064,9632,10656,12168,14336,15751,17584,20440,22016,24390,28224,29792,32768, 37296,39312,43344,48448,50654,54880,61544,64512

A008425 Theta series of {D_6} lattice.*

$$\frac{5\,\pi^{3/2}}{8\,\Gamma\left(\frac{3}{4}\right)^6}$$

1.027784475572981894418403526821 3

1,0,12,64,60,0,160,384,252,0,312,960,544,0,960,1664,1020,0,876,2880,1560,0,2400, 4224,2080,0,2040,5248,3264,0,4160,7680,4092,0,3480,9984,4380,0,7200,10880,6552, 0,4608,14784,8160,0,10560,17664,8224,0,7812,18560

A008427 Theta series of {D_8} lattice.*

$$\frac{5\,\pi^2}{4\,\Gamma\left(\frac{3}{4}\right)^8}$$

2.426271487114515537437370005997 9

1,16,368,448,3184,2016,10304,5504,25712,12112,46368,21312,89152,35168,126592, 56448,205936,78624,278576,109760,401184,154112,490176,194688,719936,252016, 808864,327040

A008428 Theta series of D_6 lattice.

$$\frac{5\,\pi^{3/2}}{2\,\Gamma\left(\frac{3}{4}\right)^6}$$

4.111137902291927577673614107285 2

1,60,252,544,1020,1560,2080,3264,4092,4380,6552,8160,8224,10200,12480,14144, 16380,17400,18396,24480,26520,23040,31200,35904,32800,39060,42840,44608, 49344,50520,54080,65280,65532,57600,73080,84864,74460,82200,93600,92480

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*A008438 Sum of divisors of 2*n + 1.*

$$\frac{e^{\frac{\pi}{2}}\,\pi\sqrt{2}}{8\,\Gamma\left(\frac{3}{4}\right)^4}$$

1.184753167615445445267040429078 0

1,4,6,8,13,12,14,24,18,20,32,24,31,40,30,32,48,48,38,56,42,44,78,48,57,72,54,72,80,60, 62,104,84,68,96,72,74,124,96,80,121,84,108,120,90,112,128,120,98,156,102,104,192, 108,110,152,114,144,182,144,133,168

A008439 Expansion of Jacobi theta constant theta_2^5 /32.

$$\frac{e^{\frac{5\pi}{8}}\,\pi^{5/4}\,2^{7/8}}{16\,\Gamma\left(\frac{3}{4}\right)^5}$$

1.236046610888218839375038267327 0

1,5,10,15,25,31,35,55,60,60,90,90,95,135,125,126,170,180,175,215,220,195,285,280, 245,340,300,320,405,350,351,450,465,415,515,480,425,620,590,505,655,625,590, 755,660,650,805,770,755,855,841,730,1045,960,770,1100

A008440 Expansion of Jacobi theta constant theta_2^6 /(64q^(3/2)).

$$\frac{e^{\frac{3\pi}{4}}\,\pi^{3/2}\,2^{1/4}}{16\,\Gamma\left(\frac{3}{4}\right)^6}$$

1.289560784516221141495150060362 7

1,6,15,26,45,66,82,120,156,170,231,276,290,390,435,438,561,630,651,780,861,842, 1020,1170,1095,1326,1431,1370,1716,1740,1682,2016,2145,2132,2415,2550,2353,

2850,3120,2810,3321,3486,3285,3906,4005,3722,4350

A008441 Number of ways of writing n as the sum of 2 triangular numbers.

$$\frac{e^{\frac{\pi}{4}}\ \sqrt{\pi}\ 2^{3/4}}{4\ \Gamma\left(\frac{3}{4}\right)^2}$$

1.088463673080294143294111240233 6

1,2,1,2,2,0,3,2,0,2,2,2,1,2,0,2,4,0,2,0,1,4,2,0,2,2,0,2,2,2,1,4,0,0,2,0,4,2,2,2,0,0,3,2,0,2,4,0,2,2,0,4,0,0,0,4,3,2,2,0,2,2,0,0,2,2,4,2,0,2,2,0,3,2,0,0,4,0,2,2,0,6,0,2,2,0,0,2,2,0,1,4,2,2,4,0,0,2,0,2,2,2,2,0,0

A008442 Expansion of Jacobi theta constant (theta_2(2z))^2/4.

$$\frac{e^{\pi}\ \sqrt{2}\ \Gamma\left(\frac{5}{8}\right)^2}{32\ \sqrt{\pi}\ \Gamma\left(\frac{7}{8}\right)^2}$$

1.000006974696874059523712326174 7

1,0,0,0,2,0,0,0,1,0,0,0,2,0,0,0,2,0,0,0,0,0,0,0,3,0,0,0,2,0,0,0,0,0,0,0,2,0,0,0,2,0,0,0,2,0,0,0,1,0,0,0,2,0,0,0,0,0,0,0,2,0,0,0,4,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,1,0,0,0,4,0,0,0,2,0,0,0,0,0,0,0,2,0,0,0,2,0,0,0,0

A008443 Number of ordered ways of writing n as the sum of 3 triangular numbers.

$$\frac{e^{\frac{3\pi}{8}}\ \pi^{3/4}\ 2^{1/8}}{4\ \Gamma\left(\frac{3}{4}\right)^3}$$

1.135588298863730429506909116417 5

1,3,3,4,6,3,6,9,3,7,9,6,9,9,6,6,15,9,7,12,3,15,15,6,12,12,9,12,15,6,13,21,12,6,15,9,12,24,9,18,12,9,18,15,12,13,24,9,15,24,6,18,27,6,12,15,18,24,21,15,12,27,9,13,18,15,27,27,9,12,27,15,24,21,12,15,30,15,12

A008451 Number of ways of writing n as a sum of 7 squares.

$$\frac{\pi^{7/4}}{\Gamma\left(\frac{3}{4}\right)^7}$$

1.786593332299362187303496718040 5

1,14,84,280,574,840,1288,2368,3444,3542,4424,7560,9240,8456,11088,16576,18494,17808,19740,27720,34440,29456,31304,49728,52808,43414,52248,68320,74048,68376,71120,99456,110964,89936,94864,136080,145222

A008452 Number of ways of writing n as a sum of 9 squares.

$$\frac{\pi^{9/4}}{\Gamma\left(\frac{3}{4}\right)^9}$$

2.10878864404439262160754360669 12

1,18,144,672,2034,4320,7392,12672,22608,34802,44640,60768,93984,125280,141120,182400,262386,317376,343536,421344,557280,665280,703584,800640,1068384,1256562,1234080,1421184,1851264,2034720,2057280,2338560

A008453 Number of ways of writing n as a sum of 11 squares.

$$\frac{\pi^{11/4}}{\Gamma\left(\frac{3}{4}\right)^{11}}$$

2.48908885130969970827580859550 46

1,22,220,1320,5302,15224,33528,63360,116380,209550,339064,491768,719400,1095160,1538416,1964160,2624182,3696880,4763220,5686648,7217144,9528816,11676280,13495680,16317048,20787470,25022184,27785120,32503680

A008658 Theta series of direct sum of 2 copies of D_4 lattice in powers of q^2.

$$\frac{9\,\pi^2}{4\,\Gamma\left(\frac{3}{4}\right)^8}$$

4.36728867680612796738726601079 62

1,48,624,1344,5232,6048,17472,16512,42096,36336,78624,63936,146496,105504,214656,169344,337008,235872,472368,329280,659232,462336,831168,584064,1178688,756048,1371552,981120,1799808,1170720,2201472

A008659 Theta series of direct sum of 3 copies of D_4 lattice.

$$\frac{27\,\pi^3}{8\,\Gamma\left(\frac{3}{4}\right)^{12}}$$

9.12678561989708615775610718085 35

1,72,1800,17568,57096,225072,439200,1210176,1826568,4269096,5626800,11595744,

13931424,26733168,30254400,54917568,58449672,102229776,106727400,178279200,178482096,295282944,289893600,463416768,445682592

A008660 Theta series of direct sum of 4 copies of D_4 lattice.

$$\frac{81\,\pi^4}{16\,\Gamma\left(\frac{3}{4}\right)^{16}}$$

19.073210386559020063404450610905

1,96,3552,62592,528864,2191680,8951424,23321856,67105248,134971872,319970880,550300032,1147717248,1771816512,3371135232,4826361600,8594190816,11587029696,19592103264

A008661 Theta series of direct sum of 5 copies of D_4 lattice.

$$\frac{243\,\pi^5}{32\,\Gamma\left(\frac{3}{4}\right)^{20}}$$

39.859307493413541802711563132770

1,120,5880,150240,2125560,16730064,80352480,343550400,1074130680,3300009240,8002059984,20074327200,41273292000,90329139600,165297094080,327390278976,549728415480,1009882047600

A008662 Theta series of direct sum of 6 copies of D_4 lattice.

$$\frac{729\,\pi^6}{64\,\Gamma\left(\frac{3}{4}\right)^{24}}$$

83.298215751560239249029572229715

1,144,8784,294336,5883984,71916768,547468992,2882049408,12927121488,45761350608,150532923744,416276152128,1118182645440,2614241349216,6094718050176,12618123283584,26478496036944

A010054 a(n) = 1 if n is a triangular number, otherwise 0.

$$\frac{e^{\frac{\pi}{8}}\,\pi^{1/4}\,2^{3/8}}{2\,\Gamma\left(\frac{3}{4}\right)}$$

1.043294624293774014676634999227

1,1,0,1,0,0,1,0,0,0,1,0,0,0,0,1,0,0,0,0,0,1,0,0,0,0,0,0,1,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,1,

0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0

A010815 From Euler's Pentagonal Theorem: coefficient of q^n in Product_{m>=1} (1 - q^m).

$$\frac{e^{\frac{\pi}{24}}\ \pi^{1/4}\ 2^{5/8}}{2\ \Gamma\left(\frac{3}{4}\right)}$$

0.954918789987674103751233978110 30

1,-1,-1,0,0,1,0,1,0,0,0,0,-1,0,0,-1,0,0,0,0,0,0,1,0,0,0,1,0,0,0,0,0,0,0,0,-1,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,-1,0,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1

A010816 Expansion of Product_{k>=1} (1 - x^k)^3.

$$\frac{e^{\frac{\pi}{8}}\ \pi^{3/4}\ 2^{7/8}}{4\ \Gamma\left(\frac{3}{4}\right)^3}$$

0.870761697209854220172138410919 18

1,-3,0,5,0,0,-7,0,0,0,9,0,0,0,0,-11,0,0,0,0,0,13,0,0,0,0,0,0,-15,0,0,0,0,0,0,0,17,0,0,0,0,0,0,0,0,-19,0,0,0,0,0,0,0,0,0,21,0,0,0,0,0,0,0,0,0,0,-23,0,0,0,0,0,0,0,0,0,0,0,25,0,0,0,0,0,0,0,0,0,0,0,0,0,0,-27,0,0,0,0,0,0,0,0

A010817 Expansion of Product_{k>=1} (1 - x^k)^9.

$$\frac{e^{\frac{3\pi}{8}}\ \pi^{9/4}\ 2^{5/8}}{16\ \Gamma\left(\frac{3}{4}\right)^9}$$

0.660234100573028569684896917658 50

1,-9,27,-12,-90,135,54,-99,-189,-85,657,-162,-135,-171,-810,702,495,837,-673,-900,243,-1053,-297,1566,2700,-1764,81,-1188,-1377,270,-2043,3321,-756,3726,3015,-4563,-3348,504,-351,-1350,-468

A010818 Expansion of Product (1 - x^k)^10 in powers of x.

$$\frac{e^{\frac{5\pi}{12}}\ \pi^{5/2}\ 2^{1/4}}{16\ \Gamma\left(\frac{3}{4}\right)^{10}}$$

0.630469948427796771375371944614 62

1,-10,35,-30,-105,238,0,-260,-165,140,1054,-770,-595,0,-715,2162,455,0,-2380,-1820, 2401,-680,1495,3080,1615,-6958,-1925,0,0,5100,-1442,8330,-5355,1330,0,-16790,0, 8190,8265,0,1918,0,8415,-10230,-7140,-9362

A010819 Expansion of Product_{k>=1} (1 - x^k)^11.

$$\frac{e^{\frac{11\pi}{24}}\ \pi^{11/4}\ 2^{7/8}}{32\ \Gamma\left(\frac{3}{4}\right)^{11}}$$

0.602047600276262988115390925646 94

1,-11,44,-55,-110,374,-143,-462,55,495,1287,-2069,-902,1210,-275,3795,-1507,-2431, -3575,-385,8690,-1661,1143,1265,-4290,-12716,2299,11440,3905,8635,-10472,6105, -20548,-1540,8690,-24904,29634,25003,8470,-23320,-18183

A010820 Expansion of Product_{k>=1} (1 - x^k)^13.

$$\frac{e^{\frac{13\pi}{24}}\ \pi^{13/4}\ 2^{1/8}}{32\ \Gamma\left(\frac{3}{4}\right)^{13}}$$

0.548989082332797577983223511329 06

1,-13,65,-130,-65,728,-871,-715,1560,845,78,-6513,2730,8605,-4355,2483,-13299,-2275, 11440,10010,19734,-41834,-11375,12870,-2730,14911,33201,25155,-70070,-36595, -28925,64389,13650,52780

A010821 Expansion of Product_{k>=1} (1 - x^k)^14.

$$\frac{e^{\frac{7\pi}{12}}\ \pi^{7/2}\ 2^{3/4}}{64\ \Gamma\left(\frac{3}{4}\right)^{14}}$$

0.524239990217678658012131105329 72

1,-14,77,-182,0,924,-1547,-506,3003,0,-1729,-8372,9177,13090,-15625,0,-17017,10556, 30107,0,7084,-89206,11571,69160,0,27132,0,-19096,-153502,0,93093,165242,0, -38962,0,-420838,257439

A010822 Expansion of Product_{k>=1} (1 - x^k)^15.

$$\frac{e^{\frac{5\pi}{8}}\ \pi^{15/4}\ 2^{3/8}}{64\ \Gamma\left(\frac{3}{4}\right)^{15}}$$

0.50060661712181581298889081904089

1,-15,90,-245,105,1107,-2485,195,4860,-2420,-3990,-8190,19695,13755,-38475,3990,-9750,34020,43015,-46605,-13860,-127385,106485,165240,-79275,-16380,-92340,-35840,-151995,188550,315783,90090,-271215,-307485,20475,-505440,915385,209340,-284130,337645,-294225,269325,-1707970,-70305,1297620,574210,492765,251370,-847245,-1102725,438129,-1416190,641445,0

A010823 Expansion of Product_{k>=1} (1 - x^k)^17.

$$\frac{e^{\frac{17\pi}{24}}\ \pi^{17/4}\ 2^{5/8}}{128\ \Gamma\left(\frac{3}{4}\right)^{17}}$$

0.45648810362722324198150635170759

1,-17,119,-408,476,1309,-5236,4233,8602,-15470,-4250,5236,45815,-21182,-117776,101065,46767,36685,-36771,-267036,143514,-18241,486285,81753,-1007250,104006,165767,579292,78829,187510

A010824 Expansion of Product_{k>=1} (1 - x^k)^18.

$$\frac{e^{\frac{3\pi}{4}}\ \pi^{9/2}\ 2^{1/4}}{128\ \Gamma\left(\frac{3}{4}\right)^{18}}$$

0.43590906755947600428875214172108

1,-18,135,-510,765,1242,-7038,8280,9180,-27710,3519,20196,50370,-68850,-153765,244782,52785,-71010,-130525,-343620,517293,54978,498780,-390150,-1835865,1161270,896751,793730,-633420

A010825 Expansion of Product_{k>=1} (1 - x^k)^19.

$$\frac{e^{\frac{19\pi}{24}}\ \pi^{19/4}\ 2^{7/8}}{256\ \Gamma\left(\frac{3}{4}\right)^{19}}$$

0.41625775933855010910881556609652

1,-19,152,-627,1140,988,-9063,14212,7410,-44270,22781,38114,36176,-137256,
-154850,480605,-46493,-316065,-153406,-254525,1156948,-184927,88483,-1051042,
-2381650,3838874,1417039,-542146

A010826 Expansion of Product_{k>=1} (1 - x^k)^20.

$$\frac{e^{\frac{5\pi}{6}}\ \pi^5\ \sqrt{2}}{256\ \Gamma\left(\frac{3}{4}\right)^{20}}$$

0.39749235587054872059020735440297

1,-20,170,-760,1615,476,-11210,22440,1615,-64600,60002,51680,-9520,-213180,-83980,
803528,-379525,-692360,119700,80920,1899830,-1235360,-755990,-1200040,
-1981435,8388956,-361760,-5068440

A010827 Expansion of Product_{k>=1} (1 - x^k)^21.

$$\frac{e^{\frac{7\pi}{8}}\ \pi^{21/4}\ 2^{1/8}}{256\ \Gamma\left(\frac{3}{4}\right)^{21}}$$

0.37957291949725433136391092762121

1,-21,189,-910,2205,-378,-13321,33345,-10395,-86870,122703,46683,-98287,-264915,
96390,1163064,-1113588,-1066527,1042055,536025,2287467,-3603805,-1391733,
478170,-562555,13742379,-7889805

A010828 Expansion of Product_{k>=1} (1 - x^k)^22.

$$\frac{e^{\frac{11\pi}{12}}\ \pi^{11/2}\ 2^{3/4}}{512\ \Gamma\left(\frac{3}{4}\right)^{22}}$$

0.36246131299840693800372049829736

1,-22,209,-1078,2926,-1672,-15169,47234,-31350,-107426,218680,-266,-234707,
-237006,405878,1444806,-2415413,-1091398,3018169,523050,1618309,-7344304,
-134905,5365866,5852,17297588,-24278276

A010829 Expansion of Product_{k>=1} (1 - x^k)^23.

$$\frac{e^{\frac{23\pi}{24}}\ \pi^{23/4}\ 2^{3/8}}{512\ \Gamma\left(\frac{3}{4}\right)^{23}}$$

0.346121118425782364627907922725 41

1,-23,230,-1265,3795,-3519,-16445,64285,-64515,-120175,354706,-123763,-407560,
-48530,817190,1464341,-4376693,-135355,6303955,-1282710,-682088,-11372603,
5678585,13479425,-5451115,16579596

A010830 Expansion of Product_{k>=1} (1-x^k)^25.

$$\frac{e^{\frac{25\pi}{24}}\ \pi^{25/4}\ 2^{5/8}}{1024\ \Gamma\left(\frac{3}{4}\right)^{25}}$$

0.315617428079405019814543517067 77

1,-25,275,-1700,6050,-9405,-15550,107525,-182875,-81675,756655,-801550,-662975,
1220175,1361350,-209440,-9601900,8608900,14889050,-19948500,-6262465,
-7057550,38788925,19716425,-69119875,23579969,-82427400,98068850,191984400

A010831 Expansion of Product_{k>=1} (1-x^k)^26.

$$\frac{e^{\frac{13\pi}{12}}\ \pi^{13/2}\ 2^{1/4}}{1024\ \Gamma\left(\frac{3}{4}\right)^{26}}$$

0.301389012520607197768420801682 13

1,-26,299,-1950,7475,-13754,-12220,132756,-276575,0,1010100,-1486030,-519961,
2486300,829725,-2215486,-11643060,18523050,16317925,-42861650,0,11010090,
59644221,-5743400,-138219900

A010832 Expansion of Product_{k>=1} (1-x^k)^27.

$$\frac{e^{\frac{9\pi}{8}}\ \pi^{27/4}\ 2^{7/8}}{2048\ \Gamma\left(\frac{3}{4}\right)^{27}}$$

0.287802031151758185659464044290 64

1,-27,324,-2223,9126,-19278,-5967,159030,-399087,151593,1270971,-2500875,74970,
4203522,-1004157,-4796037,-11750778,32885190,10452375,-77533092,27104868,
43070625,63798840,-69960267,-215939061,236414349,-37046646,237487433,

85921371

A010833 Expansion of Product_{k>=1} (1-x^k)^28.

$$\frac{e^{\frac{7\pi}{6}}\ \pi^7\ \sqrt{2}}{2048\ \Gamma\left(\frac{3}{4}\right)^{28}}$$

0.27482756734343181504637005922754

1,-28,350,-2520,11025,-26180,4158,184600,-554400,401100,1496964,-3920280,1444625,6224400,-4972350,-7121296,-8308965,50796900,-8971200,-121968000,94011435,80598288,20282500,-175228200

A010834 Expansion of Product_{k>=1} (1-x^k)^29.

$$\frac{e^{\frac{29\pi}{24}}\ \pi^{29/4}\ 2^{1/8}}{2048\ \Gamma\left(\frac{3}{4}\right)^{29}}$$

0.26243800806284592719020759338079

1,-29,377,-2842,13195,-34684,19285,206973,-745706,782275,1621564,-5803161,4026360,8149841,-12056025,-7428263,254504,69194580,-49156653,-167517050,224634319,94868280,-112333182,-288914501,-172722550,1061590530,-420678727,-212254364

A010835 Expansion of Product_{k>=1} (1-x^k)^30.

$$\frac{e^{\frac{5\pi}{4}}\ \pi^{15/2}\ 2^{3/4}}{4096\ \Gamma\left(\frac{3}{4}\right)^{30}}$$

0.25060698510614829308978567529888

1,-30,405,-3190,15660,-45036,40745,222750,-974835,1334580,1547469,-8174520,8380245,9200250,-23243355,-2643380,14704740,82050570,-116275500,-195804810,442809990,25147930,-371898000,-313802910,125394405,1688931000,-1364323095,-737497840,158838945,-1653918750,6309965146,-1076120370

A010836 Expansion of Product_{k>=1} (1-x^k)^31.

$$\frac{e^{\frac{31\pi}{24}}\,\pi^{31/4}\,2^{3/8}}{4096\,\Gamma\left(\frac{3}{4}\right)^{31}}$$

0.23930931898002219390022906285200

1,-31,434,-3565,18445,-57505,70091,227447,-1241550,2102730,1139498,-11000164,15185009,8060465,-39266925,11975548,33735905,79961555,-212042635,-176681400,762467041,-231771190,-762218948,-59474275,687626655,2193123086,-3317871844

A010837 Expansion of Product_{k>=1} (1-x^k)^32.

$$\frac{e^{\frac{4\pi}{3}}\,\pi^{8}}{4096\,\Gamma\left(\frac{3}{4}\right)^{32}}$$

0.22852096531317712573524151049795

1,-32,464,-3968,21576,-72384,109120,215296,-1542684,3135712,217248,-14153856,25215616,2704192,-60182656,43083520,52111434,50631680,-328746320,-68928128,1172526144,-825260672,-1202344640

A010838 Expansion of Product_{k>=1} (1-x^k)^44.

$$\frac{e^{\frac{11\pi}{6}}\,\pi^{11}\,\sqrt{2}}{131072\,\Gamma\left(\frac{3}{4}\right)^{44}}$$

0.13137820342052912231427879924236

1,-44,902,-11352,96965,-582692,2428382,-6245448,3684670,43828180,-195750104,340202584,211248851,-2418539816,4734800950,-43313600,-16560186918,26632794760,4021681554,-50231748600,12519655368

A010839 Expansion of Product_{k >= 1} (1-x^k)^48.

$$\frac{e^{2\pi}\,\pi^{12}}{262144\,\Gamma\left(\frac{3}{4}\right)^{48}}$$

0.10924185720151259307844968747852

1,-48,1080,-15040,143820,-985824,4857920,-16295040,28412910,38671600,-424520544,1268350272,-1211937160,-4306546080,18293091840,-23522231424,-26299018683,137218594320,-150999182320,-134713340160

A010840 Expansion of Product_{k>=1} (1-x^k)^40.

$$\frac{e^{\frac{5\pi}{3}}\ \pi^{10}}{32768\ \Gamma\left(\frac{3}{4}\right)^{40}}$$

0.158000172975518947937132097401 18

1,-40,740,-8320,62530,-322048,1085240,-1799680,-2821065,26012480,-66837420,35093760,268749870,-783902720,526221400,1691816960,-3960854625,1042577120,5103133240,-380798080,-10159511430

A010841 Expansion of Product_{k>=1} (1-x^k)^64.

$$\frac{e^{\frac{8\pi}{3}}\ \pi^{16}}{16777216\ \Gamma\left(\frac{3}{4}\right)^{64}}$$

0.052221831587666303075967361057886

1,-64,1952,-37632,512400,-5207936,40618368,-244952576,1124362248,-3684692800,6607738816,8603838208,-109557823168,389162471040,-599467398400,-815811136000,6834665221028,-15689583552384,5284986829472,66706108652800,-183175485196256,124242038746624

A014103 Expansion of (eta(q^2) / eta(q))^24 in powers of q.

$$\frac{e^{\pi}}{8}$$

2.892586579097408625716135795993 6

1,24,300,2624,18126,105504,538296,2471424,10400997,40674128,149343012,519045888,1718732998,5451292992,16633756008,49010118656,139877936370,387749049720,1046413709980,2754808758144,7087483527072,17848133716832,44056043512488,106727749011456

A014452 Theta series of quadratic form with Gram matrix [1, 0, 0; 0, 2, 1; 0, 1, 2].

$$\frac{4\ \pi^{7/4}\ 2^{3/4}\ \sqrt{4}}{3\ \Gamma\left(\frac{2}{3}\right)^2\ \sqrt{\Gamma\left(\frac{11}{12}\right)}\ \Gamma\left(\frac{7}{12}\right)^{5/2}\ \left(\sqrt{3}-1\right)\ \left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{3/2}}$$

1.098607982494500942862475376529 1

1,2,6,12,2,0,18,12,6,14,12,12,12,0,12,36,2,12,42,12,0,0,24,24,18,14,12,48,12,0,48,12,6,

36,12,24,14,0,24,48,12,12,72,36,12,0,24,24,12,14,30,72,0,0,54,24,12,48,36,12,36,0,36,84,2,24,48,36,12,0,24,24,42,24,36,60,12

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*A014455 Theta series of quadratic form with Gram matrix [1, 0, 0; 0, 1, 0; 0, 0, 2]. Number of integer solutions to x^2 + y^2 + 2*z^2 = n.*

$$\frac{2^{3/4}\,\Gamma\left(\frac{5}{8}\right)^3\left(2+\sqrt{2}\right)^2}{16\,\pi^{3/4}\,\Gamma\left(\frac{7}{8}\right)^3}$$

1.184749035989950709489335712014 6

1,4,6,8,12,8,8,16,6,12,24,8,24,24,0,16,12,16,30,24,24,16,24,16,8,28,24,32,48,8,0,32,6,32,48,16,36,40,24,16,24,16,48,40,24,40,0,32,24,36,30,16,72,24,32,48,0,32,72,24,48,40,0,48,12,16,48,56,48,32,48,16,30,64

A014705 Expansion of ((theta_2)^4 + (theta_3)^4) / eta(z/2)^4.

$$3\,e^{-\frac{\pi}{6}}\sqrt{2}$$

2.513276055114399369306483459941 2

1,28,134,568,1809,5316,13990,34696,80724,180068,384940,796760,1598789,3127360,5971922,11170160,20491033,36947444,65553412,114619248,197681341,336670120,566630192,943234040,1553941445,2535325644,4098671374,6568931200,10441889389

A014787 Expansion of Jacobi theta constant (theta_2/2)^12.

$$\frac{e^{\frac{3\pi}{2}}\,\pi^3\sqrt{2}}{256\,\Gamma\left(\frac{3}{4}\right)^{12}}$$

1.662967016962091736154205555004 6

1,12,66,232,627,1452,2982,5544,9669,16016,25158,38160,56266,80124,111816,153528,205260,270876,353870,452496,574299,724044,895884,1103520,1353330,1633500,1966482,2360072,2792703,3299340,3892922,4533936,5273841,6134448

A014969 Expansion of (theta_3(q) / theta_4(q))^2 in powers of q.

$$\sqrt{2}$$

1.414213562373095048801688724209 7

1,8,32,96,256,624,1408,3008,6144,12072,22976,42528,76800,135728,235264,400704,

671744,1109904,1809568,2914272,4640256,7310592,11404416,17626944,27009024,41047992,61905088,92681664

A014972 Expansion of (theta_3(q) / theta_4(q))^4 in powers of q; also of 1 / (1 - lambda (z)).

2

2.

1,16,128,704,3072,11488,38400,117632,335872,904784,2320128,5702208,13504512,30952544,68901888,149403264,316342272,655445792,1331327616,2655115712,5206288384,10049485312,19115905536,35867019904,66437873664

A015128 Number of overpartitions of n: an overpartition of n is an ordered sequence of nonincreasing integers that sum to n, where the first occurrence of each integer may be overlined.

$$\frac{2^{1/4}\,\Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

1.094595923039909831839529744 7143

1,2,4,8,14,24,40,64,100,154,232,344,504,728,1040,1472,2062,2864,3948,5400,7336,9904,13288,17728,23528,31066,40824,53408,69568,90248,116624,150144,192612,246256,313808,398640,504886,637592,802936,1008448

A022065 Theta series of D*_12 lattice.

$$\frac{9\,\pi^3}{8\,\Gamma\left(\frac{3}{4}\right)^{12}}$$

3.042261873299028719252035726 9512

1,24,264,5856,7944,75024,64416,403392,253704,1423032,825264,3865248,1938336,8911056,4437312,18305856,8118024,34076592,15653352,59426400,24832944,98427648,42517728,154472256,61903776,234450024,98021616,345796800,133522752,492267600

A022567 Expansion of Product_{m>=1} (1+x^m)^2.

$$\frac{e^{\frac{\pi}{12}}\,2^{3/4}}{2}$$

1.092548010608571263838279345 5681

1,2,3,6,9,14,22,32,46,66,93,128,176,238,319,426,562,736,960,1242,1598,2048,2608,3306,4175,5248,6570,8198,10190,12622,15589,19190,23552,28830,35190,42842,52034,63040,76198,91904,110604,132832,159216,190464,227417

A022568 Expansion of Product_{m>=1} (1+x^m)^3.

$$\frac{e^{\frac{\pi}{8}}\ 2^{5/8}}{2}$$

1.141986042281423210930688703390 5

1,3,6,13,24,42,73,120,192,302,465,702,1046,1536,2226,3195,4536,6378,8896,12306,16896,23045,31224,42048,56310,75000,99384,131072,172071,224910,292774,379608,490338,631104,809472,1034814,1318707,1675344,2122176,2680602,3376728,4242432,5316562,6646272

A022569 Expansion of Product_{m>=1} (1+x^m)^4.

$$\frac{e^{\frac{\pi}{6}}\ \sqrt{2}}{2}$$

1.193661155484746746869753104818 8

1,4,10,24,51,100,190,344,601,1024,1702,2768,4422,6948,10752,16424,24782,36972,54602,79872,115805,166540,237664,336720,473856,662596,920934,1272728,1749407,2392268,3255410,4409344,5945730,7983388,10675712,14220240,18870672,24951740,32878114

A022570 Expansion of Product_{m>=1} (1+x^m)^5.

$$\frac{e^{\frac{5\pi}{24}}\ 2^{3/8}}{2}$$

1.247674578637324678107014627904 0

1,5,15,40,95,206,425,835,1575,2880,5121,8885,15095,25165,41240,66562,105945,166480,258560,397235,604162,910325,1359680,2014235,2961000,4321283,6263360,9019555,12908945,18367805,25990149,36581200,51228175,71393555,99037095,136775685,188091960

A022571 Expansion of Product_{m>=1} (1+x^m)^6.

$$\frac{e^{\frac{\pi}{4}}\ 2^{1/4}}{2}$$

1.304132120765588521634535681088 6

1,6,21,62,162,384,855,1806,3648,7110,13434,24702,44361,78006,134592,228302,381300,627840,1020394,1638528,2601849,4088780,6363354,9813504,15005458,22760262,34261248,51204222,76005906,112092438,164296989,239404860,346898496,499971968,716906394

A022572 Expansion of Product_{m>=1} (1+x^m)^7.

$$\frac{e^{\frac{7\pi}{24}}\,2^{1/8}}{2}$$

1.363144378777096483969918726316 0

1,7,28,91,259,665,1589,3585,7707,15925,31808,61677,116536,215180,389194,690935,1206016,2072700,3511851,5872545,9701097,15844866,25606840,40974528,64956836,102076289,159084401,245995792,377574402,575459136,871189669,1310492547,1959326215,2912370944

A022573 Expansion of Product_{m>=1} (1+x^m)^8.

$$\frac{e^{\frac{\pi}{3}}}{2}$$

1.424826954113180748737063659926 4

1,8,36,128,394,1088,2776,6656,15155,33056,69508,141568,280382,541696,1023512,1895424,3446617,6163536,10854400,18846592,32296742,54673920,91506000,151523840,248403014,403396288,649286724,1036287744,1640796160,2578305024,4022351720,6232177664,9592906446

A022574 Expansion of Product_{m>=1} (1+x^m)^9.

$$\frac{e^{\frac{3\pi}{8}}\,2^{7/8}}{4}$$

1.489300679205173494525755384776 9

1,9,45,174,576,1701,4614,11709,28125,64525,142353,303552,628251,1266273,2492352,4801578,9071973,16837893,30744649,55296000,98070633,171683463,296919081,507695670,858866880,1438391232,2386178649,3923081006,6395198049,10341173376,16593811467

A022575 Expansion of Product_{m>=1} (1+x^m)^10.

$$\frac{e^{\frac{5\pi}{12}}\,2^{3/4}}{4}$$

1.556691854177825682018493374 39

1,10,55,230,815,2562,7360,19700,49755,119700,276278,615130,1326965,2783360,5693305,11384326,22299655,42865280,80983060,150571340,275840009,498410280,889056835,1566896280,2730474975,4707724814,8035618655,13586253440,22765030080,37820087380

A022576 Expansion of Product_{m>=1} (1+x^m)^11.

$$\frac{e^{\frac{11\pi}{24}}\,2^{5/8}}{4}$$

1.627132494263606279727960207 8006

1,11,66,297,1122,3740,11341,31922,84535,212707,512369,1188353,2666048,5807296,12319659,25518757,51725289,102786959,200568907,384847199,727019260,1353654049,2486522369,4509972819,8083287432,14326409152,25124415635,43622744968,75026666913,127882738709

A022577 Expansion of Product_{m>=1} (1+x^m)^12.

$$\frac{e^{\frac{\pi}{2}}\sqrt{2}}{4}$$

1.700760588412551564119951550 4459

1,12,78,376,1509,5316,16966,50088,138738,364284,913824,2203368,5130999,11585208,25444278,54504160,114133296,234091152,471062830,931388232,1811754522,3471186596,6556994502,12222818640,22502406793,40944396120,73680871326,131211105208,231355524048,404110659732

A022578 Expansion of Product_{m>=1} (1+x^m)^13.

$$\frac{e^{\frac{13\pi}{24}}\,2^{3/8}}{4}$$

1.777720369604265534806620957 4245

1,13,91,468,1989,7384,24739,76427,220948,604175,1575392,3941847,9511944,22226049,50458447,111609537,241099027,509680951,1056262792,2149214288,4299359012,8465605408,16424772637,31429372312,59365381608,110770031489,204315725953,372772306309,673125106316

A022579 Expansion of Product_{m>=1} (1+x^m)^14.

$$\frac{e^{\frac{7\pi}{12}}\,2^{1/4}}{4}$$

1.858162597391596291178202611877

1,14,105,574,2576,10052,35273,113794,342699,974176,2635955,6833540,17061345,41197422,96544003,220212384,490104727,1066552228,2273590095,4755188704,9771319068,19751596934,39317784863,77150246040,149357609184,285497384004,539227765104,1006978117880

A022580 Expansion of Product_{m>=1} (1+x^m)^15.

$$\frac{e^{\frac{5\pi}{8}}\,2^{1/8}}{4}$$

1.942244853229474329645680416597 9

1,15,120,695,3285,13443,49305,165795,519240,1531960,4295046,11520000,29718605,74060355,178930605,420368858,962785560,2154411120,4718952965,10134292275,21369644184,44300604895,90390209685,181706747280,360207189225,704726281002,1361748557400

A022581 Expansion of Product_{m>=1} (1+x^m)^16.

$$\frac{e^{\frac{2\pi}{3}}}{4}$$

2.030131849167444078961749404838 9

1,16,136,832,4132,17696,67712,236928,770442,2355824,6834240,18940480,50424536,129535968,322288128,779022208,1834203955,4216133616,9479688992,20884408704,45148577668,95902505120,200394848512,412350614016,836328261438,1673337795840,3305364030464,6450386567104,12443955363352,23745951691328,44844655553536,83856163515776,155331420821337

A022582 Expansion of Product_{m>=1} (1+x^m)^17.

$$\frac{e^{\frac{17\pi}{24}}\,2^{7/8}}{8}$$

2.121995750510598657213726710366 9

1,17,153,986,5134,22967,91528,332741,1121864,3550518,10644516,30446116,

83554915,221028152,565733446,1405559677,3398860779,8018057345,18489507853,41750241112,92455892640,201066321781,429927351485,904832464581,1876192580514,3836193955660,7740691696577

A022583 Expansion of Product_{m>=1} (1+x^m)^18.

$$\frac{e^{\frac{3\pi}{4}}\,2^{3/4}}{8}$$

2.218016513080991090462116717928 0

1,18,171,1158,6309,29430,121962,460008,1605996,5254334,16260867,47949804,135509922,368764290,970099191,2475106170,6141671649,14856839874,35107961175,81189855828,184033842021,409446105486,895231350108,1925717858910,4079428991751,8518121246538

A022584 Expansion of Product_{m>=1} (1+x^m)^19.

$$\frac{e^{\frac{19\pi}{24}}\,2^{5/8}}{8}$$

2.318382235740196682595222390838 0

1,19,190,1349,7676,37278,160417,626924,2263698,7647652,24405633,74120672,215505334,602763220,1628328880,4262845643,10845598563,26882001287,65048680364,153950675585,356936640088,811869015895,1813912504439,3985419541978,8619872682020,18369414409148

A022585 Expansion of Product_{m>=1} (1+x^m)^20.

$$\frac{e^{\frac{5\pi}{6}}\,\sqrt{2}}{8}$$

2.423289528863596897291987800819 0

1,20,210,1560,9255,46724,208510,843320,3145855,10963160,36042250,112633760,336622160,966897820,2680139300,7193849624,18752326235,47590579080,117840608100,285228791880,675978772326,1570897356960,3584273539170,8038904002760,17741382028085,38563932406500

A022586 Expansion of Product_{m>=1} (1+x^m)^21.

$$\frac{e^{\frac{7\pi}{8}}\,2^{3/8}}{8}$$

2.532943899488203569842639036966 1

1,21,231,1792,11067,58002,268093,1120899,4315269,15497986,52441347,168487473,517184185,1524390777,4332440454,11914441196,31798680774,82574231187,209091601271,517272712845,1252351944165,2971700764941,6920411525727,15835150526244,35640093688017

A022587 Expansion of Product_{m>=1} (1 + x^m)^22.

$$\frac{e^{\frac{11\pi}{12}}\ 2^{1/4}}{8}$$

2.647560153888504722805123339614 9

1,22,253,2046,13134,71368,341275,1473494,5848810,21628002,75261384,248403586,782547909,2365168542,6887441198,19393122562,52959869787,140631776582,363943223941,919706094494,2273411319069,5505315501136,13078268135683,30514651732686,70005101272876

A022588 Expansion of Product_{m>=1} (1 + x^m)^23.

$$\frac{e^{\frac{23\pi}{24}}\ 2^{1/8}}{8}$$

2.767362818368953698849466947509 4

1,23,276,2323,15479,87101,430445,1917349,7839849,29824583,106646308,361327079,1167406906,3615602714,10780913004,31061653709,86741652761,235404301651,622271232287,1605432041576,4049617772390,10002785010369,24227747380447,57613905606273,134662398395411

A022589 Expansion of Product_{m>=1} (1 + q^m)^25.

$$\frac{e^{\frac{25\pi}{24}}\ 2^{7/8}}{16}$$

3.023476741841129297333981247891 4

1,25,325,2950,21100,126905,667850,3157725,13667175,54900675,206841715,736953800,2499500175,8113694575,25320834800,76253908740,222308896150,629146702350,1732518057650,4651937973250,12201443983695,31311905220800,78732034002275,194220161393825

A022590 Expansion of Product_{m>=1} (1 +q^m)^26.

$$\frac{e^{\frac{13\pi}{12}}\ 2^{3/4}}{16}$$

3.160289712505926460385953940706 6

1,26,351,3302,24427,151658,822484,4001660,17799041,73391968,283542740,1034983222,3593364255,11931569028,38062054017,117095671862,348538604492,1006539781078,2827014674081,7738495452714,20683325376064,54066855041446,138427417637249,347584258977384

A022591 Expansion of Product_{m>=1} (1+q^m)^27.

$$\frac{e^{\frac{9\pi}{8}}\ 2^{5/8}}{16}$$

3.303293499419810611922838624076 6

1,27,378,3681,28134,180144,1005957,5032422,22986801,97229361,384953553,1438738443,5110502256,17348445108,56541857409,177611637141,539501563962,1589134470966,4550281700055,12692702415312,34556103662778,91975719684573,239686155975618

A022592 Expansion of Product_{m>=1} (1+q^m)^28.

$$\frac{e^{\frac{7\pi}{6}}\ \sqrt{2}}{16}$$

3.452768238345083571935861962857 9

1,28,406,4088,32249,212772,1222438,6283400,29454432,127721972,517920340,1980864312,7194850761,24957519216,83064794746,266299577040,825106028411,2477872472348,7230302637376,20543975496576,56949757063171,154281017250160,409072030569524

A022593 Expansion of Product_{m>=1} (1+q^m)^29.

$$\frac{e^{\frac{29\pi}{24}}\ 2^{3/8}}{16}$$

3.609006741247339738403866236518 1

1,29,435,4524,36801,249980,1476535,7792619,37464346,166445529,690898842,2702690003,10033022642,35545708813,120756549637,394935306099,1247670362782,3818503661392,11350088407317,32837741707782,92652254354675,255382893501050,688721602753864

A022594 Expansion of Product_{m>=1} (1+q^m)^30.

$$\frac{e^{\frac{5\pi}{4}}\, 2^{1/4}}{16}$$

3.772315069896382280352554673606 9

1,30,465,4990,41820,292236,1773325,9603210,47322525,215286380,914269641,
3656192760,13865226845,50148901590,173821904265,579696375972,
1866529110420,5819476726230,17613901516660,51870170192610,
148909462006422,417468856858550,1144709400114480

A022595 Expansion of Product_{m >=1} (1+q^m)^31.

$$\frac{e^{\frac{31\pi}{24}}\, 2^{1/8}}{16}$$

3.943013135422703742708828182208 1

1,31,496,5487,47337,340039,2118385,11763911,59384158,276491170,1200703594,
4906332242,18998567031,70120824201,247873586247,842625902072,
2764160465375,8776228494225,27038961793349,81019542614568,
236575764828149,674366427736330,1879524499776454

A022596 Expansion of Product_{m>=1} (1+q^m)^32.

$$\frac{e^{\frac{4\pi}{3}}}{16}$$

4.121435325004025916281474158619 8

1,32,528,6016,53384,393920,2517824,14329600,74059812,352722720,1565583648,
6533812352,25823152256,97218393280,350348856704,1213526698240,
4054279504266,13103911398400,41081428394096,125210147216000,
371754750363712,1077136199182976,3050503922469440

A022597 Expansion of Product_{m >= 1} (1 + q^m)^(-2).

$$e^{-\frac{\pi}{12}}\, 2^{1/4}$$

0.915291584708464979505502874878 41

1,-2,1,-2,4,-4,5,-6,9,-12,13,-16,21,-26,29,-36,46,-54,62,-74,90,-106,122,-142,171,-200,
227,-264,311,-358,408,-470,545,-626,709,-810,933,-1062,1198,-1362,1555,-1760,
1980,-2238,2536,-2858,3205,-3602,4063,-4560,5092,-5704,6400,-7150,7966

A022598 Expansion of Product_{m>=1} (1+q^m)^(-3).

$$e^{-\frac{\pi}{8}}\ 2^{3/8}$$

0.875667445113630255639017310870 88

1,-3,3,-4,9,-12,15,-21,30,-43,54,-69,94,-123,153,-193,252,-318,391,-486,609,-754,918,-1119,1376,-1680,2019,-2432,2946,-3540,4220,-5034,6015,-7157,8463,-9999,11835,-13956,16374,-19206,22542,-26376,30750,-35829,41745

A022599 Expansion of Product_{m>=1} (1+q^m)^(-4).

$$e^{-\frac{\pi}{6}}\ \sqrt{2}$$

0.837758685038133123102161153313 73

1,-4,6,-8,17,-28,38,-56,84,-124,172,-232,325,-448,594,-784,1049,-1388,1796,-2320,3005,-3864,4912,-6216,7877,-9940,12430,-15488,19309,-23972,29580,-36408,44766,-54876,66978,-81536,99150,-120272,145374,-175344,211242

A022600 Expansion of Product_{m>=1} (1+q^m)^(-5).

$$e^{-\frac{5\pi}{24}}\ 2^{5/8}$$

0.801491043515667415230225209287 80

1,-5,10,-15,30,-56,85,-130,205,-315,465,-665,960,-1380,1925,-2651,3660,-5020,6775,-9070,12126,-16115,21220,-27765,36235,-47101,60810,-78115,100105,-127825,162391,-205530,259475,-326565

A022601 Expansion of Product_{m>=1} (1+q^m)^(-6).

$$e^{-\frac{\pi}{4}}\ 2^{3/4}$$

0.766793474431832656273142096838 67

1,-6,15,-26,51,-102,172,-276,453,-728,1128,-1698,2539,-3780,5505,-7882,11238,-15918,22259,-30810,42438,-58110,78909,-106392,142770,-190698,253179,-334266,439581,-575784,750613,-974316,1260336,-1624702,2086530,-2670162

A022602 Expansion of Product_{m>=1} (1+q^m)^(-7).

$$e^{-\frac{7\pi}{24}}\ 2^{7/8}$$

0.733598007349096493021429984674 31

1,-7,21,-42,84,-175,322,-547,931,-1561,2527,-3976,6167,-9485,14336,-21280,31304,-45696,65940,-94122,133371,-187734,262143,-363265,500381,-685503,933506,-1263794,1702590,-2283379,3047597

A022604 Expansion of Product_{m>=1} (1+q^m)^(-9).

$$2\,e^{-\frac{3\pi}{8}}\,2^{1/8}$$

0.67145608268552666730828499093504

1,-9,36,-93,207,-459,957,-1827,3357,-6061,10620,-18045,30006,-49122,79128,-125247,195435,-301599,460167,-694026,1036368,-1534305,2252277,-3278709,4736973,-6797196,9689103,-13722487

A022605 Expansion of Product_{m>=1} (1+q^m)^(-10).

$$2\,e^{-\frac{5\pi}{12}}\,2^{1/4}$$

0.64238789283583347821388745936422

1,-10,45,-130,310,-712,1555,-3130,5990,-11190,20316,-35750,61405,-103570,171730,-279782,448785,-710830,1112515,-1720550,2632389,-3989480,5992085,-8921670,13176300,-19316144,28118360,-40654520

A022606 Expansion of Product_{m>=1} (1+q^m)^(-11).

$$2\,e^{-\frac{11\pi}{24}}\,2^{3/8}$$

0.61457810198337379705348807978702

1,-11,55,-176,451,-1078,2453,-5181,10329,-19954,37455,-68135,120725,-209583,357258,-598136,985072,-1599807,2565365,-4063191,6362323,-9860851,15138013,-23027730,34729959,-51965067,77174735

A022608 Expansion of Product_{m>=1} (1+q^m)^(-13).

$$2\,e^{-\frac{13\pi}{24}}\,2^{5/8}$$

0.56251816489148280679536341014188

1,-13,78,-299,884,-2314,5681,-13052,28158,-58136,116129,-224692,422214,-774372,1390948,-2450565,4240561,-7221383,12121980,-20076953,32836752,-53089309,84922877,-134488770,210979548

A022609 Expansion of Product_{m>=1} (1+q^m)^(-14).

$$2\, e^{-\frac{7\pi}{12}}\, 2^{3/4}$$

0.53816603638656503218428925153404

1,-14,91,-378,1197,-3290,8386,-20008,44800,-95578,196679,-391692,756798,-1424934,2624119,-4735878,8388919,-14611226,25065397,-42400456,70790195,-116765126,190454404,-307408346,491306907

A022610 Expansion of Product_{m>=1} (1+q^m)^(-15).

$$2\, e^{-\frac{5\pi}{8}}\, 2^{7/8}$$

0.51486814257082290650181159304354

1,-15,105,-470,1590,-4593,12160,-30075,69780,-153750,325728,-667020,1323915,-2557140,4824630,-8912759,16148505,-28746945,50364835,-86956260,148098384,-249060745,413975085,-680602545

A022611 Expansion of Product_{m>=1} (1+q^m)^(-16).

$$4\, e^{-\frac{2\pi}{3}}$$

0.49257884428053253456613459891468

1,-16,120,-576,2076,-6304,17344,-44416,106630,-242480,528608,-1112128,2265656,-4486112,8666112,-16376192,30328593,-55145872,98613424,-173670400,301550788,-516747872,874774016,-1464096000

A022612 Expansion of Product_{m>=1} (1+q^m)^(-17).

$$4\, e^{-\frac{17\pi}{24}}\, 2^{1/8}$$

0.47125447812955237835000141458672

1,-17,136,-697,2669,-8517,24361,-64549,160140,-375564,842078,-1818932,3800537,-7709449,15239497,-29440226,55697542,-103382254,188589925,-338602243,599066162,-1045509435,1801660255,-3068201310

A022613 Expansion of Product_{m>=1} (1+q^m)^(-18).

$$4\, e^{-\frac{3\pi}{4}}\, 2^{1/4}$$

0.45085327097539282474462386389612

1,-18,153,-834,3384,-11340,33729,-92430,236727,-572120,1318743,-2922948,6259641,-13000770,26283159,-51879720,100210041,-189775800,352975681,-645780060,1163610432,-2067225594,3624593265,-6277838652

A022614 Expansion of Product_{m>=1} (1+q^m)^(-19).

$$4\,e^{-\frac{19\pi}{24}}\,2^{3/8}$$

0.43133525808815864778086987966032

1,-19,171,-988,4237,-14896,46075,-130549,344888,-858325,2032924,-4621313,10137716,-21545639,44525987,-89757843,176925625,-341688495,647687314,-1206921212,2213842874,-4001882220,7136374179

A022615 Expansion of Product_{m>=1} (1+q^m)^(-20).

$$4\,e^{-\frac{5\pi}{6}}\,\sqrt{2}$$

0.41266220486206227696431178359552

1,-20,190,-1160,5245,-19324,62150,-182040,495750,-1269620,3088376,-7197240,16164595,-35136760,74192590,-152674048,306968470,-604298520,1166898210,-2213813640,4132159452,-7597272900

A022616 Expansion of Product_{m>=1} (1+q^m)^(-21).

$$4\,e^{-\frac{7\pi}{8}}\,2^{5/8}$$

0.39479753191614546515207858660086

1,-21,210,-1351,6426,-24780,82845,-250806,703731,-1853481,4628337,-11052867,25403952,-56451192,121738767,-255623851,524037507,-1051143723,2066899387,-3990768663,7577013360,-14163858895

A022617 Expansion of Product_{m>=1} (1+q^m)^(-22).

$$4\,e^{-\frac{11\pi}{12}}\,2^{3/4}$$

0.37770624343748620349960822373465

1,-22,231,-1562,7799,-31438,109208,-341660,987327,-2672868,6848490,-16752958,39388481,-89439944,196910681,-421739450,881199561,-1800336692,3603535166,-7078509064,13665905671

A022618 Expansion of Product_{m>=1} (1+q^m)^(-23).

$$4\,e^{-\frac{23\pi}{24}}\,2^{7/8}$$

0.36135485862651956333125792453081

1,-23,253,-1794,9384,-39491,142462,-460483,1370041,-3810479,10013533,-25082512,60303171,-139870107,314254704,-686285914,1461009887,-3039222369,6190256915,-12366732828,24269855093

A022620 Expansion of Product_{m>=1} (1+q^m)^(-25).

$$8\, e^{-\frac{25\pi}{24}}\, 2^{1/8}$$

0.330745061194370418039506453621 90

1,-25,300,-2325,13275,-60655,235525,-811975,2558575,-7502175,20713560,-54345175,136483700,-329961200,771284950,-1749490965,3862641850,-8322360350,17536187475,-36204137625,73353404555,-146061623800,286183499350,-552361219950,1051231017350

A022621 Expansion of Product_{m>=1} (1+q^m)^(-26).

$$8\, e^{-\frac{13\pi}{12}}\, 2^{1/4}$$

0.316426685832881440226930693183 36

1,-26,325,-2626,15626,-74256,298831,-1063426,3447132,-10372882,29340142,-78744042,202029633,-498419898,1187802148,-2744629914,6168519890,-13520237380,28964225680,-60763817556,125042511217,-252773944748,502601225828,-984061449124,1899179853506

A022622 Expansion of Product_{m>=1} (1+q^m)^(-27).

$$8\, e^{-\frac{9\pi}{8}}\, 2^{3/8}$$

0.302728171195093524810737968933 99

1,-27,351,-2952,18279,-90234,376065,-1380861,4603419,-14211732,41168493,-112989411,296067411,-745157691,1809973404,-4259279106,9741879531,-21715736634,47285714262,-100777640049,210581729640,-432065248731,871606288422,-1730764207107,3386501241606

A022623 Expansion of Product_{m>=1} (1+q^m)^(-28).

$$8\, e^{-\frac{7\pi}{6}}\, \sqrt{2}$$

0.289622682720025638203095260058 63

1,-28,378,-3304,21259,-108892,469630,-1778536,6096125,-19303088,57249374,-160633424,429762354,-1103189388,2730461208,-6542033848,15223719392,-34504452668,76349114366,-165267288816,350579820199,-729912979244,

1493568080228,-3007227042624,5964244118126

A022624 Expansion of Product_{m>=1} (1+q^m)^(-29).

$$8\, e^{-\frac{29\pi}{24}}\, 2^{5/8}$$

0.27708454754905263295363395559840

1,-29,406,-3683,24592,-130558,582233,-2273136,8008524,-26002734,78934897,-226364662,618201990,-1618116248,4079918534,-9950307189,23552872174,-54265164588,121990316096,-268139308160,577310455320,-1219428331519,2530473842822,-5165078293276,10381346324862

A022625 Expansion of Product_{m>=1} (1+q^m)^(-30).

$$8\, e^{-\frac{5\pi}{4}}\, 2^{3/4}$$

0.26508920423432922288909369967593

1,-30,435,-4090,28305,-155586,716910,-2884080,10440930,-34752790,107952705,-316326840,881621260,-2352438330,6041102175,-14993771926,36092874960,-84513784620,192981056950,-430636738770,940848408276

A022626 Expansion of Product_{m>=1} (1+q^m)^(-31).

$$8\, e^{-\frac{31\pi}{24}}\, 2^{7/8}$$

0.25361315462440040041613333222166

1,-31,465,-4526,32426,-184357,877052,-3633851,13513458,-46099108,146495398,-438514468,1246964119,-3391183930,8867709030,-22393552057,54808232438,-130404256148,302394884204,-684929956630,1518203338688

A022627 Expansion of Product_{m>=1} (1+q^m)^(-32).

$$16\, e^{-\frac{4\pi}{3}}$$

0.24263391783274511924065174751370

1,-32,496,-4992,36984,-217280,1066432,-4548352,17369116,-60711456,197327712,-603261056,1749861312,-4849210560,12909347456,-33162318080,82507571334,-199432268416,469559849680,-1079335967872

A023003 Number of partitions of n into parts of 4 kinds.

$$\frac{2\, e^{-\frac{\pi}{6}}\, \sqrt{2}\, \Gamma\left(\frac{3}{4}\right)^4}{\pi}$$

1.202636121227624307007994692425 1

1,4,14,40,105,252,574,1240,2580,5180,10108,19208,35693,64960,116090,203984, 353017,602348,1014580,1688400,2778517,4524760,7296752,11658920,18468245, 29015700,45235414,70005376,107585845,164245380,249162620,375704920, 563251038

A023004 Number of partitions of n into parts of 5 kinds.

$$\frac{2\, e^{-\frac{5\pi}{24}}\, 2^{7/8}\, \Gamma\left(\frac{3}{4}\right)^5}{\pi^{5/4}}$$

1.259411935169008128801555497799 3

1,5,20,65,190,506,1265,2990,6765,14725,31027,63505,126730,247170,472295,885723, 1633000,2963840,5302075,9358470,16313440,28107365,47902010,80803485, 134992865,223474667,366772720,597049255,964375855,1546208695,2461649861, 3892774130

A023005 Number of partitions of n into parts of 6 kinds.

$$\frac{4\, e^{-\frac{\pi}{4}}\, 2^{1/4}\, \Gamma\left(\frac{3}{4}\right)^6}{\pi^{3/2}}$$

1.318868105197997371307389023870 5

1,6,27,98,315,918,2492,6372,15525,36280,81816,178794,380051,788004,1597725, 3174210,6190182,11867310,22395359,41650050,76413078,138421358,247783113, 438616728,768291650,1332444330,2289213495,3898064226,6581591157, 11023247880

A023006 Number of partitions of n into parts of 7 kinds.

$$\frac{4\, e^{-\frac{7\pi}{24}}\, 2^{5/8}\, \Gamma\left(\frac{3}{4}\right)^7}{\pi^{7/4}}$$

1.381131169505022569310469647668 1

1,7,35,140,490,1547,4522,12405,32305,80465,192899,447146,1006145,2204475, 4715510,9869132,20247710,40786690,80782800,157510780,302666903,573720808,

1073720305,1985506775,3630307835,6567206471,11760658378,20860415590,36665885170,63891010155,110415782785,189320804673,322174588225

A023007 Number of partitions of n into parts of 8 kinds.

$$\frac{8\, e^{-\frac{\pi}{3}}\, \Gamma\left(\frac{3}{4}\right)^8}{\pi^2}$$

1.446333640081425068302628530914 3

1,8,44,192,726,2464,7704,22528,62337,164560,417140,1020416,2418710,5573568,12520744,27484160,59068372,124505880,257770964,524871424,1052316364,2079491744,4053978040,7803219968,14840711765,27907041392,51917588800,95608651776

A023008 Number of partitions of n into parts of 9 kinds.

$$\frac{8\, e^{-\frac{3\pi}{8}}\, 2^{3/8}\, \Gamma\left(\frac{3}{4}\right)^9}{\pi^{9/4}}$$

1.514614284739432184419814096893 5

1,9,54,255,1035,3753,12483,38709,113265,315445,841842,2164185,5382276,12994290,30543210,70066809,157199805,345552183,745377215,1579915080,3294664578,6766656315,13700560491,27370137195,53991639855,105242612526,202837976145

A023009 Number of partitions of n into parts of 10 kinds.

$$\frac{8\, e^{-\frac{5\pi}{12}}\, 2^{3/4}\, \Gamma\left(\frac{3}{4}\right)^{10}}{\pi^{5/2}}$$

1.586118422446145934077956228587 7

1,10,65,330,1430,5512,19415,63570,195910,573430,1605340,4322110,11240645,28341730,69488650,166096270,387890625,886698670,1987322415,4373271870,9461022285,20144164040,42254620785,87398226990,178396331100,359618772656,716409453320

A023010 Number of partitions of n into parts of 11 kinds.

$$\frac{16\, e^{-\frac{11\pi}{24}}\, 2^{1/8}\, \Gamma\left(\frac{3}{4}\right)^{11}}{\pi^{11/4}}$$

1.660998232600092858118718876017 4

1,11,77,418,1925,7854,29183,100529,325193,997150,2919411,8207563,22259237,58454165,149104450,370410700,898202998,2130141651,4949034937,11281187225,25262712629,55641782779,120661583781,257862888360,543532730675,1130864017283

A023011 Number of partitions of n into parts of 13 kinds.

$$\frac{16\, e^{-\frac{13\pi}{24}}\, 2^{7/8}\, \Gamma\left(\frac{3}{4}\right)^{13}}{\pi^{13/4}}$$

1.821529848554983244961424662930 2

1,13,104,637,3276,14820,60697,229372,810654,2706366,8600501,26173966,76654656,216903064,594973106,1586553501,4122693185,10461067253,25967050382,63154957281,150708128116,353304272945,814564136529,1848834255034,4134822087942

A023012 Number of partitions of n into parts of 14 kinds.

$$\frac{32\, e^{-\frac{7\pi}{12}}\, 2^{1/4}\, \Gamma\left(\frac{3}{4}\right)^{14}}{\pi^{7/2}}$$

1.907523307378311384301352732359 1

1,14,119,770,4165,19754,84602,333608,1228080,4263770,14071827,44420796,134793918,394805110,1119974875,3086034350,8280022023,21678277754,55486209625,139065013640,341779759755,824753397814,1956347387428

A023013 Number of partitions of n into parts of 15 kinds.

$$\frac{32\, e^{-\frac{5\pi}{8}}\, 2^{5/8}\, \Gamma\left(\frac{3}{4}\right)^{15}}{\pi^{15/4}}$$

1.997576471820114990764799541496 4

1,15,135,920,5220,25893,115700,475065,1817910,6551390,22414314,73265580,229972855,696109950,2039031360,5796944357,16036186005,43259046975,114012183695,294067720380,743368453326,1844121021245,4494803760045

A023014 Number of partitions of n into parts of 16 kinds.

$$\frac{64\, e^{-\frac{2\pi}{3}}\, \Gamma\left(\frac{3}{4}\right)^{16}}{\pi^4}$$

2.091880998431185230857408731118 4

1,16,152,1088,6460,33440,155584,663936,2636326,9845040,34861152,117809728, 381946360,1193074144,3603543040,10556065152,30068145905,83466484112, 226236086512,599785472000,1557643542308,3967888347232,9926348625408, 24413219138816

A023015 Number of partitions of n into parts of 17 kinds.

$$\frac{64\, e^{-\frac{17\pi}{24}}\, 2^{3/8}\, \Gamma\left(\frac{3}{4}\right)^{17}}{\pi^{17/4}}$$

2.190637591766506974412106134 6737

1,17,170,1275,7905,42619,206091,912475,3753600,14503040,53073898,185172670, 619237835,1993524975,6200890505,18693654410,54763023032,156250892610, 435071511875,1184288668525,3156320339542,8247548150893,21155326555195, 53326448236250

A023016 Number of partitions of n into parts of 18 kinds.

$$\frac{64\, e^{-\frac{3\pi}{4}}\, 2^{3/4}\, \Gamma\left(\frac{3}{4}\right)^{18}}{\pi^{9/2}}$$

2.294056431536741753689905322 9153

1,18,189,1482,9576,53676,269325,1235286,5256711,20985272,79260723,285139764, 982349361,3255488082,10416507579,32281134120,97154549289,284625019800, 813310723925,2270826800172,6204926551824,16615751700618

A023017 Number of partitions of n into parts of 19 kinds.

$$\frac{128\, e^{-\frac{19\pi}{24}}\, 2^{1/8}\, \Gamma\left(\frac{3}{4}\right)^{19}}{\pi^{19/4}}$$

2.402357619925305862360858056 8488

1,19,209,1710,11495,66880,347681,1649637,7252300,29875505,116319938,430976031, 1527928814,5206792965,17119704425,54484060983,168297474675,505762373795, 1481733152790,4239676354650,11866652524496,32536693623850

A023018 Number of partitions of n into parts of 20 kinds.

$$\frac{128\, e^{-\frac{5\pi}{6}}\, \sqrt{2}\, \Gamma\left(\frac{3}{4}\right)^{20}}{\pi^5}$$

2.515771650023050654081934111038 8

1,20,230,1960,13685,82524,443870,2175800,9869990,41907380,168012824,640438680, 2334121995,8171039800,27580783270,90058003200,285253928790,878572253720, 2636748302650,7725084195240,22130265931900,62079251390180

A023019 Number of partitions of n into parts of 21 kinds.

$$\frac{128\, e^{-\frac{7\pi}{8}}\, 2^{7/8}\, \Gamma\left(\frac{3}{4}\right)^{21}}{\pi^{21/4}}$$

2.634539896377495849157935106866 6

1,21,252,2233,16170,100926,560945,2837418,13266099,57994475,239170239, 937026279,3507380170,12601619226,43628951025,146036139347,473924014599, 1494785958435,4591920193357,13764656869425,40328218603134

A023020 Number of partitions of n into parts of 22 kinds.

$$\frac{256\, e^{-\frac{11\pi}{12}}\, 2^{1/4}\, \Gamma\left(\frac{3}{4}\right)^{22}}{\pi^{11/2}}$$

2.758915128700632177102149236706 0

1,22,275,2530,18975,122430,702328,3661900,17627775,79264900,335937954, 1351507830,5191041625,19125838600,67862904725,232671319474,773027485065, 2494957906100,7839428942950,24025993453000,71941861591215

A023021 Number of partitions of n into parts of 23 kinds.

$$\frac{256\, e^{-\frac{23\pi}{24}}\, 2^{5/8}\, \Gamma\left(\frac{3}{4}\right)^{23}}{\pi^{23/4}}$$

2.889162049828597140469095484669 4

1,23,299,2852,22126,147407,871838,4680845,23177583,107100903,466066181, 1923780950,7576060505,28601630657,103928814438,364712523658, 1239637963457,4091266414235,13139808783725,41145568478988,

125833948024603,376417734772625,1102878148698235

A025233 Expansion of Product_{m>=1} (1 + q^m)^48.

$$\frac{e^{2\pi}}{64}$$

8.367057117574449007860145774828 9

1,48,1176,19648,252204,2655456,23901760,189208704,1344644814,8713158928,52107076128,290374290624,1519725061816,7518508799904,35352238216704,158716136933504,683059486979301,2827559773199856

A028586 Theta series of lattice with Gram matrix [2 1; 1 3].

$$\frac{\sqrt{5}\,\sqrt{\pi}\,\sqrt{2}\,\sqrt{5-\sqrt{5}}\,\left(\sqrt{5}+1\right)}{20\,\Gamma\left(\frac{3}{4}\right)^2}$$

1.004057684683773284119962765 1406

1,0,2,4,0,0,0,4,2,0,2,0,4,0,0,4,0,0,6,0,0,0,0,4,0,0,0,8,4,0,0,0,2,0,0,4,0,0,0,0,2,0,8,4,0,0,0,4,4,0,2,0,0,0,0,0,0,0,4,0,4,0,0,12,0,0,0,4,0,0,0,0,6,0,0,4,0,0,0,0,0,0,4,4,0,0,0,8,0,0,6,0,4,0,0,0,0,0,6,0,0,0,0,4

A029552 Expansion of phi(x) / f(-x) in powers of x where phi(), f() are Ramanujan theta functions.

$$e^{-\frac{\pi}{24}}\,2^{3/8}$$

1.137724822890260115943374792 4343

1,3,4,7,13,19,29,43,62,90,126,174,239,325,435,580,769,1007,1313,1702,2191,2808,3580,4539,5735,7216,9036,11278,14028,17383,21474,26448,32471,39759,48550,59123,71829,87053,105249,126975,152858,183623

A029594 Theta series of quadratic form with Gram matrix [1, 0, 0; 0, 2, 0; 0, 0, 3].

$$\frac{\sqrt{3}\,\Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{5}{8}\right)^8\Gamma\left(\frac{11}{12}\right)^2\Gamma\left(\frac{7}{12}\right)^3\left(17+12\sqrt{2}\right)\left(1+\sqrt{3}\right)\sqrt{2}\,\sqrt{2+\sqrt{2}}}{256\,\pi^{15/4}\,\Gamma\left(\frac{7}{8}\right)^8}$$

1.090668525263772146588632951 0171

1,2,2,6,6,4,12,4,2,14,0,8,18,4,12,16,6,4,14,8,12,24,12,8,12,10,0,18,12,12,36,12,2,16,12,8,42,12,12,36,0,12,0,8,24,28,24,8,18,14,14,32,12,12,48,8,12,36,0,16,48,12,12,28,6,16,36,16,12,32,24,24,14,8,0,42,24,8

A029595 Theta series of quadratic form (or lattice) with Gram matrix [1, 0, 0; 0, 2, 1; 0, 1, 3].

$$\frac{\pi^{3/4}\, 2^{1/5}\, \Gamma\left(\frac{9}{10}\right) \Gamma\left(\frac{7}{10}\right) \left(2+\frac{2\sqrt{5}}{5}\right) \left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right) \left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)}{\Gamma\left(\frac{3}{4}\right)^3 \Gamma\left(\frac{4}{5}\right)^2}$$

1.090843221106686373938705518259 1

1,2,2,8,10,0,4,12,10,6,2,16,16,8,4,4,26,4,10,32,0,8,12,12,20,2,4,32,36,8,0,24,26,8,12,8,30,16,4,24,10,8,8,56,32,0,20,12,32,14,2,48,40,8,16,0,20,16,20,32,12,16,8,36,58,4,8,72,20,8,0,24,50,20,12,8,64

A029769 Expansion of eta(q^2)^12 / theta_3(q)^3 in powers of q.

$$\frac{e^{\pi}\, \pi^{9/4}}{64\, \Gamma\left(\frac{3}{4}\right)^9}$$

0.762481716239479072651345475036 03

1,-6,12,-8,0,12,-48,48,-15,60,-12,-96,0,-120,240,64,96,-234,-156,0,0,444,-240,-96,-335,420,144,384,0,-600,-480,-384,672,-264,840,120,0,-348,912,-480,-768,-168,-684,96,0,1416,-672,768,673,510,-2328,0,0,144,1200,960,-1248,-1332,1500,-1920

A029838 Expansion of square root of q times normalized Hauptmodul for Gamma(4) in powers of q^8.

$$e^{-\frac{\pi}{8}}\, 2^{5/8}$$

1.041349956105383833025685189210 7

1,1,-1,0,1,0,-1,-1,2,1,-2,-1,2,1,-3,-1,4,2,-5,-2,5,2,-6,-3,8,4,-9,-4,10,4,-12,-6,15,7,-17,-7,19,8,-22,-10,26,12,-30,-13,33,14,-38,-17,45,21,-51,-22,56,24,-64,-29,74,33,-83,-36,92,40,-104,-46,119,53,-133,-58,147,63,-165,-73,187,83,-208,-90,229,99,-256

A029839 McKay-Thompson series of class 16B for the Monster group.

$$2\, e^{-\frac{\pi}{4}}\, 2^{1/4}$$

1.084409731080684835779922989572 2

1,2,-1,-2,3,2,-4,-4,5,8,-8,-10,11,12,-15,-18,22,26,-29,-34,38,42,-51,-56,66,78,-85,-98,109,120,-139,-156,176,202,-222,-250,279,306,-346,-384,429,482,-530,-590,650,714,-797,-876,972,1080,-1180,-1304,1431,1562,-1728,-1892,2078,2290,-2496

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*A029840 Expansion of Product_{m>=1} ((1+q^(2*m-1))/(1+q^(2*m)))^3.*

$$2\, e^{-\frac{3\pi}{8}}\, 2^{7/8}$$

1.12925002586112224022092510025 86

1,3,0,-5,3,9,-7,-15,9,27,-12,-45,22,66,-36,-99,51,153,-73,-222,108,311,-159,-441,221,624,-297,-863,414,1170,-575,-1584,765,2144,-1014,-2862,1361,3774,-1809,-4964,2361,6516,-3063,-8481

A029841 McKay-Thompson series of class 8E for the Monster group.

$$4\, e^{-\frac{\pi}{2}}\, \sqrt{2}$$

1.17594446486248320313428097137 02

1,4,2,-8,-1,20,-2,-40,3,72,2,-128,-4,220,-4,-360,5,576,8,-904,-8,1384,-10,-2088,11,3108,12,-4552,-15,6592,-18,-9448,22,13392,26,-18816,-29,26216,-34,-36224,38,49700,42,-67728,-51,91688

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*A029842 Expansion of Product_{m>=1} ((1+q^(2*m-1))/(1+q^(2*m)))^5.*

$$8\, e^{-\frac{5\pi}{8}}\, 2^{1/8}$$

1.22456971686691596476716920555 38

1,5,5,-10,-10,31,20,-75,-40,150,84,-280,-165,520,290,-935,-495,1595,855,-2640,-1424,4315,2265,-6925,-3570,10860,5605,-16740,-8615,25520,12984,-38455,-19390,57150,28740,-83961,-42110,122320

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*A029843 Expansion of Product_{m>=1} ((1+q^(2*m-1))/(1+q^(2*m)))^6.*

$$8\, e^{-\frac{3\pi}{4}}\, 2^{3/4}$$

1.27520562090734524833660286258 34

1,6,9,-10,-24,36,65,-102,-153,232,327,-468,-663,918,1287,-1768,-2391,3240,4289,-5676,-7488,9758,12753,-16524,-21250,27300,34758,-44128,-55896,70380,88519,-110874,-138285,172136,213315

---

*A029844 Expansion of Product_{m>=1} ((1+q^(2*m-1))/(1+q^(2*m)))^7.*

$$16\, e^{-\frac{7\pi}{8}}\, 2^{3/8}$$

1.32793531735720271065924534192 05

1,7,14,-7,-42,28,133,-90,-357,231,833,-511,-1792,1064,3695,-2163,-7329,4221,13923,-7847,-25536,14161,45703,-25109,-80010,43526,136941,-73654,-229823,122493,379582,-200935,-617729,324751

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*A029845 Expansion of 16/lambda(z) in powers of nome q = exp(Pi*i*z).*

$$32\, e^{-\pi}$$

1.38284538444071199278136758949 53

1,8,20,0,-62,0,216,0,-641,0,1636,0,-3778,0,8248,0,-17277,0,34664,0,-66878,0,125312,0,-229252,0,409676,0,-716420,0,1230328,0,-2079227,0,3460416,0,-5677816,0,9198424,0,-14729608,0,23328520,0,-36567242,0,56774712,0

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*A029862 Expansion of q^(5/24) / (eta(q) * eta(q^2)^2) in powers of q.*

$$\frac{2\, e^{-\frac{5\pi}{24}}\, 2^{3/8}\, \Gamma\left(\frac{3}{4}\right)^3}{\pi^{3/4}}$$

1.05113900581674187162519810325 41

1,1,4,5,14,18,41,54,109,145,267,357,618,826,1359,1815,2872,3824,5859,7774,11600,15329,22362,29425,42113,55167,77648,101267,140479,182395,249789,322906,437199,562755,754171,966713,1283630,1638716,2157763

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*A030189 Expansion of eta(q)*eta(q^2)*eta(q^4)*eta(q^8).*

$$\frac{e^{\frac{5\pi}{8}}\, 2^{5/16}\, \Gamma\left(\frac{5}{8}\right)^4 \left(3+2\sqrt{2}\right)}{32\,\pi\,\Gamma\left(\frac{7}{8}\right)^4 \sqrt{\sqrt{2}\,\sqrt{2+\sqrt{2}}}}$$

0.95312887978373070743244856614700

1,-1,-2,1,-1,3,3,-1,-2,-2,4,-4,-1,-3,-3,2,2,8,-3,7,6,-5,-7,0,-3,-2,2,-4,1,-4,1,-2,3,1,7,-6,-3,10,10,5,-7,-3,-4,5,-8,8,-1,-4,-1,-7,-9,2,-3,-6,2,-8,14,5,-6,9,12,4,6,3,8,-14,2,-9,-3,-5,-10,12,6,4,-2,-5,-3,0

---

*A030204 Expansion of q^(-1/8) * eta(q) * eta(q^2) in powers of q.*

$$\frac{e^{\frac{\pi}{8}}\, \sqrt{\pi}\, 2^{1/8}}{2\,\Gamma\left(\frac{3}{4}\right)^2}$$

0.95313220370521885773271586161105

1,-1,-2,1,0,2,1,0,0,-2,1,-2,-2,0,2,-1,0,2,0,2,0,1,0,0,-2,0,0,0,-1,-2,-2,0,2,0,0,-2,3,0,0,2,0,0,2,0,2,-1,-2,0,0,0,-2,2,0,-2,-2,-1,-2,2,0,0,0,0,0,0,0,2,1,0,0,0,0,2,2,0,2,-2,0,-2,1,0

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*A030207 Expansion of eta(q)^2 * eta(q^2) * eta(q^4) * eta(q^8)^2 in powers of q.*

$$\frac{e^{\pi}\sqrt{2}\ \Gamma\left(\frac{5}{8}\right)^6\left(7\sqrt{2}+10\right)\sqrt{2-\sqrt{2}}}{512\,\pi^{3/2}\,\Gamma\left(\frac{7}{8}\right)^6}$$

0.91016067657431845046021879463297

1,-2,-2,4,0,4,0,-8,-5,0,14,-8,0,0,0,16,2,10,-34,0,0,-28,0,16,25,0,28,0,0,0,0,-32,-28,-4,0,-20,0,68,0,0,-46,0,14,56,0,0,0,-32,49,-50,-4,0,0,-56,0,0,68,0,-82,0,0,0,0,64,0,56,62,8,0,0,0,40,-142,0,-50,-136,0,0,0,0,-11,92,158,0,0,-28,0

---

*A030211 Expansion of q^(-1/2) * (eta(q) * eta(q^2))^4 in powers of q.*

$$\frac{e^{\frac{\pi}{2}}\,\pi^2\sqrt{2}}{16\,\Gamma\left(\frac{3}{4}\right)^8}$$

0.82530138441469599315517033666575

1,-4,-2,24,-11,-44,22,8,50,44,-96,-56,-121,152,198,-160,176,-48,-162,-88,-198,52,22,528,233,-200,-242,88,-176,-668,550,-264,-44,188,224,728,154,484,-1056,-656,-311,236,-100,-792,714,528,640,-88,-478,484,1566,-968,192,-780,-1994,648,-942

A030212 Glaisher's chi_4(n).

$$\frac{e^{\pi}\,\pi^{5/2}}{64\,\Gamma\left(\frac{3}{4}\right)^{10}}$$

0.82838667943623753807544264315748

1,-4,0,16,-14,0,0,-64,81,56,0,0,-238,0,0,256,322,-324,0,-224,0,0,0,0,-429,952,0,0,82,0,0,-1024,0,-1288,0,1296,2162,0,0,896,-3038,0,0,0,-1134,0,0,0,2401,1716,0,-3808,2482,0,0,0,0,-328,0,0,-6958,0,0,4096,3332,0,0,5152,0,0

A033715 Number of integer solutions (x, y) to the equation x^2 + 2y^2 = n.

$$\frac{\Gamma\left(\frac{5}{8}\right)^2\left(2+\sqrt{2}\right)^{3/2}\sqrt{2}}{8\sqrt{\pi}\ \Gamma\left(\frac{7}{8}\right)^2}$$

1.090492520823083157783069481060 1

1,2,2,4,2,0,4,0,2,6,0,4,4,0,0,0,2,4,6,4,0,0,4,0,4,2,0,8,0,0,0,0,2,8,4,0,6,0,4,0,0,4,0,4,4,4,0,0,0,4,2,2,8,0,0,8,0,0,8,0,4,0,0,0,0,2,0,8,4,4,0,0,0,6,4,0,4,4,0,0,0,0,10,4,4,0,0,4,0,4,4,0,0,0,0,0,0,4,4,2,12,2,0,8,0

A033716 Number of integer solutions to the equation x^2 + 3y^2 = n.

$$\frac{3^{3/4}\,\Gamma\left(\frac{2}{3}\right)\left(1+\sqrt{3}\right)}{6\,\Gamma\left(\frac{3}{4}\right)\Gamma\left(\frac{11}{12}\right)}$$

1.086610160743581104550715786409 0

1,2,0,2,6,0,0,4,0,2,0,0,6,4,0,0,6,0,0,4,0,4,0,0,0,2,0,2,12,0,0,4,0,0,0,0,6,4,0,4,0,0,0,4,0,0,0,0,6,6,0,0,12,0,0,0,0,4,0,0,0,4,0,4,6,0,0,4,0,0,0,0,0,4,0,2,12,0,0,4,0,2,0,0,12,0,0,0,0,0,0,8,0,4,0,0,0,4,0,0,6,0

A033718 Product theta3(q^d); d | 5.

$$\frac{5^{3/4}\sqrt{\pi}\,\sqrt{2}\,\left(5-\sqrt{5}\right)^{3/2}\left(\sqrt{5}+1\right)^{3}}{800\,\Gamma\left(\frac{3}{4}\right)^{2}}$$

1.086435138668513831295048042646 0

1,2,0,0,2,2,4,0,0,6,0,0,0,0,4,0,2,0,0,0,2,8,0,0,4,2,0,0,0,4,4,0,0,0,0,0,6,0,0,0,0,4,0,0,0,6,4,0,0,6,0,0,0,0,8,0,4,0,0,0,0,4,0,0,2,0,0,0,0,8,4,0,0,0,0,0,0,0,0,0,2,10,0,0,8,0,4,0,0,4,0,0,0,0,4,0,4,0,0,0,2,4,0,0,0,8,0,0,0,4,0,0,0,0,0,0,4,0,0,0,4,2,0,0,0,2,12

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*A033761 Product t2(q^d); d | 2, where t2 = theta2(q)/(2*q^(1/4)).*

$$\frac{e^{\frac{3\pi}{8}}\,\sqrt{\pi}\,2^{1/8}}{4\,\Gamma\left(\frac{3}{4}\right)^{2}}$$

1.045242924051309450014140202687 6

1,1,1,2,0,1,2,1,1,1,1,0,3,1,0,2,1,1,1,0,1,3,1,2,0,0,1,2,1,0,3,1,0,2,1,1,2,0,1,0,2,1,2,1,0,3,0,1,3,0,0,2,1,0,0,1,2,4,1,1,0,1,1,1,0,1,3,1,1,0,1,1,2,1,0,3,0,1,4,0,1,0,1,0,2,1,1,2,0,0,2,2,1,3,0,0,2,2,1,0,2,1,0,1,0

---

*A033763 Product t2(q^d); d | 4, where t2 = theta2(q)/(2*q^(1/4)).*

$$\frac{e^{\frac{7\pi}{8}}\ 2^{7/8}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(1+\sqrt{2}\right)}{64\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

1.045246569171231066218094075578 2

1,1,1,2,1,2,3,3,1,2,3,1,5,3,2,4,4,3,3,3,3,5,3,2,5,5,3,8,2,2,7,4,3,6,6,4,5,3,3,5,7,3,8,4,3,10, 6,6,6,4,3,5,10,2,5,7,4,10,3,4,9,9,5,8,3,4,9,7,5,9,9,5,9,5,3,10,6,4,9,5,7,9,10,5,6,7,5

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*A034433 Expansion of q^(-3) * (eta(q) * eta(q^8))^8 in powers of q.*

$$\frac{e^{3\pi}\ \sqrt{2}\ \Gamma\left(\frac{5}{8}\right)^{16}\ \left(99+70\sqrt{2}\right)}{4194304\ \pi^4\ \Gamma\left(\frac{7}{8}\right)^{16}}$$

0.691403402500138195675542804558 13

1,-8,20,0,-70,64,56,0,-133,-96,148,0,670,-512,-968,0,1077,1680,-2064,0,-2098,768, 4400,0,-1766,-8128,7044,0,744,4096,-4760,0,-9780,16344,-6652,0,7894,-13440, -10320,0,41923,-8736,-16780,0,-5892,-6144,14560,0,-27886,-11056,55940

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*A034896 Number of solutions to a^2 + b^2 + 3*c^2 + 3*d^2 = n.*

$$\frac{\Gamma\left(\frac{2}{3}\right)^2\ \sqrt{3}\ \left(1+\sqrt{3}\right)^2}{12\ \Gamma\left(\frac{3}{4}\right)^2\ \Gamma\left(\frac{11}{12}\right)^2}$$

1.180721641431191166530572876613 7

1,4,4,4,20,24,4,32,52,4,24,48,20,56,32,24,116,72,4,80,120,32,48,96,52,124,56,4,160, 120,24,128,244,48,72,192,20,152,80,56,312,168,32,176,240,24,96,192,116,228,124, 72,280,216,4,288,416,80,120,240,120,248,128,32,500

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*A034933 Expansion of theta_3(q)^2 * theta_3(q^3) in powers of q.*

$$\frac{\pi^{1/4}\ \sqrt{3}\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{11}{12}\right)^2\ \Gamma\left(\frac{7}{12}\right)^3\ \sqrt{2}\ \left(1+\sqrt{3}\right)}{8\ \Gamma\left(\frac{3}{4}\right)^8}$$

1.180531104849914812791306537254 3

1,4,4,2,12,16,0,8,20,4,8,8,10,32,8,0,28,24,4,8,32,16,16,16,0,28,8,2,40,48,8,8,52,0,8,16, 12,64,16,8,40,24,0,24,40,16,16,16,26,28,20,0,64,80,0,16,40,24,24,8,0,64,24,8,60,48, 8,24,72,0,16,16,20,48,24,10,40,96

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*A034950 Expansion of eta(8z)*eta(16z)*theta_3(2z).*

$$\frac{e^{\frac{\pi}{2}}\ 2^{15/16}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(2+\sqrt{2}\right)^{3/2}}{32\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3\ \sqrt{\sqrt{2}\ \sqrt{2+\sqrt{2}}}}$$

1.086431022416748179424597134 2311

1,2,0,0,1,-2,0,0,-4,-2,0,0,-3,0,0,0,4,-4,0,0,0,6,0,0,1,4,0,0,4,2,0,0,0,-2,0,0,4,-2,0,0,-3,2,0,0,-4,-4,0,0,-4,2,0,0,-8,-6,0,0,8,-4,0,0,1,-4,0,0,-4,6,0,0,0,2,0,0,0,-2,0,0,4,8,0,0,0,6,0,0,5,-2,0,0,4,-2,0,0,8,4,0,0,-4,-8,0,0,-4,8,0,0,4

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*A034951 Expansion of eta(8z)*eta(16z)*theta_3(2z)*theta_3(4z).*

$$\frac{e^{\frac{\pi}{2}}\ 2^{3/16}\ \Gamma\left(\frac{5}{8}\right)^4\ \left(3+2\sqrt{2}\right)}{32\ \pi\ \Gamma\left(\frac{7}{8}\right)^4\ \left(2-\sqrt{2}\right)^{1/4}}$$

1.090488717875802035308253342 1241

1,2,2,4,1,-2,2,-4,-2,2,-8,-4,-1,-4,-6,0,-4,-8,10,-4,-6,6,2,8,9,-4,-6,4,4,14,2,4,4,10,8,-12,14,-2,8,8,-11,-6,-4,12,-2,-8,0,-4,-2,-2,-6,4,-16,-2,-6,-20,2,8,2,-8,-7,-12,-12,-16,12,-6,-8,8,10,-10,-16,4,-12,18,18,-4,-2,0,18,12,-16,2,-8,20,-9,2,18,-4,28,-6,2

A035016 Fourier coefficients of E_{0,4}.

$$\frac{\pi^2}{4\ \Gamma\left(\frac{3}{4}\right)^8}$$

0.485254297422903107487474001199 58

1,-16,112,-448,1136,-2016,3136,-5504,9328,-12112,14112,-21312,31808,-35168,38528,-56448,74864,-78624,84784,-109760,143136,-154112,149184,-194688,261184,-252016,246176,-327040,390784,-390240,395136,-476672,599152,-596736

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*A035036 Fourier coefficients of E_{gamma,2}*E_{0,4}.*

$$\frac{3\ \pi^3}{8\ \Gamma\left(\frac{3}{4}\right)^{12}}$$

1.014087291099676239750678575 6504

1,8,-248,1952,-8440,25008,-60512,134464,-270584,474344,-775248,1288416,-2059360,

2970352,-4168384,6101952,-8659192,11358864,-14704664,19808800,-26383440,32809216,-39940896,51490752,-66022496,78150008,-92080912,115265600,-141859520

A035099 McKay-Thompson series of class 2B for the Monster group with a(0) = 40.

$$72\, e^{-\pi}$$

3.11140211499160198375807707636 44

1,40,276,-2048,11202,-49152,184024,-614400,1881471,-5373952,14478180,-37122048,91231550,-216072192,495248952,-1102430208,2390434947,-5061476352,10487167336,-21301241856,42481784514,-83300614144

A035150 Fourier coefficients of (normalized Delta)^4.

$$\frac{e^{4\pi}\,\pi^{24}}{68719476736\,\Gamma\left(\frac{3}{4}\right)^{96}}$$

0.01193378336483566879415770625164 7

1,-96,4464,-133760,2897880,-48264768,641207744,-6954435840,62452035180,-467536231520,2916146241888,-14993052561792,61695767581248,-187599812159040,302907998183040,676931170946304,-7255673126427378,28908305661771648

A035190 Fourier coefficients of (normalized Delta)^5.

$$\frac{e^{5\pi}\,\pi^{30}}{35184372088832\,\Gamma\left(\frac{3}{4}\right)^{120}}$$

0.00394432495449674738537683233618 37

1,-120,7020,-266560,7379190,-158562144,2748847640,-39443189760,476711357265,-4910778324400,43440479153652,-331129448133120,2173189785854230,-12199334429782080,57636170473930920,-220943909849546752,623388743422483500

A035363 Number of partitions of n into even parts.

$$\frac{e^{-\frac{\pi}{12}}\,\sqrt{2}\;\Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

1.00187443701462404338485353495 75

1,0,1,0,2,0,3,0,5,0,7,0,11,0,15,0,22,0,30,0,42,0,56,0,77,0,101,0,135,0,176,0,231,0,297,0,385,0,490,0,627,0,792,0,1002,0,1255,0,1575,0,1958,0,2436,0,3010,0,3718,0,4565,0,5604,0,6842,0,8349,0,10143,0,12310,0

A035444 Number of partitions of n into parts 4k.

$$\frac{e^{-\frac{\pi}{6}}\ 2^{7/8}\ \Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

1.000003487366679449649585403461 9

1,0,0,0,1,0,0,0,2,0,0,0,3,0,0,0,5,0,0,0,7,0,0,0,11,0,0,0,15,0,0,0,22,0,0,0,30,0,0,0,42,0,0,0,56,0,0,0,77,0,0,0,101,0,0,0,135,0,0,0,176,0,0,0,231,0,0,0,297,0,0,0,385,0,0,0,490,0,0,0,627,0,0,0,792,0,0,0,1002,0

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*A035457 Number of partitions of n into parts of the form 4*k + 2.*

$$\frac{e^{\frac{\pi}{12}}\ 2^{5/8}}{2}$$

1.001870943123279886463534087967 4

1,0,1,0,1,0,2,0,2,0,3,0,4,0,5,0,6,0,8,0,10,0,12,0,15,0,18,0,22,0,27,0,32,0,38,0,46,0,54,0,64,0,76,0,89,0,104,0,122,0,142,0,165,0,192,0,222,0,256,0,296,0,340,0,390,0,448,0,512,0,585,0,668,0,760,0,864,0,982,0

A036018 Number of partitions of n into parts not of form 4k+2, 12k, 12k+3 or 12k-3.

$$\frac{e^{\frac{\pi}{4}}\ \sqrt{\pi}\ \sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\left(\sqrt{3}-1\right)}{3\ \Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)}$$

1.045169508042729633894311988013 4

1,1,1,1,2,3,3,4,6,7,8,10,13,16,18,22,28,33,38,45,55,65,74,87,104,121,138,160,188,217,247,284,330,378,428,489,562,640,722,820,936,1059,1191,1345,1524,1717,1924,2163,2438,2734,3054,3419,3834,4284,4770,5321,5943

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*A036026 Number of partitions of n into parts not of forms 4*k+2, 20*k, 20*k+5 or 20*k+15.*

$$\frac{e^{\frac{\pi}{2}}\ 2^{2/5}\ 5^{3/4}\ \Gamma\left(\frac{4}{5}\right)^6\ \left(5-\sqrt{5}\right)^3\ \left(\sqrt{5}+1\right)^3\ \left(\sqrt{5}-1\right)^3}{25600\ \Gamma\left(\frac{9}{10}\right)^3\ \Gamma\left(\frac{7}{10}\right)^3}$$

1.045253702003918823466261460422 7

1,1,1,2,3,3,4,6,8,10,12,16,21,25,30,38,48,57,68,84,102,121,143,172,207,243,284,338, 400,465,542,636,744,862,996,1158,1344,1546,1776,2050,2361,2701,3088,3540,4050, 4613,5248,5980,6808,7719,8742,9916,11232

A045479 McKay-Thompson series of class 2B for the Monster group with a(0) = -8.

$$24\ e^{-\pi}$$

1.037134038330533994586025692121 5

1,-8,276,-2048,11202,-49152,184024,-614400,1881471,-5373952,14478180,-37122048, 91231550,-216072192,495248952,-1102430208,2390434947,-5061476352, 10487167336,-21301241856,42481784514,-83300614144

A045490 McKay-Thompson series of class 8A for Monster.

$$6\ e^{-\pi}\ \sqrt{2}\ \left(2+\sqrt{2}\right)$$

1.251931530668176291538220443099 7

1,4,36,128,386,1024,2488,5632,12031,24576,48308,91904,170110,307200,542872, 941056,1602819,2686976,4439688,7238272,11657090,18561024,29242240,45617664, 70507772,108036096,164192188,247620352,370726652,551215104,814216536, 1195226112,1744133125,2530738176

A045820 Theta series of D8 lattice with respect to midpoint of edge.

$$\frac{e^{\frac{\pi}{2}}\ \pi^2\ \sqrt{2}}{4\ \Gamma\left(\frac{3}{4}\right)^8}$$

3.301205537658783972620681346663 0

2,24,124,368,746,1288,2220,3536,4964,6904,9536,12112,15630,20592,24588,29632, 37472,43296,50492,61456,68724,79560,95404,104352,118226,137392,148636, 167920,191904,204712

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*A045823 a(n) = sigma_3(2*n+1).*

$$\frac{3\, e^{\frac{\pi}{2}}\, \pi^2\, \sqrt{2}}{16\, \Gamma\left(\frac{3}{4}\right)^8}$$

2.475904153244087979465511009997 2

1,28,126,344,757,1332,2198,3528,4914,6860,9632,12168,15751,20440,24390,29792, 37296,43344,50654,61544,68922,79508,95382,103824,117993,137592,148878, 167832,192080,205380,226982,260408,276948,300764,340704,357912

A045828 One fourth of theta series of cubic lattice with respect to face.

$$\frac{e^{\frac{\pi}{2}}\, \pi^{3/4}\, \sqrt{2}}{8\, \Gamma\left(\frac{3}{4}\right)^3}$$

1.090496323743840199494904052424493

1,2,2,4,3,2,6,4,4,6,4,4,7,8,2,8,8,4,10,4,4,10,10,8,9,4,6,12,8,6,10,12,4,14,8,4,16,10,8,8,9, 10,12,12,8,12,12,4,20,10,6,20,8,6,10,12,8,20,18,8,11,12,12,16,8,6,20,16,12,14,8,12, 20,14,6,12,20,8,26,12,8,22,8,12,15

A045831 Number of 4-core partitions of n.

$$\frac{e^{\frac{5\pi}{8}}\, \pi^{3/4}\, 2^{7/8}}{16\, \Gamma\left(\frac{3}{4}\right)^3}$$

1.047194862159751021289913631421 9

1,1,2,3,1,3,3,3,4,4,2,2,7,3,5,6,2,4,7,3,4,7,5,8,5,4,4,8,5,6,7,2,9,11,3,8,9,4,6,5,7,5,14,7,4, 10,5,10,11,3,9,10,5,8,10,4,6,15,8,9,10,6,8,15,6,10,6,5,15,9,6,8,14,8,6,13,5,16,18,7,8, 7,9,6,15,6,12,17,5,8,15,7,12

A045834 Half of theta series of cubic lattice with respect to edge.

$$\frac{e^{\frac{\pi}{4}}\, \pi^{3/4}\, 2^{3/4}}{4\, \Gamma\left(\frac{3}{4}\right)^3}$$

1.182544825175533180436258167739 4

1,4,5,4,8,8,5,12,8,4,16,12,9,12,8,12,16,16,8,16,17,8,24,8,8,28,16,12,16,20,13,24,24,8, 16,16,16,28,24,12,32,16,13,28,8,20,32,32,8,20,24,16,40,16,16,32,25,20,24,24,24,28, 24,8,32,36,16,44,16,12,40,32,17,36,32

A047626 Theta series of 14-dimensional integral laminated lattice LAMBDA14.3 with minimal norm 4.

$$\frac{45\,\pi^{7/2}}{32\,\Gamma\left(\frac{3}{4}\right)^{14}}$$

4.48863150236700824925235637717 36

1,0,1212,11584,70380,261120,776800,1989504,4398252,8878080,16788312,29833920,50078944,80686080,126457920,191702144,281524140,403691520,570110556,793005120,1074444600,1431982080,1903243680,2494537344,3204056800,4082872320,5185620120

A050468 a(n) = Sum_{d|n, n/d=1 mod 4} d^4 - Sum_{d|n, n/d=3 mod 4} d^4.

$$\frac{9\,e^{\pi}\,\pi^{5/2}}{256\,\Gamma\left(\frac{3}{4}\right)^{10}}$$

1.86387002873153446066974594710 43

1,16,80,256,626,1280,2400,4096,6481,10016,14640,20480,28562,38400,50080,65536,83522,103696,130320,160256,192000,234240,279840,327680,391251,456992,524960,614400,707282,801280,923520,1048576,1171200

A050470 a(n) = Sum_{d|n, n/d == 1 (mod 4)} d^2 - Sum_{d|n, n/d == 3 (mod 4)} d^2.

$$\frac{e^{\pi}\,\pi^{3/2}}{32\,\Gamma\left(\frac{3}{4}\right)^{6}}$$

1.18918223209883033444104502371 96

1,4,8,16,26,32,48,64,73,104,120,128,170,192,208,256,290,292,360,416,384,480,528,512,651,680,656,768,842,832,960,1024,960,1160,1248,1168,1370,1440,1360,1664,1682,1536,1848,1920,1898,2112,2208,2048,2353,2604

A051136 Number of 2-colored generalized Frobenius partitions.

$$\frac{e^{-\frac{\pi}{12}}\,2^{3/4}\,\Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

1.19143620883713643862901102105 49

1,4,9,20,42,80,147,260,445,744,1215,1944,3059,4740,7239,10920,16286,24028,35110,

50844,73010,104028,147144,206700,288501,400232,552037,757288,1033495, 1403508,1897088,2552812,3420527,4564500,6067265

A052241 McKay-Thompson series of class 8C for Monster.

$$3\, e^{-\frac{\pi}{4}}\, 2^{3/4}$$

2.300380423295497968819426290516 0

1,26,79,326,755,2106,4460,10284,20165,41640,77352,147902,263019,475516,816065, 1413142,2353446,3936754,6391091,10390150,16497734,26184098,40775677, 63394792,97037170,148178934,223351867,335704742,499050461,739575640, 1085723797

A053692 Number of self-conjugate 4-core partitions of n.

$$\frac{e^{\frac{5\pi}{8}}\, 2^{7/8}\, \Gamma\left(\frac{5}{8}\right)^2 \left(2+\sqrt{2}\right) \sqrt{2-\sqrt{2}}}{32\sqrt{\pi}\, \Gamma\left(\frac{7}{8}\right)^2}$$

1.043298262619310750555758245 0705

1,1,0,1,1,1,1,1,1,0,0,2,0,1,1,1,2,0,0,1,1,0,1,1,0,1,2,0,2,1,0,1,0,1,1,1,0,1,0,0,1,3,1,0,1,0,2, 1,0,1,1,1,0,1,0,0,2,0,1,0,1,2,2,0,1,0,0,2,1,1,1,2,0,0,0,0,1,1,0,2,1,0,1,1,0,1,2,0

A053694 Number of self-conjugate 5-core partitions of n.

$$\frac{2\, e^{\pi} \sqrt{\pi}\, \left(5+\sqrt{5}\right)^2 \left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^4}{25\, \Gamma\left(\frac{3}{4}\right)^2}$$

1.043298105417812799171462402 0466

1,1,0,1,1,0,0,1,1,1,0,0,2,0,0,1,2,1,0,1,0,0,0,0,1,2,0,0,2,0,0,1,0,2,0,1,2,0,0,1,2,0,0,0,1,0, 0,0,1,1,0,2,2,0,0,0,0,2,0,0,2,0,0,1,2,0,0,2,0,0,0,1,2,2,0,0,0,0,0,1,1,2,0,0,2,0,0,0,2,1,0, 0,0,0,0,0,2,1,0,1,2,0,0,2,0

A053993 The number phi_2(n) of Frobenius partitions that allow up to 2 repetitions of an integer in a row.

$$\frac{e^{-\frac{\pi}{12}}\, \Gamma\left(\frac{2}{3}\right)^{2/3}\, \Gamma\left(\frac{3}{4}\right)^{1/3}\, \Gamma\left(\frac{7}{12}\right)^{2/3}\, 6^{1/4}}{\pi^{7/12}\, \left(\sqrt{2}\, \left(\sqrt{3}-1\right)\right)^{2/3}}$$

1.049253406814329419722559625481 8

1,1,3,5,9,14,24,35,55,81,120,171,248,345,486,669,920,1246,1690,2256,3014,3984,5253, 6870,8970,11618,15022,19306,24745,31557,40154,50845,64244,80850,101501, 126982,158514,197218,244865,303143,374497,461435

A058514 McKay-Thompson series of class 16A for Monster.

$$e^{-\frac{\pi}{2}}\ 2^{3/4}\left(2+\sqrt{2}\right)$$

1.193644504751421075563071397925 3

1,4,10,24,47,84,150,248,403,648,1002,1536,2316,3420,5004,7224,10309,14592,20456, 28440,39240,53736,73102,98808,132779,177444,235868,312024,410785,538368, 702630,913208,1182342,1525200,1960418,2511360,3206675,4081576,5179670, 6554112,8270086

A058571 McKay-Thompson series of class 24A for Monster.

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

1.135875128892350316169247747210 1

1,3,3,7,18,21,30,57,75,104,156,207,293,411,525,712,984,1248,1622,2169,2757,3530, 4560,5736,7284,9249,11472,14374,18078,22242,27484,34140,41787,51184,62796, 76317,92893,112998,136275,164671

A058584 McKay-Thompson series of class 24a for Monster.

$$\frac{4\,e^{-\frac{\pi}{2}}\,\Gamma\left(\frac{3}{4}\right)^2}{\Gamma\left(\frac{11}{12}\right)\Gamma\left(\frac{7}{12}\right)}$$

0.773814975440419767277575126833 64

1,-5,-5,-9,-14,-19,-34,-55,-69,-104,-164,-209,-283,-413,-539,-712,-968,-1248,-1642, -2167,-2731,-3526,-4592,-5736,-7244,-9255,-11520,-14378,-18018,-22238,-27556, -34132,-41701,-51184,-62900,-76323,-92771,-113002,-136421,-164673,-198842, -238627

A058632 Coefficients of replicable function number 32b.

$$e^{-\frac{\pi}{4}}\ 2^{3/8}\sqrt{2+\sqrt{2}}$$

1.092540390443951081463440832 2 91

1,2,3,6,7,10,16,20,29,40,52,70,91,116,149,190,242,306,383,478,590,730,897,1096,1342,1630,1975,2390,2873,3448,4133,4932,5880,6994,8290,9814,11587,13650,16058,18848,22089,25842,30178,35186,40950,47594,55231,63996,74068,85592,98776,113864

A062243 McKay-Thompson series of class 24c for the Monster group.

$$\frac{3\,e^{-\frac{\pi}{2}}\,\Gamma\left(\frac{2}{3}\right)^2\,\Gamma\left(\frac{3}{4}\right)^2\,\left(1+\sqrt{3}\right)^2}{4\,\pi\,\Gamma\left(\frac{11}{12}\right)^2}$$

0.91543294486043232727103873243182

1,-2,1,0,-2,2,2,-4,3,4,-8,4,5,-14,7,8,-20,12,14,-28,17,20,-44,24,28,-66,36,40,-90,52,56,-124,71,80,-176,96,109,-244,133,144,-326,182,198,-432,240,268,-580,316,349,-772,420,456,-1004,552,600,-1300,713,780,-1692,916,1001,-2186,1182

A062244 McKay-Thompson series of class 36B for the Monster group.

$$\frac{3\,\Gamma\left(\frac{2}{3}\right)^2\,\Gamma\left(\frac{11}{12}\right)\,\Gamma\left(\frac{7}{12}\right)^3\,\left(2+\sqrt{3}\right)\,e^{-\frac{\pi}{3}}}{4\,\pi\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.95873074259369238706844958821752

1,-1,1,1,-1,0,1,-2,0,2,-3,1,4,-4,1,4,-6,1,5,-8,1,8,-10,2,11,-14,4,14,-19,4,17,-24,4,23,-31,6,31,-40,9,38,-50,10,46,-63,11,60,-79,16,77,-98,21,92,-122,24,112,-150,28,140,-183,36,173,-224,46,208,-273,54,249,-329,62,304,-396,78,370,-478,98

A070048 Number of partitions of n into odd parts in which no part appears more than thrice.

$$\frac{e^{-\frac{\pi}{8}}\,2^{7/16}}{\left(2-\sqrt{2}\right)^{1/4}}$$

1.0452465692093665424983597736743

1,1,1,2,1,2,3,3,4,5,6,7,8,9,11,13,16,18,21,24,27,32,36,41,48,54,61,70,78,88,100,112,127,143,159,179,199,222,248,276,308,342,380,421,465,516,570,629,697,767,845,932,1022,1124,1236,1355,1488,1631,1785,1954,2136

A073252 Coefficients of replicable function number 48g.

$$e^{-\frac{\pi}{12}}\sqrt{2}$$

1.088471264837422323824231209508 8

1,2,1,2,4,4,5,6,9,12,13,16,21,26,29,36,46,54,62,74,90,106,122,142,171,200,227,264,311, 358,408,470,545,626,709,810,933,1062,1198,1362,1555,1760,1980,2238,2536,2858, 3205,3602,4063,4560,5092,5704,6400,7150,7966

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*A079006 Expansion of q^(-1/4) * (eta(q) * eta(q^4)^2 / eta(q^2)^3)^2 in powers of q.*

$$\frac{e^{\frac{\pi}{4}}\,2^{3/4}}{4}$$

0.922160666156541173723988915046 62

1,-2,5,-10,18,-32,55,-90,144,-226,346,-522,777,-1138,1648,-2362,3348,-4704,6554, -9056,12425,-16932,22922,-30848,41282,-54946,72768,-95914,125842,-164402, 213901,-277204,357904,-460448,590330,-754368,960948,-1220370

A080015 Expansion of theta_3(q) / theta_3(q^2) in powers of q.

$$\sqrt{2}\,\sqrt{2-\sqrt{2}}$$

1.082392200292393968799446410732 8

1,2,-2,-4,6,8,-12,-16,22,30,-40,-52,68,88,-112,-144,182,228,-286,-356,440,544,-668, -816,996,1210,-1464,-1768,2128,2552,-3056,-3648,4342,5160,-6116,-7232,8538, 10056,-11820,-13872,16248,18996,-22176,-25844,30068

A080054 G.f.: Product_{n >= 0} (1+x^(2n+1))/(1-x^(2n+1)).

$$2^{1/8}$$

1.090507732665257659207010655760 7

1,2,2,4,6,8,12,16,22,30,40,52,68,88,112,144,182,228,286,356,440,544,668,816,996, 1210,1464,1768,2128,2552,3056,3648,4342,5160,6116,7232,8538,10056,11820, 13872,16248,18996,22176,25844,30068,34936,40528

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*A080332 G.f.: Product_{n>0} (1 - x^n)^3 * (1 - x^(2*n - 1))^2 = Sum_{n in Z} (6*n + 1) * x^(n*(3*n + 1)/2).*

$$\frac{e^{\frac{\pi}{24}}\,\pi^{3/4}\,2^{1/8}}{2\,\Gamma\left(\frac{3}{4}\right)^3}$$

0.797000853742640017558397588758 35

1,-5,7,0,0,-11,0,13,0,0,0,0,-17,0,0,19,0,0,0,0,0,0,-23,0,0,0,25,0,0,0,0,0,0,0,0,-29,0,0,0,0,31,0,0,0,0,0,0,0,0,0,0,0,-35,0,0,0,0,0,37,0,0,0,0,0,0,0,0,0,0,0,0,0,-41,0,0,0,0,0,0,0,43,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,-47,0,0,0,0,0,0

A080965 Expansion of eta(q^2)^12/(eta(q)^4eta(q^4)^5) in powers of q.

$$\frac{2^{7/8}\,\pi^{3/4}}{2\,\Gamma\left(\frac{3}{4}\right)^3}$$

1.175932162099660859126749797805 6

1,4,2,-8,-4,8,-8,-16,6,12,8,-8,-8,24,0,-16,12,16,10,-24,-8,16,-24,-16,8,28,8,-32,-16,8,0,-32,6,32,16,-16,-12,40,-24,-16,24,16,16,-40,-8,40,0,-32,24,36,10,-16,-24,24,-32,-48,0,32,24,-24,-16,40,0,-48,12,16,16

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*A080966 Expansion of theta_4(q^2) * theta_2(q)^2/(4*q^(1/2)) in powers of q.*

$$\frac{e^{\frac{\pi}{4}}\,\pi^{3/4}\,2^{5/8}}{4\,\Gamma\left(\frac{3}{4}\right)^3}$$

1.084398385956725017101324675956 6

1,2,-1,-2,0,-4,-1,2,-4,2,4,2,1,-2,4,2,4,0,-4,0,-3,4,-4,-4,0,-2,0,-6,0,2,-1,-4,4,-4,-4,8,4,6,0,2,-8,0,7,2,4,2,4,0,0,-6,4,0,-4,0,0,0,1,-6,-4,4,-8,-2,-4,4,0,2,-4,-6,0,-2,4,-8,1,2,0,0,4,4,4,-2,4,6,0,-2,0,-4,-8,10,8,8,-1,4,4,2,-4,-4,-8,6,4,-6,8,-6,4,4

A081360 Expansion of q^(-1/24) (m (1-m) / 16)^(1/24) in powers of q, where m = k^2 is the parameter and q is the nome for Jacobian elliptic functions.

$$\frac{e^{\frac{\pi}{24}}\,2^{3/4}}{2}$$

0.958498672723820136268708121389 15

1,-1,1,-2,2,-3,4,-5,6,-8,10,-12,15,-18,22,-27,32,-38,46,-54,64,-76,89,-104,122,-142,165,-192,222,-256,296,-340,390,-448,512,-585,668,-760,864,-982,1113,-1260,1426,-1610,1816,-2048,2304,-2590,2910,-3264,3658,-4097,4582,-5120,5718,-6378

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*A081362 Expansion of q^(1/24) * eta(q) / eta(q^2) in powers of q.*

$$e^{-\frac{\pi}{24}}\,2^{1/8}$$

0.956708725113587003449038717361 88

1,-1,0,-1,1,-1,1,-1,2,-2,2,-2,3,-3,3,-4,5,-5,5,-6,7,-8,8,-9,11,-12,12,-14,16,-17,18,-20,23,

-25,26,-29,33,-35,37,-41,46,-49,52,-57,63,-68,72,-78,87,-93,98,-107,117,-125,133,-144,157,-168,178,-192,209,-223,236,-255,276,-294,312,-335,361,-385

A081622 Number of 6-core partitions of n.

$$-\frac{e^{\frac{35\pi}{24}}\,\pi^{7/4}\,2^{17/24}\,\Gamma\left(\frac{11}{12}\right)^2\left(-2+\sqrt{3}\right)}{72\,\Gamma\left(\frac{3}{4}\right)^7\,\Gamma\left(\frac{5}{6}\right)}$$

1.047209429126884559469556922049 5

1,1,2,3,5,7,5,9,10,12,12,14,20,20,21,23,24,24,32,29,35,36,44,47,38,47,49,52,55,58,59,64,66,71,70,78,79,88,87,90,85,87,111,104,102,107,112,113,121,113,130,130,148,153,132,147,149,156,162,149,167,160,178,180

A082303 McKay-Thompson series of class 32e for the Monster group.

$$e^{-\frac{\pi}{8}}\sqrt{2}$$

0.954922120139643887143562123285 77

1,-1,-1,0,1,0,-1,1,2,-1,-2,1,2,-1,-3,1,4,-2,-5,2,5,-2,-6,3,8,-4,-9,4,10,-4,-12,6,15,-7,-17,7,19,-8,-22,10,26,-12,-30,13,33,-14,-38,17,45,-21,-51,22,56,-24,-64,29,74,-33,-83,36,92,-40,-104,46,119,-53,-133,58

A082304 McKay-Thompson series of class 16d for the Monster group.

$$2\,e^{-\frac{\pi}{4}}$$

0.911876255531992473531842589456 06

1,-2,-1,2,3,-2,-4,4,5,-8,-8,10,11,-12,-15,18,22,-26,-29,34,38,-42,-51,56,66,-78,-85,98,109,-120,-139,156,176,-202,-222,250,279,-306,-346,384,429,-482,-530,590,650,-714,-797,876,972,-1080,-1180,1304,1431,-1562,-1728,1892,2078,-2290,-2496

A082556 Expansion of g.f. Product_{m>=1} 1/(1-x^m)^30.

$$\frac{2048\,e^{-\frac{5\pi}{4}}\,2^{1/4}\,\Gamma\left(\frac{3}{4}\right)^{30}}{\pi^{15/2}}$$

3.990311760769298659804880316328 1

1,30,495,5890,56265,456786,3263990,21017040,124018290,679118550,3484681077,16884109080,77731521980,341784289770,1441489548195,5852747363518,22948550618400,87131200662540,321100847115950,1150962640399770,

4020058004480100,13704611801774340

A082557 G.f.: Product_{m>=1} 1/(1-x^m)^32.

$$\frac{4096\, e^{-\frac{4\pi}{3}}\, \Gamma\left(\frac{3}{4}\right)^{32}}{\pi^8}$$

4.375966111597452386283633847601 2

1,32,560,7040,70840,604352,4528832,30529280,188313180,1076484640,5759310304,29064224896,139226153920,636391492800,2787844780160,11748015743232,47774241056710,187997792512640,717605948122000,2662641484567680,9621587501598688,33916687860860288

A082558 Expansion of Product_{m>=1} 1/(1-x^m)^48.

$$\frac{262144\, e^{-2\pi}\, \Gamma\left(\frac{3}{4}\right)^{48}}{\pi^{12}}$$

9.154000358629510030129834209943 0

1,48,1224,21952,309876,3657312,37468928,341773440,2826752418,21491641808,151810235136,1004753937600,6273891838360,37171410206112,209969121051648,1135389617917568,5897908848093087,29521227582821520,142760699405228800

A082559 G.f.: Product_{m>=1} 1/(1-x^m)^64.

$$\frac{16777216\, e^{-\frac{8\pi}{3}}\, \Gamma\left(\frac{3}{4}\right)^{64}}{\pi^{16}}$$

19.149079409849327111983475255950

1,64,2144,49920,905840,13627264,176638592,2025205248,20930373880,197788352320,1728062919232,14083242424576,107837287452608,780481475916160,5366307146732800,35202669371599360,221142159585764508,1334633003840266624,7760187771579170400

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*A082564 Expansion of eta(q)^2 * eta(q^2) / eta(q^4) in powers of q.*

$$\frac{\sqrt{\pi}\; 2^{5/8}}{2\, \Gamma\left(\frac{3}{4}\right)^2}$$

0.910167024735558532577209670342 65

1,-2,-2,4,2,0,-4,0,2,-6,0,4,4,0,0,0,2,-4,-6,4,0,0,-4,0,4,-2,0,8,0,0,0,0,2,-8,-4,0,6,0,-4,0,0,-4,0,4,4,0,0,0,4,-2,-2,8,0,0,-8,0,0,-8,0,4,0,0,0,0,2,0,-8,4,4,0,0,0,6,-4,0,4,4,0,0,0,0,-10,-4,4,0,0,-4,0,4,-4,0,0,0,0,0,0,4,-4,-2,12,2,0,-8,0

A083365 Expansion of psi(x) / phi(x) in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{8}}\ 2^{3/8}}{2}$$

0.960291969224225666034759770930 70

1,-1,2,-3,4,-6,9,-12,16,-22,29,-38,50,-64,82,-105,132,-166,208,-258,320,-395,484,-592,722,-876,1060,-1280,1539,-1846,2210,-2636,3138,-3728,4416,-5222,6163,-7256,8528,-10006,11716,-13696,15986,-18624,21666,-25169,29190,-33808,39104

A083703 Expansion of eta(q)^4/eta(q^4) in powers of q.

$$\frac{\pi^{3/4}\ 2^{3/8}}{2\ \Gamma\left(\frac{3}{4}\right)^3}$$

0.831509606036028624991834672423 95

1,-4,2,8,-4,-8,-8,16,6,-12,8,8,-8,-24,0,16,12,-16,10,24,-8,-16,-24,16,8,-28,8,32,-16,-8,0,32,6,-32,16,16,-12,-40,-24,16,24,-16,16,40,-8,-40,0,32,24,-36,10,16,-24,-24,-32,48,0,-32,24,24,-16,-40,0,48,12,-16,16,56,-16,-32,-48,16,30,-64,8,40,-24

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*A085140 Expansion of q^(-1/6) * eta(q^2)^3 / eta(q)^2 in powers of q.*

$$\frac{e^{\frac{\pi}{6}}\ \pi^{1/4}\ 2^{1/4}}{2\ \Gamma\left(\frac{3}{4}\right)}$$

1.090503929678189490585148280 4866

1,2,2,4,5,6,10,12,15,20,26,32,40,50,60,76,92,110,134,160,191,230,272,320,380,446,522,612,715,830,966,1120,1292,1494,1720,1976,2272,2602,2974,3400,3876,4412,5020,5700,6460,7322,8282,9352,10559,11900,13396

A085261 Expansion of chi(x) / phi(x^2) in powers of x where phi(), chi() are Ramanujan theta functions.

$$\frac{2\, e^{-\frac{\pi}{24}}\, \pi^{1/4}\, \Gamma\left(\frac{7}{8}\right) \left(2-\sqrt{2}\right)}{\Gamma\left(\frac{5}{8}\right)}$$

1.0394161623043749428966718110224

1,1,-2,-1,5,3,-9,-5,18,10,-30,-16,53,29,-85,-44,139,73,-215,-110,335,172,-502,-253,755, 382,-1104,-550,1614,805,-2312,-1142,3305,1631,-4650,-2277,6525,3193,-9041,-4395, 12486,6063,-17070,-8247,23255,11218,-31414,-15090,42289,20285

A089798 Expansion of Jacobi theta function theta_4(q^2).

$$\frac{\pi^{1/4}\, 2^{7/8}}{2\, \Gamma\left(\frac{3}{4}\right)}$$

0.99626511456090713578995763852270

1,0,-2,0,0,0,0,2,0,0,0,0,0,0,0,0,-2,0,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,0,0, 0,0,0,0,-2,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0, 0,0,0,0,0,0,0,0,-2,0,0,0

A089799 Expansion of Jacobi theta function theta_2(q^(1/2))/q^(1/8).

$$\frac{e^{\frac{\pi}{8}}\, \pi^{1/4}\, 2^{3/8}}{\Gamma\left(\frac{3}{4}\right)}$$

2.0865892485875548029353269998454

2,2,0,2,0,0,2,0,0,0,2,0,0,0,0,2,0,0,0,0,0,2,0,0,0,0,0,0,2,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,2, 0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,0, 2,0,0,0,0,0,0,0,0,0,0

A089800 Expansion of Jacobi theta function theta_2(q)/q^(1/4).

$$\frac{e^{\frac{\pi}{4}}\, \pi^{1/4}\, 2^{3/4}}{2\, \Gamma\left(\frac{3}{4}\right)}$$

2.0037348984882403346116855436470

2,0,2,0,0,0,2,0,0,0,0,0,2,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,2,0,0,0, 0,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,2, 0,0,0,0,0,0,0,0,0,0,0,0

A089801 a(n) = 0 unless n = 3j^2 + 2j or 3j^2 + 4j + 1 for some j >= 0, in which case a (n) = 1.

$$\frac{e^{\frac{\pi}{3}}\ \pi^{3/4}\ \sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\sqrt{2}\ \left(\sqrt{3}-1\right)}{6\ \Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)^2}$$

1.043214068977661345490436023864 8

1,1,0,0,0,1,0,0,1,0,0,0,0,0,0,0,1,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,1,0,0,0,0,0,0, 0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0, 0,0,0,0,0,0,1,0

A089807 Expansion of Jacobi theta function (3theta_3(q^9)-theta_3(q))/2.

$$\frac{\sqrt{2}\ 3^{1/12}\ \Gamma\left(\frac{2}{3}\right)^{2/3}\ \left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{2/3}}{4\ \pi^{1/12}\ \Gamma\left(\frac{3}{4}\right)^{1/3}\ \Gamma\left(\frac{11}{12}\right)^{2/3}}$$

0.956782594394922638265143873811 35

1,-1,0,0,-1,0,0,0,0,2,0,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0, 0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0, 0,0,0,0,0,0,0,0,0,0,0,0,0,-1

A092877 Expansion of (eta(q^4) / eta(q))^8 in powers of q.

$$\frac{e^{\pi}}{16}$$

1.446293289548704312858067897 968

1,8,44,192,718,2400,7352,20992,56549,145008,356388,844032,1934534,4306368, 9337704,19771392,40965362,83207976,165944732,325393024,628092832, 1194744096,2241688744,4152367104,7599231223,13749863984

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*A092924 Expansion of a Schwarzian ({f_{32|8}, tau} / (4*Pi)^2) in powers of q^8.*

$$-\frac{15\ \pi^2}{\Gamma\left(\frac{3}{4}\right)^8}$$

−29.115257845374186449248440071 974

1,-1008,8304,-28224,66672,-127008,232512,-346752,533616,-763056,1046304, -1342656,1866816,-2215584,2856576,-3556224,4269168,-4953312,6286128, -6914880,8400672,-9709056,11060928,-12265344,14941248,-15877008,18252192,

-20603520,22935168,-24585120

A093085 Expansion of phi(-x) / psi(x^4) in powers of x where phi(), psi() are Ramanujan theta functions.

$$2\, e^{-\frac{\pi}{2}}\, 2^{1/4} \sqrt{2+\sqrt{2}}$$

0.91357595220400304767646896858042

1,-2,0,0,1,2,0,0,-1,-4,0,0,0,6,0,0,1,-8,0,0,0,12,0,0,-1,-18,0,0,-1,24,0,0,2,-32,0,0,1,44,0,0,-2,-58,0,0,-1,76,0,0,2,-100,0,0,1,128,0,0,-3,-164,0,0,-1,210,0,0,4,-264,0,0,2,332,0,0,-5,-416,0,0,-2,516,0,0,5,-640,0,0,2,790,0,0,-6,-968

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*A093160 Expansion of q^(-1/2) * (eta(q^4) / eta(q))^4 in powers of q.*

$$\frac{e^{\frac{\pi}{2}}}{4}$$

1.20261934524133791386825891667 60

1,4,14,40,101,236,518,1080,2162,4180,7840,14328,25591,44776,76918,129952,216240,354864,574958,920600,1457946,2285452,3548550,5460592,8332425,12614088,18953310,28276968,41904208,61702876,90304598

A096727 Expansion of eta(q)^8 / eta(q^2)^4 in powers of q.

$$\frac{\pi}{2\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.69660196484283842959212313016265

1,-8,24,-32,24,-48,96,-64,24,-104,144,-96,96,-112,192,-192,24,-144,312,-160,144,-256,288,-192,96,-248,336,-320,192,-240,576,-256,24,-384,432,-384,312,-304,480,-448,144,-336,768,-352,288,-624,576,-384,96,-456,744,-576,336,-432,960,-576,192

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*A096920 Expansion of q^(-1/12) * eta(q^2)^4 / (eta(q)^2 * eta(q^4)) in powers of q.*

$$\frac{e^{\frac{\pi}{12}}\, \pi^{1/4}\, 2^{5/8}}{2\,\Gamma\left(\frac{3}{4}\right)}$$

1.08846746895223943488884374102521

1,2,1,2,3,2,4,4,4,6,7,8,8,10,11,14,16,16,20,22,24,28,32,34,39,44,48,54,60,66,73,82,88,98,108,118,132,144,156,172,188,204,224,244,265,290,316,340,372,404,436,474,513,554,600,650,700,756,816,878,948,1022,1096,1182

A096960 a(n) = Sum_{0<d|n, n/d odd} d^5.

$$\frac{3\, e^{\pi}\, \pi^3}{64\, \Gamma\left(\frac{3}{4}\right)^{12}}$$

2.933335288268170491730217563947 1

1,32,244,1024,3126,7808,16808,32768,59293,100032,161052,249856,371294,537856,762744,1048576,1419858,1897376,2476100,3201024,4101152,5153664,6436344,7995392,9768751,11881408,14408200,17211392,20511150

A096961 a(n) = Sum_{0<d|n, n/d odd} d^7.

$$\frac{e^{\pi}\, \pi^4}{4\, \Gamma\left(\frac{11}{12}\right)^8\, \Gamma\left(\frac{7}{12}\right)^8}$$

12.260202752102648586343307603116

1,128,2188,16384,78126,280064,823544,2097152,4785157,10000128,19487172,35848192,62748518,105413632,170939688,268435456,410338674,612500096,893871740,1280016384,1801914272,2494358016,3404825448

A096981 Number of partitions of n into parts congruent to {0, 1, 3, 5} mod 6.

$$\frac{e^{-\frac{5\pi}{24}}\, 2^{35/72}\, 3^{5/12}\, \Gamma\left(\frac{3}{4}\right)^{2/3}\, \Gamma\left(\frac{5}{6}\right)^{1/6}\, \Gamma\left(\frac{7}{12}\right)^{1/3}}{\pi^{1/3}\, \left(\sqrt{2}\, \left(\sqrt{3}-1\right)\right)^{1/3}}$$

1.045250221161812212412623258189 6

1,1,1,2,2,3,5,6,7,10,12,15,21,25,30,39,46,56,72,85,101,125,147,175,215,252,296,356,415,487,582,676,786,927,1072,1244,1460,1682,1939,2255,2588,2976,3446,3942,4510,5189,5916,6751,7739,8797,9999,11406,12927,14657

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*A097057 Number of integer solutions to a^2 + b^2 + 2*c^2 + 2*d^2 = n.*

$$-\frac{\Gamma\left(\frac{5}{8}\right)^4\, \left(3+2\sqrt{2}\right)}{8\, \pi\, \Gamma\left(\frac{7}{8}\right)^4\, \left(\sqrt{2}-2\right)}$$

1.189173937971082454478299988098 4

1,4,8,16,24,24,32,32,24,52,48,48,96,56,64,96,24,72,104,80,144,128,96,96,96,124,112,160,192,120,192,128,24,192,144,192,312,152,160,224,144,168,256,176,288,312,192,

192,96,228,248,288,336,216,320,288,192,320,240,240

A097242 Expansion of q-series 1 / (q^2, q^3, q^9, q^10; q^12)_infinity.

$$\frac{e^{-\frac{\pi}{24}}\ 2^{7/8}\ 3^{1/12}\ \Gamma\left(\frac{2}{3}\right)^{2/3}\ \Gamma\left(\frac{3}{4}\right)^{2/3}\ \left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{2/3}}{4\ \pi^{1/3}\ \Gamma\left(\frac{11}{12}\right)^{2/3}}$$

1.001951793625584215511811061563 1

1,0,1,1,1,1,2,1,2,3,3,3,5,4,6,7,7,8,11,10,13,15,16,18,23,22,27,31,33,37,45,45,53,60,64, 71,84,86,99,111,119,131,151,157,178,198,212,233,264,277,310,342,367,401,449,474, 525,576,618,673,746,790,869,949,1017,1104

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*A097243 Expansion of 1 + 32 * (eta(q^4) / eta(q))^8 in powers of q.*

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3.

1,32,256,1408,6144,22976,76800,235264,671744,1809568,4640256,11404416,27009024, 61905088,137803776,298806528,632684544,1310891584,2662655232,5310231424, 10412576768,20098970624,38231811072,71734039808,132875747328,243175399136

A097340 McKay-Thompson series of class 4A for the Monster group with a(0) = 24.

$$64\ e^{-\pi}$$

2.765690768881423985562735178990 6

1,24,276,2048,11202,49152,184024,614400,1881471,5373952,14478180,37122048, 91231550,216072192,495248952,1102430208,2390434947,5061476352,10487167336, 21301241856,42481784514,83300614144

A097723 One fourth of sum of divisors of 4n+3.

$$\frac{e^{\frac{3\pi}{4}}\ \pi\ 2^{1/4}}{16\ \Gamma\left(\frac{3}{4}\right)^4}$$

1.092532770279331455125856153267 1

1,2,3,6,5,6,10,8,12,14,11,12,18,18,15,26,17,18,31,20,21,30,28,30,39,26,27,38,36,36,42, 32,33,60,35,42,57,38,48,54,41,42,65,62,45,62,54,48,84,50,60,78,53,66,74,56,57,96, 72,60,91,70,63,108,76,66,90,68,93,104,71,84,98

A098613 Expansion of psi(x^2) / f(-x) in powers of x where psi(), f() are Ramanujan theta functions.

$$\frac{e^{\frac{5\pi}{24}}\ 2^{1/8}}{2}$$

1.049165080579315092581738445849 7

1,1,3,4,7,10,17,23,35,48,69,93,131,173,236,310,413,536,704,903,1170,1489,1904,2403, 3044,3811,4784,5951,7409,9157,11325,13912,17095,20891,25519,31029,37708, 45632,55184,66495,80050,96064,115173,137680,164425,195860

A098884 Number of partitions of n into distinct parts in which each part is congruent to 1 or 5 mod 6.

$$\frac{2\ e^{\frac{\pi}{12}}\ \pi^{1/3}\ 3^{11/12}\ \Gamma\left(\frac{11}{12}\right)^{2/3}}{3\ \Gamma\left(\frac{2}{3}\right)^{2/3}\ \Gamma\left(\frac{3}{4}\right)^{2/3}\ \left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{2/3}}$$

1.043214075771501397318424967010 7

1,1,0,0,0,1,1,1,1,0,0,1,2,2,1,0,1,2,3,3,2,1,1,3,5,5,3,1,2,5,7,7,5,3,3,7,11,11,7,4,6,11,15, 15,11,7,8,15,22,22,15,10,13,22,30,30,23,16,18,30,42,42,31,22,27,43,56,56,44,33,37, 57,77,77,59,45,53,79,101,101,82,64,71

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*A100130 Expansion of (eta(q) * eta(q^4) / eta(q^2)^2)^24 in powers of q.*

$$\frac{e^{\pi}}{64}$$

0.361573322387176078214516974499 20

1,-24,300,-2624,18126,-105504,538296,-2471424,10400997,-40674128,149343012, -519045888,1718732998,-5451292992,16633756008,-49010118656,139877936370, -387749049720,1046413709980,-2754808758144,7087483527072

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*A100534 Number of partitions of 2*n into parts of two kinds.*

$$\frac{2\ e^{-\frac{\pi}{24}}\ \sqrt{\pi}\ 2^{3/8}\ \Gamma\left(\frac{7}{8}\right)^2}{\Gamma\left(\frac{5}{8}\right)^2\ \sqrt{2+\sqrt{2}}}$$

1.259389975273295846394595091550 6

1,5,20,65,185,481,1165,2665,5822,12230,24842,49010,94235,177087,326015,589128, 1046705,1831065,3157789,5374390,9035539,15018300,24697480,40210481,

64854575,103679156,164363280,258508230,403531208,625425005

A100535 Number of partitions of 2*n + 1 into parts of two kinds.

$$\frac{2\, e^{\frac{11\pi}{24}}\, 2^{3/8}\, \sqrt{\pi}\, \Gamma\left(\frac{7}{8}\right)^2 \sqrt{2-\sqrt{2}}}{\Gamma\left(\frac{5}{8}\right)^2 \left(2+\sqrt{2}\right)}$$

2.509416351680014449546682306391 0

2,10,36,110,300,752,1770,3956,8470,17490,35002,68150,129512,240840,439190, 786814,1386930,2408658,4126070,6978730,11664896,19283830,31551450,51124970, 82088400,130673928,206327710,323275512,502810130

A101127 McKay-Thompson series of class 12D for the Monster group.

$$4\, e^{-\frac{\pi}{3}}$$

1.403679228713643870262946863987 8

1,8,28,64,134,288,568,1024,1809,3152,5316,8704,13990,22208,34696,53248,80724, 121240,180068,264448,384940,556064,796760,1132544,1598789,2243056,3127360, 4333568,5971922,8188096,11170160,15163392,20491033

A101277 Number of partitions of 2n in which all odd parts occur with multiplicity 2. There is no restriction on the even parts.

$$\frac{e^{-\frac{\pi}{12}}\, 2^{5/8}\, \Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

1.092551820724099159171976655622 3

1,2,3,6,10,16,25,38,57,84,121,172,243,338,465,636,862,1158,1546,2050,2702,3542, 4616,5986,7729,9932,12707,16196,20563,26010,32788,41194,51591,64418,80195, 99558,123269,152226,187514,230434,282519,345596,421844,513834

A102186 The PDO(n) function (Partitions with Designated summands in which all parts are Odd): the sum of products of multiplicities of parts in all partitions of n into odd parts.

$$\frac{2^{5/12}\left(\sqrt{2}\,\left(1+\sqrt{3}\right)\right)^{1/3}}{2}$$

1.047290327060230004194720634253 1

1,1,2,4,5,8,12,16,22,32,42,56,76,98,128,168,213,272,348,436,548,688,852,1056,1308,

1603,1964,2404,2920,3544,4296,5176,6230,7488,8958,10704,12772,15182,18024,21368,25254,29808,35136,41308,48504,56880,66552,77776

A103258 G.f. = theta_4(0,x^4)/theta_4(0,x).

$$\frac{2^{15/16}}{2\left(2-\sqrt{2}\right)^{1/4}}$$

1.094588288578459130320957082252 4

1,2,4,8,12,20,32,48,72,106,152,216,304,420,576,784,1056,1412,1876,2472,3240,4224,5472,7056,9056,11566,14712,18640,23520,29572,37056,46272,57600,71488,88456,109152,134332,164884,201888,246608,300528,365428,443392,536856

A104794 Expansion of theta_4(q)^2 in powers of q.

$$\frac{\sqrt{\pi}\,\sqrt{2}}{2\,\Gamma\left(\frac{3}{4}\right)^2}$$

0.834626841674073186281429732799 00

1,-4,4,0,4,-8,0,0,4,-4,8,0,0,-8,0,0,4,-8,4,0,8,0,0,0,0,-12,8,0,0,-8,0,0,4,0,8,0,4,-8,0,0,8,-8,0,0,0,-8,0,0,0,-4,12,0,8,-8,0,0,0,0,8,0,0,-8,0,0,4,-16,0,0,8,0,0,0,4,-8,8,0,0,0,0,0,8

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*A105094 Expansion of 8 * (eta(q^2) / eta(q)^2)^8 in powers of q.*

$$\frac{32\,\Gamma\left(\frac{3}{4}\right)^8}{\pi^2}$$

16.486201240229170530855156770126

8,128,1152,7680,42112,200448,855552,3345408,12166272,41609856,134973184,418023936,1242729984,3561814784,9877810176,26587137024,69636039808,177877244160,443991342720,1084762764800,2598075516672

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*A105095 Expansion of 8*eta(2*tau)^8/eta(tau)^16 + eta(tau/2)^8/eta(tau)^16.*

$$\frac{24\,e^{-\frac{\pi}{2}}\,\sqrt{2}\,\Gamma\left(\frac{3}{4}\right)^8}{\pi^2}$$

3.635035705323093530673801254983 0

1,36,402,3064,18351,93300,419150,1708632,6432867,22659976,75404754,238825344,724242492,2113022844,5954784540,16263489048,43168780485,111630095424,281807843656,695783026296,1682813702136,3992563842088

A106459 Expansion of f(-x, -x^3) in powers of x where f(,) is Ramanujan's general theta function.

$$\frac{e^{\frac{\pi}{8}}\ \pi^{1/4}\ 2^{1/4}}{2\ \Gamma\left(\frac{3}{4}\right)}$$

0.956705388731092292713504438378 55

1,-1,0,-1,0,0,1,0,0,0,1,0,0,0,0,-1,0,0,0,0,0,-1,0,0,0,0,0,0,1,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,0,0,0,0

A106507 G.f.: Product_{k>0} (1-x^(2k-1))/(1-x^(2k)).

$$\frac{e^{-\frac{\pi}{8}}\ 2^{5/8}\ \Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

0.958502015360153690033751734155 50

1,-1,1,-2,3,-4,5,-7,10,-13,16,-21,28,-35,43,-55,70,-86,105,-130,161,-196,236,-287,350,-420,501,-602,722,-858,1016,-1206,1431,-1687,1981,-2331,2741,-3206,3740,-4368,5096,-5922,6868,-7967,9233,-10670,12306,-14193

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*A106508 Expansion of psi(x)^4 * chi(-x^2)^2 in powers of x where psi(), chi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{3}}\ \pi\ 2^{1/4}}{4\ \Gamma\left(\frac{3}{4}\right)^4}$$

1.180332366498210143173901041963 7

1,4,4,0,2,0,-8,0,-5,-16,4,0,-10,0,-8,0,9,8,0,0,14,0,16,0,-10,32,4,0,0,0,8,0,14,-20,-20,0,2,0,0,0,-11,-16,-20,0,-32,0,16,0,0,-40,4,0,14,0,-8,0,-9,32,-20,0,26,0,0,0,2,36,28,0,0,0,16,0,16,0,28,0,-22,0,0,0,14,56,-16,0,0,0,-40,0,0

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*A107033 Expansion of f(x, x) * f(x, -x^2) in powers of x where f(,) is a Ramanujan theta function.*

$$\frac{99\, e^{\frac{\pi}{24}}\, \Gamma\left(\frac{7}{12}\right)^{17/4}\, \Gamma\left(\frac{2}{3}\right)^{21/2}\, 3^{3/8}\, 2^{1/8}\left(\sqrt{3}+\frac{19}{11}\right)}{256\, \pi^{19/4}\, \Gamma\left(\frac{11}{12}\right)^{25/4}\left(\sqrt{2}\,\left(\sqrt{3}-1\right)\right)^{1/4}}$$

1.131354897518967032511987569 3026

1,3,1,-2,2,1,-4,-1,-2,0,2,-4,-1,-2,-2,1,0,2,-2,2,0,-4,1,0,2,2,5,0,-2,0,0,4,-2,0,0,3,4,0,0,2,1,-4,2,-2,0,0,0,2,-2,0,2,3,-2,0,-2,-2,-4,-1,0,0,0,-4,2,0,4,0,-4,-2,0,-2,-1,0,0,-2,-2,2,-6,1,2,0,0,4,0,-2,2,0,0,-2,-2,-2,2,0,1,0,0,-2,4,0,0,2,1,6,0,2,0

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*A107035 Expansion of q * (psi(q^4) / phi(-q))^2 in powers of q where phi(), psi() are Ramanujan theta functions.*

$$-\frac{e^{\pi}\sqrt{2}\,\left(\sqrt{2}-2\right)}{16}$$

1.198148591400542102718862921 0841

1,4,12,32,78,176,376,768,1509,2872,5316,9600,16966,29408,50088,83968,138738,226196,364284,580032,913824,1425552,2203368,3376128,5130999,7738136,11585208,17225472,25444278,37350816,54504160,79085568

A107080 McKay-Thompson series of class 4A for the Monster group.

$$40\, e^{-\pi}$$

1.728556730550889990976709 4868691

1,0,276,2048,11202,49152,184024,614400,1881471,5373952,14478180,37122048,91231550,216072192,495248952,1102430208,2390434947,5061476352,10487167336,21301241856,42481784514,83300614144,160791890304,305854488576,573872089212,1063005978624,1945403602764,3519965179904

A107635 McKay-Thompson series of class 32a for the Monster group.

$$e^{-\frac{\pi}{8}}\, 2^{3/4}$$

1.135600179543547710956297 5967771

1,3,3,4,9,12,15,21,30,43,54,69,94,123,153,193,252,318,391,486,609,754,918,1119,1376,1680,2019,2432,2946,3540,4220,5034,6015,7157,8463,9999,11835,13956,16374,19206,22542,26376,30750,35829,41745,48526,56250

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*A107653 Expansion of q / (chi(q) * chi(q^3))^6 in powers of q where chi() is a Ramanujan theta function.*

$$-\frac{3\,e^{\pi}\,\pi^2\,\Gamma\left(\frac{11}{12}\right)^{10}\,\Gamma\left(\frac{7}{12}\right)^{6}\left(-7+4\sqrt{3}\right)}{16\,\Gamma\left(\frac{2}{3}\right)^{4}\,\Gamma\left(\frac{3}{4}\right)^{16}}$$

0.77506623790625448524112922266776

1,-6,21,-68,198,-510,1248,-2904,6393,-13604,28044,-55956,108982,-207552,386622,-707216,1271970,-2250582,3925780,-6757272,11483232,-19290824,32057352,-52722744,85884503,-138644292,221885805,-352241792,554892894

A108494 Expansion of f(-q) / f(q) in powers of q where f() is a Ramanujan theta function.

$$\frac{2^{7/8}}{2}$$

0.91700404320467123174354159479415

1,-2,2,-4,6,-8,12,-16,22,-30,40,-52,68,-88,112,-144,182,-228,286,-356,440,-544,668,-816,996,-1210,1464,-1768,2128,-2552,3056,-3648,4342,-5160,6116,-7232,8538,-10056,11820,-13872,16248,-18996,22176,-25844,30068,-34936,40528

A108563 Number of representations of n as sum of twice a square plus thrice a square.

$$\frac{2^{1/12}\sqrt{3}\,\sqrt{\Gamma\left(\frac{5}{6}\right)}\,\Gamma\left(\frac{5}{8}\right)\left(1+\sqrt{3}\right)\left(1+\sqrt{2}\right)}{12\,\pi^{1/4}\,\Gamma\left(\frac{7}{8}\right)\,\Gamma\left(\frac{11}{12}\right)}$$

1.0038968873297938671388676578162

1,0,2,2,0,4,0,0,2,0,0,4,2,0,4,0,0,0,2,0,4,4,0,0,0,0,0,2,0,4,4,0,2,0,0,8,0,0,0,0,0,0,0,0,4,4,0,0,2,0,6,0,0,4,0,0,4,0,0,4,0,0,4,0,0,0,4,0,0,0,0,0,2,0,0,6,0,8,0,0,4,0,0,4,4,0,0,0,0,0,0,0,0,0,4,0,0,0,0,6,4,0,4

A108961 Number of partitions that are 2-close to being self-conjugate.

$$\frac{e^{-\frac{\pi}{24}}\,2^{1/16}}{\left(2-\sqrt{2}\right)^{1/4}}$$

1.0472021660901607007440105150552

1,1,2,3,3,5,7,9,12,16,20,26,33,41,51,64,79,97,119,144,175,212,254,305,365,434,516,612,722,851,1002,1174,1375,1607,1872,2179,2531,2933,3395,3923,4524,5211,5994,6881,7891,9038,10334,11804,13467,15341,17460,19849

A111938 a(n) = n times number of divisors of n of form 4m+1 - n times number of divisors

of form 4m+3.

$$\frac{e^{\pi}}{8\sqrt{\pi}\ \Gamma\left(\frac{3}{4}\right)^2}$$

1.086785510392768657385062139 4977

1,2,0,4,10,0,0,8,9,20,0,0,26,0,0,16,34,18,0,40,0,0,0,0,75,52,0,0,58,0,0,32,0,68,0,36,74,0,0,80,82,0,0,0,90,0,0,0,49,150,0,104,106,0,0,0,0,116,0,0,122,0,0,64,260,0,0,136,0,0,0,72,146,148,0,0,0,0,0,160,81,164

A112142 McKay-Thompson series of class 8B for the Monster group.

$$8\, e^{-\frac{\pi}{2}}$$

1.663036610806095268375644958 6798

1,12,66,232,639,1596,3774,8328,17283,34520,66882,125568,229244,409236,716412,1231048,2079237,3459264,5677832,9200232,14729592,23325752,36567222,56778888,87369483,133315692,201825420,303257512

A112143 McKay-Thompson series of class 8D for the Monster group.

$$4\, e^{-\frac{\pi}{2}}$$

0.831518305403047634 18782247933992

1,-4,2,8,-1,-20,-2,40,3,-72,2,128,-4,-220,-4,360,5,-576,8,904,-8,-1384,-10,2088,11,-3108,12,4552,-15,-6592,-18,9448,22,-13392,26,18816,-29,-26216,-34,36224,38,-49700,42,67728,-51,-91688,-56,123392,66,-165128,78,219784,-85,-291072

A112150 McKay-Thompson series of class 16a for the Monster group.

$$2\, e^{-\frac{\pi}{4}}\sqrt{2}$$

1.289587767779337797 0094677382405

1,6,15,26,51,102,172,276,453,728,1128,1698,2539,3780,5505,7882,11238,15918,22259,30810,42438,58110,78909,106392,142770,190698,253179,334266,439581,575784,750613,974316,1260336,1624702,2086530,2670162,3406695,4333590

A112158 McKay-Thompson series of class 20A for the Monster group.

$$\frac{64\, e^{-\pi}\, 2^{4/5}\, \sqrt{5}\, \Gamma\left(\frac{9}{10}\right)^4 \Gamma\left(\frac{7}{10}\right)^4 \left(5+\sqrt{5}\right)^4 \left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^4 \left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)^4}{125\, \Gamma\left(\frac{4}{5}\right)^8}$$

1.011914735509209125933312695205 5

1,0,6,8,17,32,54,80,116,192,290,408,585,832,1192,1648,2237,3072,4156,5576,7414, 9824,12964,16896,22002,28544,36794,47184,60185,76736,97388,122864,154615, 194048,242904,302800,376271,466720,577176,711840

A112160 McKay-Thompson series of class 24E for the Monster group.

$$2\, e^{-\frac{\pi}{6}}$$

1.184769694376777967330832665323 8

1,4,6,8,17,28,38,56,84,124,172,232,325,448,594,784,1049,1388,1796,2320,3005,3864, 4912,6216,7877,9940,12430,15488,19309,23972,29580,36408,44766,54876,66978, 81536,99150,120272,145374,175344,211242

A112162 McKay-Thompson series of class 24b for the Monster group.

$$\frac{3\, \Gamma\left(\frac{2}{3}\right)^2 \Gamma\left(\frac{7}{12}\right)^2 \left(2+\sqrt{3}\right) e^{-\frac{\pi}{2}}}{2\, \pi\, \Gamma\left(\frac{3}{4}\right)^2}$$

1.057050914280444887264502338030 0

1,1,7,9,10,23,38,47,75,112,148,217,293,385,553,728,928,1272,1670,2111,2765,3566, 4504,5784,7300,9123,11592,14458,17838,22342,27668,33884,41843,51344,62548, 76515,92989,112514,136687,164961,198190

A112173 McKay-Thompson series of class 36b for the Monster group.

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

1.088646950139063110781891499084 7

1,2,1,4,8,6,10,16,18,26,33,40,58,74,82,112,147,166,212,268,316,392,476,560,695,838, 967,1184,1430,1648,1970,2352,2731,3236,3803,4404,5206,6080,6984,8192,9553, 10942,12709,14736,16886,19506,22448,25648

A112179 McKay-Thompson series of class 40B for the Monster group.

$$\frac{e^{-\frac{\pi}{2}}\left(5+\sqrt{5}\right)^2}{10}$$

1.088471592906447019248131854408 9

1,2,1,2,4,6,9,8,13,20,22,28,34,46,57,68,87,104,127,152,187,232,267,318,388,462,545, 632,753,896,1043,1216,1416,1664,1928,2228,2597,2996,3454,3976,4585,5286,6031, 6900,7918,9060,10325,11720,13372,15228

A112180 McKay-Thompson series of class 40a for the Monster group.

$$\frac{8\,e^{-\frac{\pi}{2}}\,2^{2/5}\,5^{3/4}\,\Gamma\left(\frac{9}{10}\right)^2\Gamma\left(\frac{7}{10}\right)^2\left(5+\sqrt{5}\right)^2\left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^2\left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)^2}{25\,\Gamma\left(\frac{4}{5}\right)^4}$$

1.005939727572785111111293942946 77

1,0,3,4,4,4,7,12,13,16,22,28,38,44,55,72,83,104,129,156,187,220,273,328,384,452,539, 652,757,880,1041,1220,1428,1652,1924,2244,2585,2992,3458,3992,4581,5244,6053, 6936,7910,9024,10303,11784,13380,15176

A112206 Coefficients of replicable function number 72b.

$$\frac{e^{-\frac{\pi}{6}}\sqrt{2}\;3^{1/12}\,\Gamma\left(\frac{2}{3}\right)^{2/3}\Gamma\left(\frac{3}{4}\right)^{2/3}\left(\sqrt{2}\;\left(1+\sqrt{3}\right)\right)^{2/3}}{2\,\pi^{1/3}\,\Gamma\left(\frac{11}{12}\right)^{2/3}}$$

1.043382456311712723816743319333 4

1,1,0,2,2,1,2,2,3,4,4,4,7,7,6,10,11,11,14,16,17,21,22,24,32,34,34,44,49,50,60,66,72,84, 90,98,117,125,132,156,171,181,206,226,245,277,298,322,369,397,422,480,522,557, 620,674,728,807,868,936,1043,1121,1198

A112209 McKay-Thompson series of class 80a for the Monster group.

$$\frac{4\,e^{-\frac{\pi}{4}}\,2^{9/10}\sqrt{5}\;\Gamma\left(\frac{9}{10}\right)^2\Gamma\left(\frac{7}{10}\right)^2\left(5+\sqrt{5}\right)^2\left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^2\left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)^2}{25\,\Gamma\left(\frac{4}{5}\right)^4}$$

1.043298419871537531529871026069 0

1,1,0,1,1,2,2,1,3,3,3,3,4,5,5,7,8,8,9,10,13,15,14,17,20,23,24,26,31,34,38,41,46,52,55,62, 70,75,82,90,103,112,118,131,145,161,172,185,208,225,244,265,288,316,339,370,404, 435,469,507,557,601,640,696,755,818

A112603 Number of representations of n as the sum of a square and a triangular number.

$$\frac{e^{\frac{\pi}{8}}\sqrt{\pi}\ 2^{3/8}}{2\,\Gamma\left(\frac{3}{4}\right)^2}$$

1.133471598184469164564798144056 4

1,3,2,1,4,2,1,4,0,2,5,2,2,0,2,3,4,2,0,6,0,1,4,0,2,4,4,0,3,2,2,4,2,0,0,2,3,8,0,2,4,0,2,0,2,3,6,0,0,4,2,2,4,2,2,3,2,2,0,4,0,4,0,0,8,2,1,4,0,0,8,2,2,0,2,2,0,2,1,4,2,4,6,0,2,4,0,4,0,0,0,7,4,0,4,2,2,0,0,0,6,2,4,4,2

A112604 Number of representations of n as a sum of three times a square and two times a triangular number.

$$\frac{e^{\frac{\pi}{4}}\ 2^{1/4}\sqrt{3}\ \Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{11}{12}\right)^2\Gamma\left(\frac{7}{12}\right)^3\left(1+\sqrt{3}\right)}{16\,\Gamma\left(\frac{3}{4}\right)^7}$$

1.002029149683767036540716150054 1

1,0,1,2,0,2,1,0,0,2,0,0,3,0,2,2,0,0,2,0,1,0,0,2,2,0,0,2,0,2,1,0,2,4,0,0,0,0,0,2,0,0,3,0,0,2,0,2,2,0,2,0,0,0,4,0,1,2,0,2,2,0,0,0,0,0,0,0,4,2,0,0,1,0,0,4,0,2,2,0,0,2,0,2,2,0,0,2,0,0,3,0,0,2,0,2,0,0,0,2,0,0,2,0,2

A112610 Number of representations of n as a sum of two squares and two triangular numbers.

$$\frac{e^{\frac{\pi}{4}}\ \pi\ 2^{3/4}}{4\,\Gamma\left(\frac{3}{4}\right)^4}$$

1.284757863890854721516002326457 0

1,6,13,14,18,32,31,30,48,38,42,78,57,54,80,62,84,96,74,96,121,108,90,128,98,102,192,110,114,182,133,156,176,160,138,192,180,150,234,158,192,288,183,174,240,182,228,320,194,198,272,252,240,288,256,252,403,230

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*A113185 Expansion of (5*phi(q)*phi^3(q^5) - phi^3(q)*phi(q^5))/4 in powers of q where phi(q) is a Ramanujan theta function.*

$$\frac{\pi\, 2^{2/5}\, \Gamma\left(\frac{9}{10}\right)^2 \Gamma\left(\frac{7}{10}\right)^2 \left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^2 \left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)^2 \left(\sqrt{5}\,\sqrt{2}\,\sqrt{5+\sqrt{5}}\right)^{11/2}}{1250\, \Gamma\left(\frac{3}{4}\right)^4 \Gamma\left(\frac{4}{5}\right)^4 \left(\sqrt{2}\,\sqrt{5}\,\sqrt{5-\sqrt{5}}\right)^{3/2}}$$

1.037453866381994645532838598430 4

1,1,-3,-2,1,1,6,-6,-7,7,-3,12,-2,-12,18,-2,9,-16,-21,20,1,12,-36,-22,14,1,36,-20,-6,30,6,32,-23,-24,48,-6,7,-36,-60,24,-7,42,-36,-42,12,7,66,-46,-18,43,-3,32,-12,-52,60,12,42,-40,-90,60,-2,62,-96,-42,41,-12,72,-66,-16,44,18,72,-49,-72,108,-2,20

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*A113261 Expansion of (9*phi(q)*phi(q^3)^5 - phi(q)^5*phi(q^3))/8 in powers of q where phi(q) is a Ramanujan theta function.*

$$\frac{3^{3/4}\, \Gamma\left(\frac{2}{3}\right)^3 \Gamma\left(\frac{7}{12}\right)^3 \left(1+\sqrt{3}\right)^3}{64\, \Gamma\left(\frac{3}{4}\right)^9}$$

1.033992128915112930757783452149 2

1,1,-5,1,11,-24,-5,50,-53,1,120,-120,11,170,-250,-24,203,-288,-5,362,-264,50,600,-528,-53,601,-850,1,550,-840,120,962,-821,-120,1440,-1200,11,1370,-1810,170,1272,-1680,-250,1850,-1320,-24,2640,-2208,203,2451,-3005,-288,1870,-2808

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*A113277 Expansion of q^(-1/3) * eta(q^2)^5 / eta(q)^2 in powers of q.*

$$\frac{e^{\frac{\pi}{3}}\, \pi^{3/4}\, 2^{1/4}}{4\, \Gamma\left(\frac{3}{4}\right)^3}$$

1.086427233659826559976979957519 2

1,2,0,0,0,-4,0,0,-5,0,0,0,0,0,0,0,7,0,0,0,0,8,0,0,0,0,0,0,0,0,0,0,0,-10,0,0,0,0,0,0,0,-11,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,13,0,0,0,0,0,0,0,0,14,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,-16,0,0,0,0,0,0,0,0,0,0,-17,0,0,0,0

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*A113298 Expansion of q^(1/12) * eta(q^10)^5 / (eta(q^2) * eta(q^5)^2 * eta(q^20)^2) in powers of q.*

$$\frac{16\, e^{-\frac{\pi}{12}}\, 2^{1/10}\, 5^{1/4}\, \Gamma\left(\frac{9}{10}\right)^3 \Gamma\left(\frac{7}{10}\right)^3 \left(5+\sqrt{5}\right)^3 \left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^3 \left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)^3}{125\, \Gamma\left(\frac{4}{5}\right)^6}$$

1.001874738983040913931578196775 2

1,0,1,0,2,2,3,2,5,4,7,6,11,10,15,14,22,22,30,30,44,44,58,60,81,84,107,112,145,154,190,202,253,270,327,352,429,462,550,594,711,770,904,980,1156,1256,1457,1586,1845,2008,2310,2516,2898,3160,3604,3930,4488,4894

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*A113407 Expansion of psi(x) * phi(x^2) in powers of x where psi(), phi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{8}}\ 2^{7/8}\ \Gamma\left(\frac{5}{8}\right)^2\ \left(2+\sqrt{2}\right)^{3/2}}{16\ \sqrt{\pi}\ \Gamma\left(\frac{7}{8}\right)^2}$$

1.047191210245488438025721426 2836

1,1,2,3,0,2,1,0,4,2,1,2,2,0,2,1,0,2,4,2,0,3,0,4,2,0,0,0,3,2,2,0,2,4,0,2,3,0,4,2,0,0,2,0,2,1,2,4,0,0,2,2,0,6,2,1,2,2,0,0,4,0,0,4,0,2,1,0,4,0,0,2,2,4,2,2,0,2,5,0,2,0,2,0,2,0,4,4,0,0,0,1,0,4,0,2,2,0,4,4,2,2,0,0,2

A113411 Excess of number of divisors of 2n+1 of form 8k+1, 8k+3 over those of form 8k+5, 8k+7.

$$\frac{e^{\frac{\pi}{2}}\ \sqrt{2}\ \Gamma\left(\frac{5}{8}\right)^2\ \left(2+\sqrt{2}\right)\ \sqrt{2-\sqrt{2}}}{16\ \sqrt{\pi}\ \Gamma\left(\frac{7}{8}\right)^2}$$

1.086438599983442464745426724 0411

1,2,0,0,3,2,0,0,2,2,0,0,1,4,0,0,4,0,0,0,2,2,0,0,1,4,0,0,4,2,0,0,0,2,0,0,2,2,0,0,5,2,0,0,2,0,0,0,2,6,0,0,0,2,0,0,2,0,0,0,3,4,0,0,4,2,0,0,2,2,0,0,0,2,0,0,6,0,0,0,0,2,0,0,1,6,0,0,4,2,0,0,0,4,0,0,2,0,0,0,4,0,0,0,4

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*A113416 Expansion of eta(q^2)^7*eta(q^4)/(eta(q)*eta(q^8)^2) in powers of q.*

$$\frac{2^{3/4}\ \Gamma\left(\frac{5}{8}\right)^4\ \left(3+2\sqrt{2}\right)\ \sqrt{2+\sqrt{2}}}{16\ \pi\ \Gamma\left(\frac{7}{8}\right)^4}$$

1.082362003230989399501801702 6332

1,2,-2,-4,-2,-8,4,16,-2,14,8,-20,4,-24,-16,16,-2,36,-14,-36,8,-32,20,48,4,42,24,-40,-16,-56,-16,64,-2,40,-36,-64,-14,-72,36,48,8,84,32,-84,20,-56,-48,96,4,114,-42,-72,24,-104,40,80,-16,72,56,-116,-16,-120,-64,112,-2,96,-40,-132,-36,-96,64,144,-14

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*A113417 Expansion of phi(x) * phi(-x)^2 * psi(x^4) in powers of x where phi(), psi() are*

Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{2}} \sqrt{2}\ \Gamma\left(\frac{5}{8}\right)^4 \left(3+2\sqrt{2}\right) \sqrt{2-\sqrt{2}}}{32\,\pi\,\Gamma\left(\frac{7}{8}\right)^4}$$

0.90677081737698236544570411023784

1,-2,-4,8,7,-10,-12,8,18,-18,-16,24,21,-20,-28,32,20,-32,-36,24,42,-42,-28,48,57,-36,-52,40,36,-58,-60,56,48,-66,-48,72,74,-42,-80,80,61,-82,-72,56,90,-96,-64,72,98,-70,-100,104,64,-106,-108,72,114,-96

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*A113419 Expansion of phi(x)^2 * phi(-x) * psi(x^4) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\ 2^{3/4}\ \Gamma\left(\frac{5}{8}\right)^4 \left(3+2\sqrt{2}\right) \sqrt{2-\sqrt{2}}}{32\,\pi\,\Gamma\left(\frac{7}{8}\right)^4}$$

1.07833830770154045010912622474 98

1,2,-4,-8,7,10,-12,-8,18,18,-16,-24,21,20,-28,-32,20,32,-36,-24,42,42,-28,-48,57,36,-52,-40,36,58,-60,-56,48,66,-48,-72,74,42,-80,-80,61,82,-72,-56,90,96,-64,-72,98,70,-100,-104,64,106,-108,-72,114,96

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*A113447 Expansion of i * theta_2(i * q^3)^3 / (4 * theta_2(i * q)) in powers of q^2.*

$$\frac{e^{\pi}\,\pi^2 \sqrt{3}\ \Gamma\left(\frac{11}{12}\right)^3 \sqrt{2}\ \left(\sqrt{3}-1\right)^3}{36\,\Gamma\left(\frac{2}{3}\right)^3 \Gamma\left(\frac{3}{4}\right)^5}$$

1.04500082549804925466721973162 60

1,1,1,-1,0,1,2,1,1,0,0,-1,2,2,0,-1,0,1,2,0,2,0,0,1,1,2,1,-2,0,0,2,1,0,0,0,-1,2,2,2,0,0,2,2,0,0,0,0,-1,3,1,0,-2,0,1,0,2,2,0,0,0,2,2,2,-1,0,0,2,0,0,0,0,1,2,2,1,-2,0,2,2,0,1,0,0,-2,0,2,0,0,0,0,4,0,2,0,0,1,2,3,0,-1,0,0,2,2,0

A113660 Expansion of phi(x)^3 / phi(x^3) where phi() is a Ramanujan theta function.

$$\frac{2\,\pi \sqrt{3}\ \Gamma\left(\frac{3}{4}\right)^3 \sqrt{2}\ \left(\sqrt{3}-1\right)}{3\,\Gamma\left(\frac{2}{3}\right) \Gamma\left(\frac{11}{12}\right)^2 \Gamma\left(\frac{7}{12}\right)^3}$$

1.28215617708957346102622312303 92

1,6,12,6,-6,0,12,12,12,6,0,0,-6,12,24,0,-6,0,12,12,0,12,0,0,12,6,24,6,-12,0,0,12,12,0,0,0,-6,12,24,12,0,0,24,12,0,0,0,0,-6,18,12,0,-12,0,12,0,24,12,0,0,0,12,24,12,-6,0,0,12,0,0,0,0,12,12

A113973 Expansion of phi(x^3)^3/phi(x) where phi() is a Ramanujan theta function.

$$\frac{3^{1/4}\,\Gamma\left(\frac{2}{3}\right)^3\,\Gamma\left(\frac{3}{4}\right)\,\left(1+\sqrt{3}\right)^3}{24\,\pi\,\Gamma\left(\frac{11}{12}\right)^3}$$

0.92088753502039563375506694374634

1,-2,4,-2,2,0,4,-4,4,-2,0,0,2,-4,8,0,2,0,4,-4,0,-4,0,0,4,-2,8,-2,4,0,0,-4,4,0,0,0,2,-4,8,-4,0,0,8,-4,0,0,0,0,2,-6,4,0,4,0,4,0,8,-4,0,0,0,-4,8,-4,2,0,0,-4,0,0,0,0,4,-4,8,-2,4,0,8,-4,0,-2,0,0,4,0,8,0,0,0,0,-8,0,-4,0,0,4,-4,12,0,2,0,0,-4,8

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*A114855 Expansion of q^(-1/3) * (eta(q) * eta(q^4))^2 / eta(q^2) in powers of q.*

$$\frac{e^{\frac{\pi}{3}}\,\pi^{3/4}}{4\,\Gamma\left(\frac{3}{4}\right)^3}$$

0.91357276621855787293099760696898

1,-2,0,0,0,4,0,0,-5,0,0,0,0,0,0,0,7,0,0,0,0,-8,0,0,0,0,0,0,0,0,0,0,0,0,10,0,0,0,0,0,0,-11,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,13,0,0,0,0,0,0,0,0,-14,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,16,0,0,0,0,0,0,0,0,0,0,-17,0,0,0,0

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*A115110 Expansion of q^(-1/24) * eta(q)^3 / eta(q^2) in powers of q.*

$$\frac{e^{\frac{\pi}{24}}\,\sqrt{\pi}\;2^{3/8}}{2\,\Gamma\left(\frac{3}{4}\right)^2}$$

0.87239388516602122452490081894215

1,-3,1,2,2,-1,-4,1,-2,0,2,4,-1,2,-2,-1,0,-2,-2,-2,0,4,1,0,2,-2,5,0,-2,0,0,-4,-2,0,0,-3,4,0,0,-2,1,4,2,2,0,0,0,-2,-2,0,2,-3,-2,0,-2,2,-4,1,0,0,0,4,2,0,4,0,-4,2,0,2,-1,0,0,2,-2,-2,-6,-1,2,0,0,-4,0,2,2,0,0,2,-2,2,2,0,1,0,0,2,4,0,0,-2,1,-6,0,-2,0

A115607 Sum of odd divisors of n times (-1)^(n+1).

$$\frac{e^{\pi}}{24}$$

0.964195526365802875238711931997 88

1,-1,4,-1,6,-4,8,-1,13,-6,12,-4,14,-8,24,-1,18,-13,20,-6,32,-12,24,-4,31,-14,40,-8,30,-24,32,-1,48,-18,48,-13,38,-20,56,-6,42,-32,44,-12,78,-24,48,-4,57,-31,72,-14,54,-40,72,-8,80,-30,60,-24,62,-32,104,-1,84,-48,68,-18,96,-48,72,-13,74,-38,124

A115977 Expansion of elliptic modular function lambda in powers of the nome q.

$$\frac{e^{\pi}}{2}$$

11.570346316389634502864543183974

16,-128,704,-3072,11488,-38400,117632,-335872,904784,-2320128,5702208,-13504512,30952544,-68901888,149403264,-316342272,655445792,-1331327616,2655115712,-5206288384,10049485312,-19115905536,35867019904,-66437873664

A116498 Expansion of psi(-q)/psi(-q^2) in powers of q where psi() is a Ramanujan theta function.

$$\frac{e^{-\frac{\pi}{8}}\, 2^{5/16}}{\left(2-\sqrt{2}\right)^{1/4}}$$

0.958495330110800335735719281334 27

1,-1,1,-2,1,-2,3,-3,4,-5,6,-7,8,-9,11,-13,16,-18,21,-24,27,-32,36,-41,48,-54,61,-70,78,-88,100,-112,127,-143,159,-179,199,-222,248,-276,308,-342,380,-421,465,-516,570,-629,697,-767,845,-932,1022,-1124,1236,-1355,1488,-1631,1785,-1954,2136

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*A116597 Expansion of theta_3(q) * theta_4(q^4)^2 in powers of q.*

$$\frac{2^{5/8}\,\Gamma\left(\frac{5}{8}\right)^3\left(2+\sqrt{2}\right)^2}{16\,\pi^{3/4}\,\Gamma\left(\frac{7}{8}\right)^3}$$

1.086419656185621352475476016293 0

1,2,0,0,-2,-8,0,0,-4,10,0,0,8,-8,0,0,6,16,0,0,-8,-16,0,0,-8,10,0,0,0,-24,0,0,12,16,0,0,-10,-8,0,0,-8,32,0,0,24,-24,0,0,8,18,0,0,-8,-24,0,0,-16,16,0,0,0,-24,0,0,6,32,0,0,-16,-32,0,0,-12,16,0,0,24,-32,0,0,24,34,0,0,-16,-16,0,0,-8,48

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*A117410 Expansion of q^(-5/24) * eta(q^2)^3 / eta(q) in powers of q.*

$$\frac{e^{\frac{5\pi}{24}}\sqrt{\pi}\ 2^{7/8}}{4\,\Gamma\left(\frac{3}{4}\right)^2}$$

1.041342693005100359444201186402 3

1,1,-1,0,-1,-2,1,-1,-1,0,1,1,-1,1,0,2,1,0,0,-1,2,1,0,-1,0,-1,0,-1,1,1,-3,0,-1,-1,-1,1,0,0,0,-1,-2,0,1,0,1,0,1,0,0,-1,2,-1,0,1,1,3,0,-1,0,1,-1,0,1,0,0,2,0,1,-1,0,-2,-1,1,0,0,-1,0,0,1,-1,0,-1,-1,-1,0,-2,-1,0,2,1,-2,0,1,-1,0,-2,-1,1,-1,1,0,0,0,1,0

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*A120030 Expansion of theta_4(q)^2*theta_4(q^2)^4 in powers of q.*

$$\frac{\pi^{3/2}}{2\,\Gamma\left(\frac{3}{4}\right)^6}$$

0.822227580458385515534722821457 05

1,-4,-4,32,-4,-104,32,192,-4,-292,-104,480,32,-680,192,832,-4,-1160,-292,1440,-104,-1536,480,2112,32,-2604,-680,2624,192,-3368,832,3840,-4,-3840,-1160,4992,-292,-5480,1440,5440,-104,-6728,-1536,7392,480,-7592,2112,8832,32,-9412,-2604

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*A121361 Expansion of f(x^1, x^5) * psi(x^2) in powers of x where psi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{7\pi}{12}}\ \pi\ 2^{1/4}\sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\left(\sqrt{3}-1\right)}{12\,\Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)^3}$$

1.045162218302229203247046482519 2

1,1,1,1,0,1,1,2,1,0,1,1,1,1,1,0,1,1,1,0,2,2,1,1,0,1,0,1,2,0,1,1,0,2,0,2,1,0,1,1,1,1,2,1,0,1,2,1,0,0,1,1,1,1,0,0,2,1,2,0,1,1,1,2,1,1,0,1,1,0,1,1,2,1,0,1,1,3,0,0,1,0,1,0,0,2,1,1,1,1,1,2,0,1,0,2,2,1,3,0,0,0,1,0,0

A121373 Expansion of f(x) = f(x, -x^2) in powers of x where f(,) is Ramanujan's general theta function.

$$\frac{e^{\frac{\pi}{24}}\ \pi^{1/4}\ 2^{3/4}}{2\,\Gamma\left(\frac{3}{4}\right)}$$

1.041346324548909833796881935700 4

1,1,-1,0,0,-1,0,-1,0,0,0,0,-1,0,0,1,0,0,0,0,0,0,1,0,0,0,1,0,0,0,0,0,0,0,0,1,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,0,0,0,-1,0,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,0,0,0,-1,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,

0,0,0,0,0,1,0,0,0,0,0,0,0,1,0,0,0,0

A121455 Expansion of q(phi(-q)psi(q^4))^2 in powers of q where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\pi}\sqrt{2}\,\Gamma\left(\frac{5}{8}\right)^4\left(2+\sqrt{2}\right)}{128\,\pi\,\Gamma\left(\frac{7}{8}\right)^4}$$

0.834632662943296816612696960617 89

1,-4,4,0,6,-16,8,0,13,-24,12,0,14,-32,24,0,18,-52,20,0,32,-48,24,0,31,-56,40,0,30,-96,32,0,48,-72,48,0,38,-80,56,0,42,-128,44,0,78,-96,48,0,57,-124,72,0,54,-160,72,0,80,-120,60,0,62,-128,104,0,84,-192,68,0,96,-192,72,0,74,-152

A121456 Expansion of q(psi(-q)*psi(-q^3))^2 in powers of q where psi() is a Ramanujan theta function.*

$$-\frac{e^{\pi}\pi^2\,\Gamma\left(\frac{11}{12}\right)^2\left(-2+\sqrt{3}\right)}{12\,\Gamma\left(\frac{2}{3}\right)^2\Gamma\left(\frac{3}{4}\right)^6}$$

0.915137480638570915238776770078 41

1,-2,1,-4,6,-2,8,-8,1,-12,12,-4,14,-16,6,-16,18,-2,20,-24,8,-24,24,-8,31,-28,1,-32,30,-12,32,-32,12,-36,48,-4,38,-40,14,-48,42,-16,44,-48,6,-48,48,-16,57,-62,18,-56,54,-2,72,-64,20,-60,60,-24,62,-64,8,-64,84,-24,68,-72,24,-96,72,-8,74,-76,31,-80

A121613 Expansion of psi(-x)^4 in powers of x where psi() is a Ramanujan theta function.

$$\frac{e^{\frac{\pi}{2}}\,\pi}{8\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.837746998853123845128608602898 31

1,-4,6,-8,13,-12,14,-24,18,-20,32,-24,31,-40,30,-32,48,-48,38,-56,42,-44,78,-48,57,-72,54,-72,80,-60,62,-104,84,-68,96,-72,74,-124,96,-80,121,-84,108,-120,90,-112,128,-120,98,-156,102,-104,192,-108,110

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*A122854 Expansion of phi(q)^2*psi(q)^4 in powers of q where phi(),psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\ \pi^{3/2}\ \sqrt{2}}{8\ \Gamma\left(\frac{3}{4}\right)^6}$$

1.398412263549432333331218857468 25

1,8,26,48,73,120,170,208,290,360,384,528,651,656,842,960,960,1248,1370,1360,1682, 1848,1898,2208,2353,2320,2810,3120,2880,3480,3722,3504,4420,4488,4224,5040, 5330,5208,5760,6240,5905,6888,7540,6736,7922,8160,7680

A122856 Expansion of f(x, x^5)^2 in powers of x where f(,) is Ramanujan's general theta function.

$$-\frac{e^{\frac{2\pi}{3}}\ \pi^{3/2}\ \Gamma\left(\frac{11}{12}\right)^2\ \left(-2+\sqrt{3}\right)}{3\ \Gamma\left(\frac{2}{3}\right)^2\ \Gamma\left(\frac{3}{4}\right)^4}$$

1.088295593712928763666684145565 3

1,2,1,0,0,2,2,0,2,2,1,0,0,2,0,0,3,2,0,0,0,4,2,0,2,0,2,0,0,2,0,0,1,2,2,0,0,2,2,0,2,4,1,0,0,2, 0,0,2,2,0,0,0,0,2,0,4,2,0,0,0,4,0,0,2,2,3,0,0,0,2,0,2,4,0,0,0,2,0,0,1,2,0,0,0,2,4,0,0,2,2, 0,0,2,0,0,4,2,2,0,0,4,0,0,2

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*A122865 Expansion of chi(x) * phi(x^3) * psi(-x^3) in powers of x where chi(), phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{3}}\ \sqrt{\pi}\ \Gamma\left(\frac{11}{12}\right)^3\ \Gamma\left(\frac{7}{12}\right)^3}{4\ \Gamma\left(\frac{3}{4}\right)^8}$$

1.043382442721839537450806987268 4

1,1,0,2,2,1,0,0,3,0,0,2,2,2,0,0,1,2,0,2,2,1,0,0,2,0,0,2,4,0,0,0,2,3,0,2,2,0,0,0,1,0,0,4,0,2, 0,0,4,2,0,0,2,2,0,0,3,0,0,2,2,0,0,0,2,1,0,2,4,2,0,0,0,0,0,2,2,2,0,0,2,2,0,4,0,1,0

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*A123759 Expansion of f(-q)*psi(-q^5) in powers of q where f(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{2\pi}{3}}\ \sqrt{\pi}\ 2^{11/40}\ 5^{3/4}\ \Gamma\left(\frac{4}{5}\right)^6\ \left(5-\sqrt{5}\right)^3\ \left(\sqrt{5}+1\right)^3\ \left(\sqrt{5}-1\right)^3}{51200\ \Gamma\left(\frac{3}{4}\right)^2\ \Gamma\left(\frac{9}{10}\right)^3\ \Gamma\left(\frac{7}{10}\right)^3}$$

0.954918646079762793147771930413 54

1,-1,-1,0,0,0,1,2,0,0,-1,0,-2,0,0,-2,1,2,0,0,0,0,0,0,0,0,1,0,0,0,2,-2,-1,0,0,0,0,0,0,0,0,-1,-1,0,0,0,0,0,0,0,0,2,0,0,0,0,2,0,2,0,0,0,0,-2,0,0,-2,-1,0,0,0,-2,0,0,0,0,0,2,0,0,0,-1,1,0,0,0,0,0,2,0,0,0,0,2,0,0,0,0,-2,0,0,0,0,0,0,0

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*A124340 Number of solutions to n = x^2 + 2*y^2 + 4*(T(z) + T(w)) + 1 where x and y are integers, z and w are nonnegative integers and T(x) = (x^2+x)/2.*

$$\frac{e^{\pi}\sqrt{2}\ \Gamma\left(\frac{5}{8}\right)^4\left(3+2\sqrt{2}\right)\sqrt{2-\sqrt{2}}}{128\,\pi\,\Gamma\left(\frac{7}{8}\right)^4}$$

1.090500126677859327831240216001 6

1,2,2,4,4,4,8,8,7,8,10,8,12,16,8,16,18,14,18,16,16,20,24,16,21,24,20,32,28,16,32,32,20,36,32,28,36,36,24,32,42,32,42,40,28,48,48,32,57,42,36,48,52,40,40,64,36,56,58,32,60,64,56,64,48,40,66

A124863 Expansion of 1 / chi(q)^12 in powers of q where chi() is a Ramanujan theta function.

$$\frac{e^{\frac{\pi}{2}}}{8}$$

0.601309672620668956934129458337 98

1,-12,78,-376,1509,-5316,16966,-50088,138738,-364284,913824,-2203368,5130999,-11585208,25444278,-54504160,114133296,-234091152,471062830,-931388232,1811754522,-3471186596,6556994502,-12222818640,22502406793

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*A124972 Expansion of Fricke's 32*tau_4(z) in powers of q = exp(2*Pi*i*z).*

$$16\ e^{-\pi}$$

0.691422692220355996390683794747 65

1,-8,20,0,-62,0,216,0,-641,0,1636,0,-3778,0,8248,0,-17277,0,34664,0,-66878,0,125312,0,-229252,0,409676,0,-716420,0,1230328,0,-2079227,0,3460416,0,-5677816,0,9198424,0,-14729608,0,23328520,0,-36567242,0,56774712,0

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*A125095 Expansion of phi(-x) * psi(x^4) in powers of x where psi(), phi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\ 2^{1/4}\ \Gamma\left(\frac{5}{8}\right)^2\ \left(2+\sqrt{2}\right)\ \sqrt{2-\sqrt{2}}}{16\ \sqrt{\pi}\ \Gamma\left(\frac{7}{8}\right)^2}$$

0.913582324119341100889368051223 69

1,-2,0,0,3,-2,0,0,2,-2,0,0,1,-4,0,0,4,0,0,0,2,-2,0,0,1,-4,0,0,4,-2,0,0,0,-2,0,0,2,-2,0,0,5,-2,0,0,2,0,0,0,2,-6,0,0,0,-2,0,0,2,0,0,0,3,-4,0,0,4,-2,0,0,2,-2,0,0,0,-2,0,0,6,0,0,0,0

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*A127786 Expansion of phi(q) * phi(q^2) * phi(-q^4) in powers of q where phi() is a Ramanujan theta function.*

$$\frac{2^{7/16}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(2+\sqrt{2}\right)^{3/2}\ \left(\sqrt{2}\ \sqrt{2+\sqrt{2}}\right)^{3/2}}{32\ \Gamma\left(\frac{7}{8}\right)^3\ \pi^{3/4}}$$

1.090484914981569166867593428 6986

1,2,2,4,0,-4,0,-8,-2,6,-8,4,0,-12,0,-8,-4,8,10,12,0,-8,0,-8,8,14,-8,16,0,-4,0,-16,6,16,16,8,0,-20,0,-8,-8,8,-16,20,0,-20,0,-16,-8,18,10,8,0,-12,0,-24,0,16,-24,12,0,-20,0,-24,12,8,16,28,0,-16,0,-8,-10,32,-8,20,0,-16,0,-16,-8,18,32,20,0,-24,0

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*A128111 Expansion of q^(-1) * (phi(q) / phi(q^9) - 1) / 2 in powers of q^3 where phi() is a Ramanujan theta function.*

$$\frac{3\ e^{\frac{\pi}{3}}\ \Gamma\left(\frac{2}{3}\right)^4\ \Gamma\left(\frac{7}{12}\right)^2\ \left(1+\sqrt{3}\right)}{16\ \pi^2\ \Gamma\left(\frac{11}{12}\right)^2}$$

1.043045722404457637850692927 2466

1,1,0,-2,-2,1,4,4,-1,-8,-8,2,14,14,-4,-24,-23,6,40,38,-10,-63,-60,16,98,92,-24,-150,-140,36,224,208,-54,-329,-304,78,478,440,-112,-684,-627,160,968,884,-224,-1358,-1236,312,1884,1710,-432,-2592,-2346,590,3540,3196,-801,-4796,-4320,1082,6454

---

*A128582 Expansion of f(x^4, x^12) * f(x, x^5) in powers of x where f(,) is Ramanujan's general theta function.*

$$\frac{e^{\frac{5\pi}{6}}\ 2^{3/4}\ \sqrt{3}\ \Gamma\left(\frac{5}{8}\right)^3\ \Gamma\left(\frac{11}{12}\right)\ \left(2+\sqrt{2}\right)\ \left(\sqrt{3}-1\right)}{96\ \sqrt{\pi}\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{7}{8}\right)^3}$$

1.043217707022270728665787177 3111

1,1,0,0,1,2,0,0,1,1,0,0,2,1,0,0,1,1,0,0,2,1,0,0,1,2,0,0,1,1,0,0,1,2,0,0,0,1,0,0,3,1,0,0,1,3,0,0,1,0,0,0,1,0,0,0,2,1,0,0,2,2,0,0,1,2,0,0,2,1,0,0,0,1,0,0,1,1,0,0,2,1,0,0,1,2,0

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*A128591 Expansion of f(x, x^5) * f(x, x^3) in powers of x where f(,) is Ramanujan's general theta function.*

$$\frac{e^{\frac{11\pi}{24}}\sqrt{\pi}\,2^{1/8}\,\Gamma\left(\frac{11}{12}\right)^{3/2}\Gamma\left(\frac{7}{12}\right)^{3/2}\left(\sqrt{3}-1\right)}{4\,\Gamma\left(\frac{3}{4}\right)^{5}\sqrt{\sqrt{2}\,\left(\sqrt{3}-1\right)}}$$

1.088379630152031976201543766916 6

1,2,1,1,1,1,2,1,2,1,1,3,0,0,1,2,2,1,1,1,1,2,3,1,1,0,2,1,1,2,0,2,0,2,1,0,4,2,0,1,1,2,1,2,2,1,2,0,1,1,2,0,1,1,1,2,2,2,0,1,1,3,1,1,0,1,4,1,2,1,0,4,0,0,1,1,2,1,2,1,1,0,1,1,1,2,3

A128692 Expansion of (theta_4(q) / theta_3(q))^4 in powers of q.

$$\frac{1}{2}$$

0.50000000000000000000000000000000

1,-16,128,-704,3072,-11488,38400,-117632,335872,-904784,2320128,-5702208,13504512,-30952544,68901888,-149403264,316342272,-655445792,1331327616,-2655115712,5206288384,-10049485312,19115905536,-35867019904,66437873664

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*A128711 Expansion of phi(x) * psi(x^4) * phi(-x^4)^4 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\,\Gamma\left(\frac{5}{8}\right)^{6}\,2^{3/4}\left(7\sqrt{2}+10\right)\sqrt{2+\sqrt{2}}}{256\,\pi^{3/2}\,\Gamma\left(\frac{7}{8}\right)^{6}}$$

1.086408290033770680464323566783 6

1,2,0,0,-5,-14,0,0,2,34,0,0,25,-28,0,0,-28,0,0,0,-46,-14,0,0,49,4,0,0,68,82,0,0,0,-62,0,0,-142,50,0,0,-11,-158,0,0,146,0,0,0,-94,70,0,0,0,178,0,0,98,0,0,0,75,-92,0,0,-28,-62,0,0,-238,-206,0

A128712 Expansion of q^(-1/8) eta(q)^5* eta(q^2)^3/ eta(q^4)^2 in powers of q.*

$$\frac{e^{\frac{\pi}{8}}\,\pi^{3/2}\,2^{3/8}}{4\,\Gamma\left(\frac{3}{4}\right)^{6}}$$

0.78957854238885347613434958594142

1,-5,2,25,-28,-46,49,68,0,-142,-11,146,-94,0,98,75,-28,-238,0,-10,0,169,164,0,98,-124,-476,0,-125,434,194,-316,386,0,0,-238,-285,392,0,-526,356,0,-478,0,194,795,230,0,0,-124,-766,-334,-412,50,578,-245,866,-238,0,196,0,644,0,0,-952,-1006

A128713 Expansion of q^(-3/8) eta(q)^7* eta(q^4)^2/ eta(q^2)^3 in powers of q.*

$$\frac{e^{\frac{3\pi}{8}}\ \pi^{3/2}\ 2^{1/8}}{8\ \Gamma\left(\frac{3}{4}\right)^6}$$

0.72811827463221590430129437717590

1,-7,17,-14,0,-7,2,41,-31,25,-79,0,35,89,0,-46,-31,-103,49,0,161,-85,17,-14,0,0,113,-142,-223,0,115,233,0,146,-175,41,-94,0,-271,0,34,-7,98,329,0,75,0,-343,35,0,0,-238,257,0,0,-439,322,-28,17,425,0,-391,401,169,0,-199,-205,-343,-511

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*A129449 Expansion of psi(-x) * psi(-x^3) in powers of x where psi() is a Ramanujan theta function.*

$$\frac{e^{\frac{\pi}{2}}\ \pi\sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\sqrt{2}\ \left(\sqrt{3}-1\right)}{12\ \Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)^3}$$

0.95662818306726198774046185250425

1,-1,0,-2,1,0,2,0,0,-2,2,0,1,-1,0,-2,0,0,2,-2,0,-2,0,0,3,0,0,0,2,0,2,-2,0,-2,0,0,2,-1,0,-2,1,0,0,0,0,-4,2,0,2,0,0,-2,0,0,2,-2,0,0,2,0,1,0,0,-2,2,0,4,0,0,-2,0,0,0,-3,0,-2,0,0,2,0,0,-2,0,0,3,-2,0,-2,0,0,2,-2,0,0,2,0,2,0,0,-2,2,0,0,0,0

A129451 Expansion of f(-x, -x^3) f(-x, x^2) in powers of x where f(,) is Ramanujan's general theta function.

$$\frac{e^{\frac{\pi}{6}}\ \Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{7}{12}\right)\sqrt{2}\ \left(1+\sqrt{3}\right)}{8\ \Gamma\left(\frac{3}{4}\right)^3}$$

0.91714884833813079095696445153821

1,-2,2,-2,1,-2,2,-2,3,0,2,-2,2,-2,0,-4,2,-2,2,0,1,-2,4,-2,0,-2,2,-2,3,-2,2,0,2,-2,0,-2,4,-2,2,0,2,-4,0,-4,0,-2,2,-2,1,0,4,-2,2,0,2,-2,2,-4,2,0,3,-2,2,-2,0,0,2,-4,2,0,2,-4,2,-2,0,0,2

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*A129576 Expansion of phi(x) * chi(x) * psi(-x^3) in powers of x where phi(), chi(), psi()*

are Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{3}}\ \pi\sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\sqrt{2}\ \left(\sqrt{3}-1\right)}{6\ \Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)^3}$$

1.133384080084812388940569387935 3

1,3,2,0,2,3,2,0,1,6,2,0,2,0,2,0,3,6,0,0,2,3,2,0,2,6,2,0,0,0,4,0,2,3,2,0,2,6,0,0,1,6,2,0,4,0, 2,0,0,6,2,0,2,0,2,0,3,6,2,0,2,0,0,0,2,9,2,0,0,6,2,0,4,0,2,0,2,0,0,0,2,6,4,0,0,3,4

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*A129588 Expansion of q^-1 * theta_2(q)^4 in powers of q^2.*

$$\frac{2\ e^{\frac{\pi}{2}}\ \pi\sqrt{2}}{\Gamma\left(\frac{3}{4}\right)^4}$$

18.956050681847127124272646865247

16,64,96,128,208,192,224,384,288,320,512,384,496,640,480,512,768,768,608,896,672, 704,1248,768,912,1152,864,1152,1280,960,992,1664,1344,1088,1536,1152,1184, 1984,1536,1280,1936,1344,1728,1920,1440

A131123 McKay-Thompson series of class 8A for the Monster group with a(0) = 8.

$$2\ e^{-\pi}\sqrt{2}\ \left(2+\sqrt{2}\right)^2$$

1.424787203723265290635891391786 7

1,8,36,128,386,1024,2488,5632,12031,24576,48308,91904,170110,307200,542872, 941056,1602819,2686976,4439688,7238272,11657090,18561024,29242240,45617664, 70507772,108036096,164192188,247620352,370726652

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*A131124 Expansion of q^(-1) * (phi(-q) / psi(q^4))^2 in powers of q where phi(), psi() are Ramanujan theta functions.*

$$4\ e^{-\pi}\sqrt{2}\ \left(2+\sqrt{2}\right)$$

0.834621020445450861025480295399 80

1,-4,4,0,2,0,-8,0,-1,0,20,0,-2,0,-40,0,3,0,72,0,2,0,-128,0,-4,0,220,0,-4,0,-360,0,5,0,576, 0,8,0,-904,0,-8,0,1384,0,-10,0,-2088,0,11,0,3108,0,12,0,-4552,0,-15,0,6592,0,-18,0, -9448,0,22,0,13392

A131125 McKay-Thompson series of class 8E for the Monster group with a(0) = 4.

$$8\ e^{-\pi}\left(2+\sqrt{2}\right)$$

1.180332366555628859220822192773 7

1,4,4,0,2,0,-8,0,-1,0,20,0,-2,0,-40,0,3,0,72,0,2,0,-128,0,-4,0,220,0,-4,0,-360,0,5,0,576,0,8,0,-904,0,-8,0,1384,0,-10,0,-2088,0,11,0,3108,0,12,0,-4552,0,-15,0,6592,0,-18,0,-9448,0,22,0,13392,0,26,0,-18816,0,-29,0,26216,0,-34,0

A131126 Expansion of (phi(q^2) / phi(-q))^2 in powers of q where phi() is a Ramanujan theta function.

$$\frac{\left(2+\sqrt{2}\right)\sqrt{2}}{4}$$

1.207106781186547524400844362104 8

1,4,16,48,128,312,704,1504,3072,6036,11488,21264,38400,67864,117632,200352,335872,554952,904784,1457136,2320128,3655296,5702208,8813472,13504512,20523996,30952544,46340832,68901888,101777112,149403264,218016640,316342272

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*A131999 Expansion of eta(q)^2 * eta(q^2) * eta(q^4)^3 / eta(q^8)^2 in powers of q.*

$$\frac{\Gamma\left(\frac{5}{8}\right)^4\left(3+2\sqrt{2}\right)\sqrt{2}\,\sqrt{2+\sqrt{2}}}{16\,\pi\,\Gamma\left(\frac{7}{8}\right)^4}$$

0.910154328523768383988071869524 88

1,-2,-2,4,-2,8,4,-16,-2,-14,8,20,4,24,-16,-16,-2,-36,-14,36,8,32,20,-48,4,-42,24,40,-16,56,-16,-64,-2,-40,-36,64,-14,72,36,-48,8,-84,32,84,20,56,-48,-96,4,-114,-42,72,24,104,40,-80,-16,-72,56,116,-16

A132002 Expansion of phi(q^3) / phi(q) in powers of q where phi() is a Ramanujan theta function.

$$\frac{3^{3/4}\,\Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)\left(1+\sqrt{3}\right)}{6\sqrt{\pi}\,\Gamma\left(\frac{11}{12}\right)}$$

0.920590346252050823715068071626 92

1,-2,4,-6,10,-16,24,-36,52,-74,104,-144,198,-268,360,-480,634,-832,1084,-1404,1808,-2316,2952,-3744,4728,-5946,7448,-9294,11556,-14320,17688,-21780,26740,-32736,39968,-48672,59122,-71644,86616,-104484,125768,-151072

A132107 Expansion of (f(x) / f(x^3))^6 in powers of x where f() is a Ramanujan theta

function.

$$-\frac{9\sqrt{\pi}\ 2^{1/3}\sqrt{3}\ \Gamma\left(\frac{11}{12}\right)^2\left(-2+\sqrt{3}\right)e^{-\frac{\pi}{2}}}{\Gamma\left(\frac{3}{4}\right)^2\Gamma\left(\frac{5}{6}\right)}$$

1.27456172478011303994117245038 37

1,6,9,-16,-66,-54,98,300,243,-364,-1128,-828,1221,3498,2511,-3528,-9876,-6804,9358, 25428,17217,-23068,-61644,-40824,53916,141318,92340,-119912,-310554,-199980, 256792,656436,418311,-530960,-1344144,-847584,1066157,2673372

A132136 Expansion of -lambda(t + 1) in powers of the nome q = exp(Pi i t).

$$e^{\pi}$$

23.140692632779269005729086367948

16,128,704,3072,11488,38400,117632,335872,904784,2320128,5702208,13504512, 30952544,68901888,149403264,316342272,655445792,1331327616,2655115712, 5206288384,10049485312,19115905536,35867019904,66437873664

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*A132965 Expansion of f(-q^8) * chi(q)^2 in powers of q where f(), chi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{4}}\ \Gamma\left(\frac{5}{8}\right)\ 2^{9/16}\left(2+\sqrt{2}\right)^{1/4}}{4\ \pi^{1/4}\ \Gamma\left(\frac{7}{8}\right)}$$

1.08847126482418481881018743115 53

1,2,1,2,4,4,5,6,8,10,12,14,17,22,24,30,36,40,48,56,65,76,88,100,116,134,152,174,200, 226,257,292,328,372,420,472,532,598,668,750,840,936,1045,1166,1296,1442,1604, 1776,1972,2186,2416,2672,2952,3256,3592,3960

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*A132966 Expansion of f(-x) * chi(x^2)^2 in powers of x where f(), chi() are Ramanujan theta functions.*

$$\frac{e^{-\frac{\pi}{8}}\ 2^{3/4}\ \Gamma\left(\frac{5}{8}\right)\ \left(2+\sqrt{2}\right)}{4\ \pi^{1/4}\ \Gamma\left(\frac{7}{8}\right)}$$

0.95848864490807448790122930889442

1,-1,1,-2,-1,0,1,1,2,-1,0,-1,0,1,-1,1,2,-2,1,-2,-3,0,0,1,2,0,1,-2,-2,2,0,2,3,-3,1,-3,-3,2,0,4,

4,-2,0,-3,-3,2,-2,3,5,-3,1,-6,-6,2,0,5,6,-3,1,-4,-6,4,-2,6,7,-5,3,-8,-9,5,-1,7,9,-5,2,-8

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*A132969 Expansion of phi(q) * chi(q) in powers of q where phi(), chi() are Ramanujan theta functions.*

$$\frac{e^{-\frac{\pi}{24}}\ \pi^{1/4}\ 2^{1/4}}{\Gamma\left(\frac{3}{4}\right)}$$

1.133475551015552775624492140546 9

1,3,2,1,5,5,3,5,6,10,10,8,13,15,15,16,23,27,25,30,35,40,42,45,55,66,68,70,86,95,100,110,125,141,150,161,185,207,215,235,266,293,310,335,375,410,438,470,521,575,610,653,725,785,835,900,983,1070,1140

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*A132970 Expansion of phi(-x) * chi(-x) in powers of x where phi(), chi() are Ramanujan theta functions.*

$$\frac{e^{-\frac{\pi}{24}}\ \pi^{1/4}\ 2^{7/8}}{2\ \Gamma\left(\frac{3}{4}\right)}$$

0.874029132555708091876284427566 30

1,-3,2,-1,5,-5,3,-5,6,-10,10,-8,13,-15,15,-16,23,-27,25,-30,35,-40,42,-45,55,-66,68,-70,86,-95,100,-110,125,-141,150,-161,185,-207,215,-235,266,-293,310,-335,375,-410,438,-470,521,-575,610,-653,725,-785,835,-900,983,-1070,1140,-1220,1331

A132972 Expansion of chi(q)^3 / chi(q^3) in powers of q where chi() is a Ramanujan theta function.

$$\frac{\pi^{1/3}\ 3^{2/3}\ \Gamma\left(\frac{3}{4}\right)^{4/3}\ \left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{1/3}\ \sqrt{2}\ \left(\sqrt{3}-1\right)}{3\ \Gamma\left(\frac{2}{3}\right)^{2/3}\ \Gamma\left(\frac{11}{12}\right)^{1/3}\ \Gamma\left(\frac{7}{12}\right)}$$

1.135508544551208656695670551121 3

1,3,3,3,6,9,12,15,21,30,36,45,60,78,96,117,150,189,228,276,342,420,504,603,732,885,1050,1245,1488,1773,2088,2454,2901,3420,3996,4662,5460,6378,7404,8583,9972,11565,13344,15378,17748,20448,23472,26910,30876

A132973 Expansion of psi(-q)^3 / psi(-q^3) in powers of q where psi() is a Ramanujan theta function.

$$\frac{\sqrt{3}\ \Gamma\left(\frac{2}{3}\right)\sqrt{2}\ \left(1+\sqrt{3}\right)}{8\,\Gamma\left(\frac{3}{4}\right)\Gamma\left(\frac{11}{12}\right)}$$

0.875728954761748405346172421334 82

1,-3,3,-3,3,0,3,-6,3,-3,0,0,3,-6,6,0,3,0,3,-6,0,-6,0,0,3,-3,6,-3,6,0,0,-6,3,0,0,0,3,-6,6,-6,0,0,6,-6,0,0,0,0,3,-9,3,0,6,0,3,0,6,-6,0,0,0,-6,6,-6,3,0,0,-6,0,0,0,0,3,-6,6,-3,6,0,6,-6

A132974 Expansion of psi(-q^3) / psi(-q)^3 in powers of q where psi() is a Ramanujan theta function.

$$\frac{2\sqrt{3}\ \Gamma\left(\frac{3}{4}\right)\Gamma\left(\frac{11}{12}\right)\sqrt{2}\ \left(\sqrt{3}-1\right)}{3\,\Gamma\left(\frac{2}{3}\right)}$$

1.141905831207854586959244513 4415

1,3,6,12,24,45,78,132,222,363,576,900,1392,2121,3180,4716,6936,10098,14550,20796,29520,41595,58176,80856,111750,153561,209820,285240,385968,519840,696960,930516,1237470,1639314,2163456,2845080,3728904,4871211

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*A132977 Expansion of q^(-1/3) * (eta(q^6)^4 / (eta(q) * eta(q^3) * eta(q^4) * eta (q^12)))^2 in powers of q.*

$$\frac{2\,e^{\frac{\pi}{3}}\sqrt{3}}{9}$$

1.096832300674505949594558483 1881

1,2,5,12,26,50,92,168,295,496,818,1332,2126,3324,5126,7824,11793,17548,25857,37788,54734,78578,111968,158496,222842,311224,432095,596676,819504,1119624,1522282,2060448,2776514,3725294,4978142,6626988,8789042

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*A132978 Expansion of q^(-2/3) * (psi(-q^3) / psi(-q)^3) * (c(q^2) / 3) in powers of q where psi() is a Ramanujan theta function and c() is a cubic AGM theta function.*

$$\frac{2\,e^{\frac{2\pi}{3}}\ \pi\,\Gamma\left(\frac{11}{12}\right)\left(\sqrt{3}-1\right)^2}{9\,\Gamma\left(\frac{2}{3}\right)^2\Gamma\left(\frac{7}{12}\right)}$$

1.144046239413583346637303523 4433

1,3,7,15,32,63,114,201,350,591,967,1554,2468,3855,5916,8970,13471,20007,29384,42771,61784,88530,125838,177642,249230,347484,481506,663549,909788,1241127,

1684824,2276781,3063657,4105275,5478698,7283709,9648360,12735471

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*A133079 Expansion of f(x)^3 - 3 * x * f(x^9)^3 in powers of x^3 where f() is a Ramanujan theta function.*

$$\frac{e^{\frac{\pi}{24}}\ \pi^{5/4}\ 2^{1/4}\ \sqrt{3}\ \left(\sqrt{3}-1\right)}{3\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{3}{4}\right)^2\ \Gamma\left(\frac{7}{12}\right)}$$

0.770859963619637484827483404156 73

1,-5,-7,0,0,11,0,-13,0,0,0,0,17,0,0,19,0,0,0,0,0,0,-23,0,0,0,25,0,0,0,0,0,0,0,0,-29,0,0,0,0,-31,0,0,0,0,0,0,0,0,0,0,35,0,0,0,0,0,-37,0,0,0,0,0,0,0,0,0,0,0,0,41,0,0,0,0,0,0,43,0,0,0,0,0,0,0,0,0,0,0,0,0,0,-47,0,0,0

A133089 Expansion of f(x)^3 in powers of x where f() is a Ramanujan theta function.

$$\frac{e^{\frac{\pi}{8}}\ \pi^{3/4}\ 2^{1/4}}{2\ \Gamma\left(\frac{3}{4}\right)^3}$$

1.129238211616784672901549731001 4

1,3,0,-5,0,0,-7,0,0,0,9,0,0,0,0,11,0,0,0,0,0,-13,0,0,0,0,0,0,-15,0,0,0,0,0,0,0,17,0,0,0,0,0,0,0,0,19,0,0,0,0,0,0,0,0,0,-21,0,0,0,0,0,0,0,0,0,0,-23,0,0,0,0,0,0,0,0,0,0,0,25,0,0,0,0,0,0,0,0,0,0,0,0,0,27,0,0,0,0,0,0,0

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*A133574 Expansion of (5 * phi(q^5)^2 - phi(q)^2) / 4 in powers of q where phi() is a Ramanujan theta function.*

$$\frac{\sqrt{\pi}\ \left(5+\sqrt{5}\right)\ \sqrt{5}}{20\ \Gamma\left(\frac{3}{4}\right)^2}$$

0.954915603754727193574387096189 50

1,-1,-1,0,-1,3,0,0,-1,-1,3,0,0,-2,0,0,-1,-2,-1,0,3,0,0,0,0,7,-2,0,0,-2,0,0,-1,0,-2,0,-1,-2,0,0,3,-2,0,0,0,3,0,0,0,-1,7,0,-2,-2,0,0,0,0,-2,0,0,-2,0,0,-1,6,0,0,-2,0,0,0,-1,-2,-2,0,0,0

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*A133637 Expansion of q^(-1) * psi(-q) / psi(-q^3)^3 in powers of q where psi() is a Ramanujan theta function.*

$$\frac{3\,e^{-\pi}\sqrt{3}\;\Gamma\left(\frac{2}{3}\right)^3\Gamma\left(\frac{3}{4}\right)^5\sqrt{2}\;\left(1+\sqrt{3}\right)^3}{4\,\pi^2\,\Gamma\left(\frac{11}{12}\right)^3}$$

0.956937043110370959674052531761 62

1,-1,0,2,-3,0,4,-6,0,10,-12,0,20,-24,0,36,-45,0,64,-78,0,112,-132,0,189,-222,0,308,-363,0,492,-576,0,778,-900,0,1210,-1392,0,1844,-2121,0,2776,-3180,0,4144,-4716,0,6114,-6936,0,8914,-10098,0,12884,-14550

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*A133657 Expansion of q * (phi(q) * psi(q^4))^2 in powers of q where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\pi}\,\Gamma\left(\frac{5}{8}\right)^4\left(2+\sqrt{2}\right)}{64\,\pi\,\Gamma\left(\frac{7}{8}\right)^4}$$

1.180348831533982509 1574156849132

1,4,4,0,6,16,8,0,13,24,12,0,14,32,24,0,18,52,20,0,32,48,24,0,31,56,40,0,30,96,32,0,48,72,48,0,38,80,56,0,42,128,44,0,78,96,48,0,57,124,72,0,54,160,72,0,80,120,60,0,62,128,104,0,84,192,68,0,96

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*A133690 Expansion of (phi(-q) * phi(q^2))^2 in powers of q where phi() is a Ramanujan theta function.*

$$-\frac{\sqrt{2}\;\Gamma\left(\frac{5}{8}\right)^4\left(3+2\sqrt{2}\right)}{16\,\pi\,\Gamma\left(\frac{7}{8}\right)^4\left(\sqrt{2}-2\right)}$$

0.840872955549663239 68223842301712

1,-4,8,-16,24,-24,32,-32,24,-52,48,-48,96,-56,64,-96,24,-72,104,-80,144,-128,96,-96,96,-124,112,-160,192,-120,192,-128,24,-192,144,-192,312,-152,160,-224,144,-168,256,-176,288,-312,192,-192,96,-228,248,-288

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*A133692 Expansion of phi(-q) * phi(q^2) in powers of q where phi() is a Ramanujan theta function.*

$$\frac{2^{1/4}\,\Gamma\left(\frac{5}{8}\right)^2\left(2+\sqrt{2}\right)^{3/2}}{8\sqrt{\pi}\;\Gamma\left(\frac{7}{8}\right)^2}$$

0.916991251621117288 22615110058665

1,-2,2,-4,2,0,4,0,2,-6,0,-4,4,0,0,0,2,-4,6,-4,0,0,4,0,4,-2,0,-8,0,0,0,0,2,-8,4,0,6,0,4,0,0,-4,0,-4,4,0,0,0,4,-2,2,-8,0,0,8,0,0,-8,0,-4,0,0,0,0,2,0,8,-4,4,0,0,0,6,-4,0,-4,4,0,0,0,0

A133985 Expansion of f(-x, x^2) in powers of x where f(,) is Ramanujan's general theta function.

$$\frac{e^{\frac{\pi}{24}}\ 2^{3/4}\ \Gamma\left(\frac{2}{3}\right)\ 3^{3/4}\ \left(1+\sqrt{3}\right)}{12\ \pi^{1/4}\ \Gamma\left(\frac{11}{12}\right)}$$

0.958653373484781396693085370459 91

1,-1,1,0,0,-1,0,-1,0,0,0,0,1,0,0,-1,0,0,0,0,0,0,1,0,0,0,1,0,0,0,0,0,0,0,0,-1,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,-1,0,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,-1,0,0,0,0,0,0

A133988 Expansion of phi(x) / chi(x^3) in powers of x where phi(), chi() are Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{8}}\ \pi^{1/4}\ 2^{1/12}}{\Gamma\left(\frac{3}{4}\right)\ \left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{1/3}}$$

1.086347143522340 90900 47079270786

1,2,0,-1,0,0,1,0,0,0,-2,0,0,0,0,-1,0,0,0,0,0,-1,0,0,0,0,0,0,-2,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0

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*A134079 Expansion of q^(-2/3) * c(-q)^2 / 9 in powers of q where c(q) is a cubic AGM theta function.*

$$\frac{e^{\frac{2\pi}{3}}\ \Gamma\left(\frac{2}{3}\right)^2\ \left(1+\sqrt{3}\right)^2}{72\ \Gamma\left(\frac{3}{4}\right)^2\ \Gamma\left(\frac{11}{12}\right)^2}$$

0.922613662677022164992456257660 99

1,-2,5,-4,8,-6,14,-8,14,-10,21,-16,20,-14,28,-16,31,-18,40,-20,32,-28,42,-24,38,-32,62,-28,44,-30,56,-40,57,-34,70,-36,72,-38,70,-48,62,-52,85,-44,68,-46,112,-56,74,-50,100,-64,80,-64,98,-56,108,-58,124

A134343 Expansion of psi(-x)^2 in powers of x where psi() is a Ramanujan theta function.

$$\frac{e^{\frac{\pi}{4}} \sqrt{\pi} \sqrt{2}}{4 \Gamma\left(\frac{3}{4}\right)^2}$$

0.91528520082711041566306161358222

1,-2,1,-2,2,0,3,-2,0,-2,2,-2,1,-2,0,-2,4,0,2,0,1,-4,2,0,2,-2,0,-2,2,-2,1,-4,0,0,2,0,4,-2,2,-2,0,0,3,-2,0,-2,4,0,2,-2,0,-4,0,0,0,-4,3,-2,2,0,2,-2,0,0,2,-2,4,-2,0,-2,2,0,3,-2,0,0,4,0,2

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*A134414 Expansion of eta(q)^2 / (eta(q^2) * eta(q^4)^6) in powers of q.*

$$\frac{32 e^{-\pi} \Gamma\left(\frac{3}{4}\right)^5}{\pi^{5/4}}$$

0.91359825423545076442453240767219

1,-2,0,0,8,-12,0,0,39,-56,0,0,152,-208,0,0,513,-684,0,0,1560,-2032,0,0,4382,-5616,0,0,11552,-14592,0,0,28899,-36088,0,0,69168,-85500,0,0,159372,-195312,0,0,355224,-431984,0,0,768885,-928720,0,0,1621296,-1946352,0,0,3339201

A134415 Expansion of phi(x) / f(-x)^6 in powers of x where phi(), f() are Ramanujan theta functions.

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

1.43286422088603952868133399616 89

1,8,39,152,513,1560,4382,11552,28899,69168,159372,355224,768885,1621296,3339201,6732232,13311450,25854744,49398043,92953016,172451760,315744072,570997539,1020691248,1804730732,3158323272,5473566645,9398873032,15998363307,27005721648

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*A134416 Expansion of eta(q^4)^2 / (eta(q^2) * eta(q)^6) in powers of q.*

$$\frac{2 \Gamma\left(\frac{3}{4}\right)^5}{\pi^{5/4}}$$

1.32133102444414356879571459950 81

1,6,28,104,342,1016,2808,7296,18044,42750,97656,215992,464360,973176,1993328,3998592,7870038,15221232,28968084,54311736,100421688,183281904,330468216,589084288,1038850488,1813500030,3135518440,5372110496,9124793472,15371832424

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*A134461 Expansion of (phi(x) * psi(-x))^4 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\ \pi^2}{8\ \Gamma\left(\frac{3}{4}\right)^8}$$

1.16715241088455436592140332796 44

1,4,-2,-24,-11,44,22,-8,50,-44,-96,56,-121,-152,198,160,176,48,-162,88,-198,-52,22, -528,233,200,-242,-88,-176,668,550,264,-44,-188,224,-728,154,-484,-1056,656,-311, -236,-100,792,714,-528,640,88,-478,-484,1566,968,192,780,-1994,-648,-942

A134746 Expansion of 1+k in powers of q^(1/2) where q is Jacobi's nome and k is the elliptic modulus.

$$4-2\sqrt{2}$$

1.17157287525380990239662255158 06

1,4,0,-16,0,56,0,-160,0,404,0,-944,0,2072,0,-4320,0,8648,0,-16720,0,31360,0,-57312,0, 102364,0,-179104,0,307672,0,-519808,0,864960,0,-1419456,0,2299832,0,-3682400,0, 5831784,0,-9141808,0,14194200,0,-21842368,0

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*A134747 Expansion of q * (chi(-q) / chi(-q^4))^8 in powers of q where chi() is a Ramanujan theta function.*

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

0.70185919510421768244045296725865

1,-8,28,-64,142,-352,792,-1536,2917,-5744,10868,-19200,33414,-58816,101256, -167936,275314,-452392,732748,-1160064,1819808,-2851104,4421064,-6752256, 10236407,-15476272,23215192,-34450944,50811638,-74701632,109138272, -158171136

A135211 Expansion of psi(-x) / psi(-x^3) in powers of x where psi() is a Ramanujan theta function.

$$\frac{e^{-\frac{\pi}{4}}\ \sqrt{3}\ \Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)\left(1+\sqrt{3}\right)}{2\sqrt{\pi}\ \Gamma\left(\frac{11}{12}\right)}$$

0.95678260062588529874984470100140

1,-1,0,0,-1,0,1,-1,0,2,-1,0,2,-2,0,2,-3,0,3,-3,0,4,-4,0,5,-6,0,6,-7,0,7,-8,0,10,-10,0,13,-13,0,14,-16,0,17,-18,0,22,-22,0,26,-28,0,30,-33,0,36,-38,0,44,-45,0,52,-55,0,60,-65,0,70,-74,0,84,-87,0,99,-104,0,112,-121,0,131,-138,0,156,-160

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*A135467 Expansion of q^(-3/4) * eta(q)^2 * eta(q^2)^4 * eta(q^8)^4 / eta(q^4)^6 in powers of q.*

$$\frac{e^{\frac{3\pi}{4}}\ 2^{3/4}\ \Gamma\left(\frac{5}{8}\right)^4\ \left(2+\sqrt{2}\right)}{64\ \pi\ \Gamma\left(\frac{7}{8}\right)^4}$$

0.90508378157349636850227076192986

1,-2,-5,10,13,-22,-30,40,60,-78,-101,132,170,-210,-273,342,409,-514,-625,748,917,-1102,-1300,1570,1863,-2186,-2589,3034,3540,-4148,-4838,5584,6489,-7500,-8621,9958,11417,-13046,-14960,17066,19417,-22122,-25119,28450,32253,-36478

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*A135763 Expansion of (theta_3(q) * theta_3(q^3))^3 in powers of q.*

$$\frac{\Gamma\left(\frac{2}{3}\right)^3\ \Gamma\left(\frac{7}{12}\right)^3\ \sqrt{2}\ \left(1+\sqrt{3}\right)^3}{32\ \Gamma\left(\frac{3}{4}\right)^9}$$

1.2829841325889715647567117532838

1,6,12,14,42,96,84,108,300,278,144,480,546,252,600,672,618,1152,732,828,2016,1276,720,2112,2100,1302,2040,2078,2100,3360,1872,1740,4908,3360,1728,4800,5082,2844,4344,4684,3600,6720,4200,3612,10080,5856,3168,8832

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*A135828 Expansion of psi(x^2)^8 * (psi(x)^8 + psi(-x)^8) / 2 in powers of x^2 where psi () is a Ramanujan theta function.*

$$\frac{3\ e^{\frac{3\pi}{2}}\ \pi^4\ \sqrt{2}}{512\ \Gamma\left(\frac{3}{4}\right)^{16}}$$

3.4752782744538807779790491501127

1,36,378,2200,8955,28836,78558,188568,410805,828080,1564686,2804976,4809370,7927380,12643560,19594632,29568204,43626708,63094550,89501040,124916931,171803652,232822908,311683680,412601490,539849556,699657642,898801400,1143680535

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*A136028 Expansion of (phi(q) * phi(q^2))^3 in powers of q where phi() is a Ramanujan theta function.*

$$-\frac{\Gamma\left(\frac{5}{8}\right)^6 \left(7\sqrt{2}+10\right)\sqrt{2}\,\sqrt{2+\sqrt{2}}}{64\,\pi^{3/2}\,\Gamma\left(\frac{7}{8}\right)^6\left(\sqrt{2}-2\right)}$$

1.296785285315198432930393179173 9

1,6,18,44,90,144,212,288,330,418,528,588,836,1008,1056,1440,1386,1356,1894,1644, 2064,2880,2484,3168,3428,2838,3696,3864,4128,5040,5280,5760,5418,5656,5988, 5376,7678,8208,7572,10080,8208,7788,10560,8652,10404,13104

A137828 Expansion of phi(x) / f(-x^4)^2 in powers of x where phi(), f() are Ramanujan theta functions.

$$\frac{2\,e^{-\frac{\pi}{3}}\,2^{3/4}\,\Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

1.086442388819640976375729090937 6

1,2,0,0,4,4,0,0,9,12,0,0,20,24,0,0,42,50,0,0,80,92,0,0,147,172,0,0,260,296,0,0,445,510, 0,0,744,840,0,0,1215,1372,0,0,1944,2176,0,0,3059,3424,0,0,4740,5268,0,0,7239, 8040,0,0,10920,12072,0,0,16286

A137829 Expansion of psi(q^2) / f(-q)^2 in powers of q where psi(), f() are Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{6}}\,\sqrt{2}\,\Gamma\left(\frac{3}{4}\right)}{2\,\pi^{1/4}}$$

1.098695608024277646327621842344 7

1,2,6,12,25,46,86,148,255,420,686,1088,1712,2634,4020,6036,8988,13214,19282,27840, 39923,56750,80160,112384,156660,216958,298894,409420,558119,756950,1022090, 1373760,1838932,2451366,3255480,4306920,5678104,7459634,9768386

A137830 Expansion of phi(-x) / f(-x^4)^2 in powers of x where phi(), f() are Ramanujan theta functions.

$$\frac{2\,e^{-\frac{\pi}{3}}\,\sqrt{2}\,\Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

0.91358551013811841283046984207784

1,-2,0,0,4,-4,0,0,9,-12,0,0,20,-24,0,0,42,-50,0,0,80,-92,0,0,147,-172,0,0,260,-296,0,0,445,-510,0,0,744,-840,0,0,1215,-1372,0,0,1944,-2176,0,0,3059,-3424,0,0,4740,-5268,0,0,7239,-8040,0,0,10920

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*A138483 Expansion of (phi(q)^3 * phi(q^5) - phi(q) * phi(q^5)^3) / 4 in powers of q where phi() is a Ramanujan theta function.*

$$\frac{e^{\pi}\,\pi^{4/3}\,2^{4/5}\,5^{11/12}\left(\sqrt{2}\,\sqrt{5}\,\sqrt{5-\sqrt{5}}\right)^{2/3}\Gamma\left(\frac{9}{10}\right)^{1/3}\left(\sqrt{5}-1\right)^{1/3}}{500\,\Gamma\left(\frac{3}{4}\right)^{4}\Gamma\left(\frac{3}{5}\right)^{2/3}\left(\sqrt{5}+1\right)^{1/3}\Gamma\left(\frac{7}{10}\right)^{1/3}}$$

1.13347572183219920976174099434 42

1,3,2,1,5,6,6,7,7,15,12,2,12,18,10,9,16,21,20,5,12,36,22,14,25,36,20,6,30,30,32,23,24,48,30,7,36,60,24,35,42,36,42,12,35,66,46,18,43,75,32,12,52,60,60,42,40,90,60,10,62,96,42,41,60,72,66,16,44

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*A138501 Expansion of (eta(q)^2 * eta(q^4)^4 / eta(q^2)^3)^2 in powers of q.*

$$\frac{e^{\pi}\,\pi^{3/2}\sqrt{2}}{64\,\Gamma\left(\frac{3}{4}\right)^{6}}$$

0.84087882038363779311126789643661

1,-4,8,-16,26,-32,48,-64,73,-104,120,-128,170,-192,208,-256,290,-292,360,-416,384,-480,528,-512,651,-680,656,-768,842,-832,960,-1024,960,-1160,1248,-1168,1370,-1440,1360,-1664,1682,-1536,1848,-1920,1898,-2112,2208,-2048,2353,-2604

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*A138502 Expansion of q^(-1/2) * (eta(q)^4 * eta(q^4)^2 / eta(q^2)^3)^2 in powers of q.*

$$\frac{e^{\frac{\pi}{2}}\,\pi^{3/2}\sqrt{2}}{16\,\Gamma\left(\frac{3}{4}\right)^{6}}$$

0.69920613177471616665609428734125

1,-8,26,-48,73,-120,170,-208,290,-360,384,-528,651,-656,842,-960,960,-1248,1370,-1360,1682,-1848,1898,-2208,2353,-2320,2810,-3120,2880,-3480,3722,-3504,4420,-4488,4224,-5040,5330,-5208,5760,-6240,5905,-6888,7540,-6736,7922,-8160,7680

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*A138504 Expansion of (eta(q^2)^9 / (eta(q)^2 * eta(q^4)^4))^2 in powers of q.*

$$\frac{\sqrt{2}\ \pi^{3/2}}{2\,\Gamma\left(\frac{3}{4}\right)^6}$$

1.162805395641464011950782481924 1

1,4,-4,-32,-4,104,32,-192,-4,292,-104,-480,32,680,192,-832,-4,1160,-292,-1440,-104,1536,480,-2112,32,2604,-680,-2624,192,3368,832,-3840,-4,3840,-1160,-4992,-292,5480,1440,-5440,-104,6728,-1536,-7392,480,7592,2112,-8832,32,9412,-2604,-9280

A138506 Expansion of f(q)^5 / f(q^5) in powers of q where f() is a Ramanujan theta function.

$$-\frac{\pi\,2^{4/5}\,5^{1/4}\,\Gamma\left(\frac{4}{5}\right)^2\left(-5+\sqrt{5}\right)}{8\,\Gamma\left(\frac{3}{4}\right)^4\Gamma\left(\frac{9}{10}\right)\Gamma\left(\frac{7}{10}\right)}$$

1.224548179930672690566749117052 3

1,5,5,-10,-15,5,-10,-30,25,35,5,60,30,-60,-30,-10,-55,-80,35,100,-15,60,60,-110,-50,5,-60,-100,90,150,-10,160,105,-120,-80,-30,-105,-180,100,120,25,210,60,-210,-180,35,-110,-230,110,215,5,160,180,-260,-100

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*A138512 Expansion of q * f(q^5)^5 / f(q) in powers of q where f() is a Ramanujan theta function.*

$$\frac{e^{\pi}\,\pi\,5^{1/4}\sqrt{2}\,\left(5-\sqrt{5}\right)^{5/2}\left(\sqrt{5}+1\right)^5}{320000\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.960296041705367665371620130297 53

1,-1,2,-3,5,-2,6,-5,7,-5,12,-6,12,-6,10,-11,16,-7,20,-15,12,-12,22,-10,25,-12,20,-18,30,-10,32,-21,24,-16,30,-21,36,-20,24,-25,42,-12,42,-36,35,-22,46,-22,43,-25,32,-36,52,-20,60,-30,40,-30,60,-30,62

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*A138514 Expansion of q^(-1/8) * eta(q^2)^4 / (eta(q) * eta(q^4)) in powers of q.*

$$\frac{e^{\frac{\pi}{8}}\sqrt{\pi}\ 2^{1/4}}{2\,\Gamma\left(\frac{3}{4}\right)^2}$$

1.039398038392818711861488182339 5

1,1,-2,-1,0,-2,1,0,0,2,1,2,-2,0,2,1,0,-2,0,-2,0,-1,0,0,-2,0,0,0,-1,2,-2,0,2,0,0,2,3,0,0,-2,0,0,2,0,2,1,-2,0,0,0,-2,-2,0,2,-2,1,-2,-2,0,0,0,0,0,0,0,-2,1,0,0,0,0,-2,2,0,2,2,0,2,1,0,-2,0,

2,0,-2,0,0,4,0,0,0,1,0,0,0,-2,-2,0,0,0,2,-2,0,0,-2

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*A138515 Expansion of q^(-1/4) * eta(q^2)^8 / (eta(q) * eta(q^4))^2 in powers of q.*

$$\frac{e^{\frac{\pi}{4}}\,\pi\sqrt{2}}{4\,\Gamma\left(\frac{3}{4}\right)^4}$$

1.080348282214839440951342829356 2

1,2,-3,-6,2,0,-1,10,0,2,10,-6,-7,-14,0,10,-12,0,-6,0,9,4,10,0,18,2,0,-6,-14,18,-11,-12,0,0,-22,0,20,-14,-6,-22,0,0,23,26,0,18,4,0,-14,2,0,20,0,0,0,-12,3,-30,26,0,-30,-14,0,0,2,-30,-28,26,0,18,10,0,-13,34,0,0,20,0,26,-22,0,6,0,-6,18,0

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*A138557 Expansion of eta(q)^2 * eta(q^4)^2 * eta(q^10)^7 / (eta(q^2)^3 * eta(q^5)^2 * eta(q^20)^2) in powers of q.*

$$\frac{e^{\pi}\,\pi\,5^{1/4}\sqrt{2}\,\sqrt{5-\sqrt{5}}\,\left(\sqrt{5}+1\right)}{400\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.917001121673659779274089914285 98

1,-2,2,-4,5,-4,6,-8,7,-10,12,-8,12,-12,10,-16,16,-14,20,-20,12,-24,22,-16,25,-24,20,-24,30,-20,32,-32,24,-32,30,-28,36,-40,24,-40,42,-24,42,-48,35,-44,46,-32,43,-50,32,-48,52,-40,60,-48,40,-60,60,-40

---

*A138558 Expansion of eta(q^2)^7 * eta(q^5)^2 * eta(q^20)^2 / (eta(q)^2 * eta(q^4)^2 * eta(q^10)^3) in powers of q.*

$$\frac{e^{\pi}\,5^{1/4}\,\pi\,\Gamma\left(\frac{4}{5}\right)^{34}\,2^{3/5}\left(5-\sqrt{5}\right)^{14}\left(5+\sqrt{5}\right)^{3}\left(\sqrt{5}+1\right)^{17}\left(\sqrt{5}-1\right)^{17}}{450359962737049600000\,\Gamma\left(\frac{3}{4}\right)^4\,\Gamma\left(\frac{7}{10}\right)^{17}\,\Gamma\left(\frac{9}{10}\right)^{17}}$$

1.082373000792697152438255400293 0

1,2,-2,-4,1,-4,-6,8,7,2,12,8,-12,-12,-2,-16,-16,14,20,-4,12,24,-22,-16,1,-24,-20,24,30,-4,32,32,-24,-32,-6,-28,-36,40,24,8,42,24,-42,-48,7,-44,-46,32,43,2,32,48,-52,-40,12,-48,-40,60,60,8,62,64,-42

---

*A138559 Expansion of phi(x) * chi(-x) in powers of x where phi(), chi() are Ramanujan theta functions.*

$$\frac{e^{-\frac{\pi}{24}}\ \pi^{1/4}\ 2^{1/8}}{\Gamma\left(\frac{3}{4}\right)}$$

1.039401663154904488305073848298 0

1,1,-2,-1,1,-1,-1,-1,2,2,-2,0,1,1,-1,0,3,1,-3,-2,3,0,-2,-1,3,2,-4,-2,2,1,-4,-2,5,3,-6,-1,5,1,-5,-3,6,3,-6,-3,7,2,-6,-2,9,5,-10,-5,9,3,-9,-4,11,6,-12,-4,11,5,-12,-5,14,6,-16,-7,15,5,-16,-7,19,9,-20,-8,19,7,-20,-10,24,11,-25,-11,24,9,-26,-11,29,13,-31,-13

---

*A139093 Expansion of phi(q) * phi(-q^2) in powers of q where phi() is a Ramanujan theta function.*

$$\frac{\sqrt{\pi}\ 2^{7/8}}{2\ \Gamma\left(\frac{3}{4}\right)^2}$$

1.082377101656383825638150927585 2

1,2,-2,-4,2,0,-4,0,2,6,0,-4,4,0,0,0,2,4,-6,-4,0,0,-4,0,4,2,0,-8,0,0,0,0,2,8,-4,0,6,0,-4,0,0,4,0,-4,4,0,0,0,4,2,-2,-8,0,0,-8,0,0,8,0,-4,0,0,0,0,2,0,-8,-4,4,0,0,0,6,4,0,-4,4,0,0,0,0,10,-4,-4,0,0,-4,0,4,4,0,0,0,0,0,0,4,4,-2,-12,2,0,-8,0

A139135 Expansion of psi(-q^3) / f(q) where psi(), f() are Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{3}}\ \sqrt{\pi}\ \sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\ \sqrt{2}\ \left(\sqrt{3}-1\right)}{6\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{3}{4}\right)}$$

0.960217822745040142275833878061 34

1,-1,2,-4,6,-9,14,-20,29,-42,58,-80,110,-148,198,-264,347,-454,592,-764,982,-1257,1598,-2024,2554,-3206,4010,-5000,6208,-7684,9484,-11664,14306,-17501,21346,-25972,31526,-38170,46112,-55588,66861,-80258,96154,-114968,137212

A139136 Expansion of psi(-q) / f(q^3) where psi(), f() are Ramanujan theta functions.

$$\frac{\pi^{1/6}\ 3^{7/12}\ \Gamma\left(\frac{11}{12}\right)^{4/3}\ \Gamma\left(\frac{7}{12}\right)\ 2^{1/3}}{2\ \Gamma\left(\frac{2}{3}\right)^{1/3}\ \Gamma\left(\frac{3}{4}\right)^{7/3}\ \left(1+\sqrt{3}\right)^{1/3}}$$

0.956628195527176168847305934250 70

1,-1,0,-2,1,0,4,-2,0,-6,4,0,10,-6,0,-16,9,0,24,-14,0,-36,20,0,52,-29,0,-74,42,0,104,-58,0,-144,80,0,198,-110,0,-268,148,0,360,-198,0,-480,264,0,634,-347,0,-832,454,0,1084,

-592,0,-1404,764,0,1808,-982

A139137 Expansion of phi(q) / phi(q^3) in powers of q where phi() is a Ramanujan theta function.

$$\frac{\Gamma\left(\frac{3}{4}\right)\sqrt{\pi}\,\sqrt{2}\,\left(\sqrt{3}-1\right)}{\Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{7}{12}\right)}$$

1.086259489979712866533040571229 7

1,2,0,-2,-2,0,4,4,0,-6,-8,0,10,12,0,-16,-18,0,24,28,0,-36,-40,0,52,58,0,-74,-84,0,104,116,0,-144,-160,0,198,220,0,-268,-296,0,360,396,0,-480,-528,0,634,694,0,-832,-908,0,1084,1184,0,-1404,-1528,0,1808,1964,0,-2316,-2514,0,2952,3196

A139631 Expansion of chi(x^5) / chi(-x^2) in powers of x where chi() is a Ramanujan theta function.

$$\frac{e^{-\frac{\pi}{8}}\,2^{7/8}\left(5+\sqrt{5}\right)\sqrt{5}}{20}$$

1.001871094106961786278927381478 3

1,0,1,0,1,1,2,1,2,1,3,2,4,2,5,4,6,5,8,6,11,8,13,10,16,14,20,17,24,21,31,26,37,32,44,41,54,49,64,59,79,72,94,86,111,106,132,126,156,149,187,178,219,210,257,251,302,295,352,346,416,406,483,474,560

A139820 Expansion of (phi(-q) / phi(q))^2 in powers of q where phi() is a Ramanujan theta function.

$$\frac{\sqrt{2}}{2}$$

0.707106781186547524400844362104 85

1,-8,32,-96,256,-624,1408,-3008,6144,-12072,22976,-42528,76800,-135728,235264,-400704,671744,-1109904,1809568,-2914272,4640256,-7310592,11404416,-17626944,27009024,-41047992,61905088,-92681664,137803776,-203554224

A143066 Expansion of phi(x^3) / psi(x) in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{e^{-\frac{\pi}{8}}\ 2^{1/8}\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{7}{12}\right)\ \left(1+\sqrt{3}\right)}{2\ \Gamma\left(\frac{3}{4}\right)\ \sqrt{\pi}}$$

0.958656716660613229519933730068 75

1,-1,1,0,1,-2,1,-1,2,-3,2,-1,4,-5,3,-3,6,-8,5,-4,9,-12,8,-7,14,-18,13,-10,20,-26,18,-16,29,-37,27,-23,41,-52,38,-34,58,-72,54,-47,79,-98,74,-67,109,-133,103,-92,146,-178,138,-127,196,-237,187,-170,260

A143067 Expansion of psi(-x^3) / f(-x^4) in powers of x where psi(), f() are Ramanujan theta functions.

$$\frac{e^{\frac{5\pi}{24}}\ \sqrt{\pi}\ 2^{1/8}\ \sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\ \left(\sqrt{3}-1\right)}{3\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{3}{4}\right)}$$

0.999922787567154786077623637175 06

1,0,0,-1,1,0,0,-1,2,-1,0,-2,3,-1,0,-3,5,-2,1,-5,7,-3,1,-7,11,-5,2,-11,15,-7,4,-15,22,-11,6,-22,30,-15,9,-30,42,-22,14,-42,56,-31,20,-56,77,-43,29,-77,101,-58,41,-101,135,-80,57,-135,176,-106,78

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*A143161 Expansion of chi(-x)^2 * chi(-x^2) in powers of x where chi() is a Ramanujan theta function.*

$$e^{-\frac{\pi}{6}}\ 2^{5/8}$$

0.913582324141562267377026305562 91

1,-2,0,0,3,-2,0,0,4,-6,0,0,7,-8,0,0,13,-14,0,0,19,-20,0,0,29,-34,0,0,43,-46,0,0,62,-70,0,0,90,-96,0,0,126,-138,0,0,174,-186,0,0,239,-262,0,0,325,-346,0,0,435,-472,0,0,580,-620,0,0,769,-826,0,0

---

*A143377 Expansion of q^(-1/6) * eta(q)^2 * eta(q^4) / eta(q^2) in powers of q.*

$$\frac{e^{\frac{\pi}{6}}\ \sqrt{\pi}\ 2^{7/8}}{4\ \Gamma\left(\frac{3}{4}\right)^2}$$

0.913575952181782036174170665714 52

1,-2,0,0,1,2,0,0,-3,0,0,0,-2,2,0,0,2,2,0,0,-1,-2,0,0,0,-2,0,0,1,-2,0,0,2,2,0,0,4,-2,0,0,-2,0,0,0,0,-2,0,0,-1,0,0,0,-2,0,0,0,2,4,0,0,-1,2,0,0,0,0,0,0,-2,0,0,0,-2,2,0,0,-2,-2,0,0,0,-2,0,

0,0,4,0,0,1,0,0,0,4,0,0,0,-2,0,0,0,2,-2,0,0,1

---

*A143378 Expansion of q^(-1/24) * eta(q^2)^5 / (eta(q) * eta(q^4)^2) in powers of q.*

$$\frac{e^{\frac{\pi}{24}} \sqrt{\pi}\ 2^{5/8}}{2\,\Gamma\left(\frac{3}{4}\right)^2}$$

1.037457015324299238411500300188 4

1,1,-3,-2,2,-1,0,1,2,4,-2,0,-1,-2,2,-1,0,-2,-2,-2,0,0,1,4,-2,2,1,0,-2,0,4,0,2,0,0,1,0,-4,0,-2,-3,0,2,2,-4,0,0,2,-2,0,-2,-3,2,0,2,2,2,0,1,4,0,0,0,2,0,0,-4,0,2,0,2,-1,0,0,2,-2,2,-2,-1,-2,-4,0,0,0,-2,-2,0,0,2,2,-2,2,0,1,0,0,-2,0,0,0,-2,5,2,-4,2,0

---

*A143379 Expansion of q^(-7/24) * eta(q) * eta(q^4)^2 / eta(q^2) in powers of q.*

$$\frac{e^{\frac{7\pi}{24}} \sqrt{\pi}\ 2^{3/8}}{4\,\Gamma\left(\frac{3}{4}\right)^2}$$

0.956702052360232730543894056997 00

1,-1,0,-1,-1,1,1,1,-1,1,0,1,0,0,-2,-1,0,0,-1,1,1,-2,0,0,0,1,1,0,2,0,1,-1,-1,0,1,-1,0,0,1,0,-1,-1,0,-1,-1,-1,0,0,0,1,0,1,0,1,-1,-1,2,0,-1,1,-1,1,0,3,1,-1,0,0,0,1,-2,0,0,-1,-1,0,-1,0,1,0,0,1,-1,-1,-1,0,0,0,0,-1,0,-2,0,1,2,1,-1,0,2,1,0,0,0,0,1

---

*A143380 Expansion of q^(-1/6) * eta(q^2)^5 / (eta(q)^2 * eta(q^4)) in powers of q.*

$$\frac{e^{\frac{\pi}{6}} \sqrt{\pi}\ 2^{1/8}}{2\,\Gamma\left(\frac{3}{4}\right)^2}$$

1.086431022429960871914901326605 2

1,2,0,0,1,-2,0,0,-3,0,0,0,-2,-2,0,0,2,-2,0,0,-1,2,0,0,0,2,0,0,1,2,0,0,2,-2,0,0,4,2,0,0,-2,0,0,0,0,2,0,0,-1,0,0,0,-2,0,0,0,2,-4,0,0,-1,-2,0,0,0,0,0,0,-2,0,0,0,-2,-2,0,0,-2,2,0,0,0

---

*A143894 Expansion of (chi(q)^5 * chi(-q))^2 in powers of q where chi() is a Ramanujan theta function.*

$$4\,e^{-\frac{\pi}{2}}\ 2^{3/4}$$

1.398441524462532345080242848201 7

1,8,26,48,79,168,326,496,755,1296,2106,3072,4460,6840,10284,14448,20165,29184,41640,56880,77352,107472,147902,197616,263019,354888,475516,624048,816065,

1076736,1413142,1826416,2353446,3050400,3936754,5022720

A143895 Expansion of (chi(q)^4 / chi(-q))^2 in powers of q where chi() is a Ramanujan theta function.

$$2\, e^{-\frac{\pi}{4}}\, 2^{3/4}$$

1.533586948863665312546284193677 3

1,10,47,150,403,1002,2316,5004,10309,20456,39240,73102,132779,235868,410785,702630,1182342,1960418,3206675,5179670,8270086,13062994,20427293,31644200,48589970,73994118,111802523,167685238,249745021,369499928

---

*A144558 Expansion of Product_{n >= 1} (1+q^(2*n-1))/((1-q^(4*n))*(1+q^(4*n-2))).*

$$\frac{2\, e^{-\frac{\pi}{8}}\, 2^{11/16}\, \pi^{1/4}\, \Gamma\left(\frac{7}{8}\right) \sqrt{2-\sqrt{2}}}{\Gamma\left(\frac{5}{8}\right) \sqrt{\sqrt{2}\, \sqrt{2+\sqrt{2}}}}$$

1.041357219243661057898288880583 6

1,1,-1,0,3,2,-3,-1,8,5,-8,-3,18,11,-19,-7,38,22,-41,-16,75,42,-82,-33,142,78,-157,-64,258,138,-288,-120,455,239,-511,-215,781,404,-882,-374,1310,668,-1486,-635,2153,1084,-2450,-1053,3477,1733,-3967,-1712,5524,2726,-6316,-2737,8652,4233,-9907

A145708 Expansion of psi(-q) / psi(-q^5) in powers of q where psi() is a Ramanujan theta function.

$$\frac{e^{-\frac{\pi}{2}}\, 2^{3/5}\, 5^{1/4}\, \Gamma\left(\frac{3}{5}\right)^2\, \Gamma\left(\frac{7}{10}\right)\, \left(5+\sqrt{5}\right)\, \left(\sqrt{5}+1\right)^2}{32\, \pi\, \Gamma\left(\frac{9}{10}\right)}$$

0.956705532908268848118690423140 62

1,-1,0,-1,0,1,0,0,-1,0,2,0,0,-1,0,2,-1,0,-2,0,3,-2,0,-3,0,5,-2,0,-3,0,6,-2,0,-4,0,8,-3,0,-6,0,11,-5,0,-8,0,14,-6,0,-10,0,18,-6,0,-12,0,22,-9,0,-16,0,28,-13,0,-21,0,36,-14,0,-25,0,44,-16,0

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*A145722 Expansion of f(q) * f(q^5) / phi(-q^2)^2 in powers of q where f(), phi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{4}}\ 2^{19/20}\ 5^{3/4}\ \Gamma\left(\frac{9}{10}\right)\ \Gamma\left(\frac{7}{10}\right)\ \left(5+\sqrt{5}\right)}{100\ \Gamma\left(\frac{4}{5}\right)^2}$$

1.049168897514176027211693941 6669

1,1,3,4,8,12,21,30,48,68,102,143,207,284,400,542,744,996,1344,1776,2361,3088,4050, 5248,6808,8742,11232,14310,18224,23052,29133,36601,45936,57360,71528,88812, 110110,135990,167704,206108,252912,309408

A145740 McKay-Thompson series of class 20C for the Monster group with a(0) = -2.

$$\frac{128\ e^{-\pi}\ 2^{1/5}\ \sqrt{5}\ \Gamma\left(\frac{9}{10}\right)^6\ \Gamma\left(\frac{7}{10}\right)^6\ \left(5+\sqrt{5}\right)^6\ \left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^6\ \left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)^6}{625\ \Gamma\left(\frac{4}{5}\right)^{12}}$$

0.915285476697294687901790140 29066

1,-2,1,-2,2,2,-1,0,-4,2,5,-2,0,-8,2,8,-3,2,-14,6,14,-6,4,-24,12,24,-11,4,-40,16,38,-16,5, -62,24,60,-24,10,-94,40,91,-38,18,-144,62,136,-57,24,-214,88,201,-82,30,-308,122, 288,-117,48,-440,180,410,-168

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*A147702 Expansion of eta(q) * eta(q^10)^3 / (eta(q^2) * eta(q^4) * eta(q^5) * eta (q^20)) in powers of q.*

$$\frac{\left(5+\sqrt{5}\right)\ \Gamma\left(\frac{7}{10}\right)\ \Gamma\left(\frac{9}{10}\right)\ 5^{3/4}\ 2^{19/20}}{50\ \Gamma\left(\frac{4}{5}\right)^2}$$

0.956712205685855602045820324 23780

1,-1,0,-1,2,-1,0,-2,4,-3,0,-3,8,-4,0,-6,14,-8,0,-10,22,-12,0,-16,36,-21,0,-25,56,-30,0,-38, 84,-48,0,-57,126,-68,0,-84,184,-102,0,-121,264,-143,0,-172,376,-207,0,-243,528, -284,0,-338,732,-400,0,-465,1008,-542,0,-636,1374,-744,0,-862,1856,-996,0

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*A153728 Expansion of q^(-1/3) * (eta(q)^8 + 8 * eta(q^4)^8) in powers of q^2.*

$$\frac{3\ e^{\frac{\pi}{6}}\ \pi^2\ \sqrt{2}}{8\ \Gamma\left(\frac{3}{4}\right)^8}$$

1.737687616097284466450721790 0274

1,20,-70,56,-125,308,110,-520,57,0,182,-880,1190,884,0,-1400,-1330,1820,-646,0,-1331,

380,1120,2576,0,1748,-3850,-3400,2703,-2500,3458,0,-1150,-5236,0,6032,6160,-3220,4466,0,-7378,-3920,0,2200,0,812,-4030,5600,-4913

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*A153729 Expansion of q^(-1/3) * (eta(q)^8 + 32 * eta(q^4)^8) in powers of q.*

$$\frac{3\, e^{\frac{\pi}{3}}\, \pi^2}{8\, \Gamma\left(\frac{3}{4}\right)^8}$$

2.074210207702219587566142386321 8

1,24,20,0,-70,-192,56,0,-125,480,308,0,110,0,-520,0,57,-1680,0,0,182,1536,-880,0,1190,1344,884,0,0,0,-1400,0,-1330,-3000,1820,0,-646,-3840,0,0,-1331,7392,380,0,1120,0,2576,0,0,2640,1748,0,-3850,0,-3400,0,2703,-12480,-2500,0

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*A159814 Expansion of eta(z)^2*eta(4*z)^6/eta(2*z).*

$$\frac{e^{\pi}\, \pi^{7/4}\, \sqrt{2}}{64\, \Gamma\left(\frac{3}{4}\right)^7}$$

0.913560022476766664925765076382 66

1,-2,0,0,-4,12,0,0,-3,-20,0,0,28,-8,0,0,-8,42,0,0,-72,-20,0,0,29,36,0,0,84,-72,0,0,24,-40,0,0,-68,36,0,0,-112,24,0,0,84,248,0,0,-39,-158,0,0,-12,-144,0,0,216,-116,0,0,-108,-16,0,0,80,144,0,0,48,152,0,0,-232,220

A159817 Coefficients of L-series for elliptic curve 80b2: y^2 = x^3 - x^2 - x.

$$\frac{e^{\frac{\pi}{2}}\, \pi\, \left(5+\sqrt{5}\right)\, \sqrt{5}}{100\, \Gamma\left(\frac{3}{4}\right)^4}$$

1.084402494494058847944118749841 0

1,2,-1,-2,1,0,2,-2,-6,4,-4,-6,1,-4,6,4,0,2,2,4,6,10,-1,6,-3,-12,-6,0,8,-12,2,-2,-2,-2,-12,12,2,2,0,-8,-11,-6,6,12,-6,-4,8,-4,2,0,6,-14,4,6,2,4,-6,6,2,12,-11,12,-1,-2,20,0,-8,4,18,4,12,0,-6,-6,-6,-20,-6,-4,-22,-12,12,10,0,-18,-9,4,-6,-2,-24

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*A159818 Expansion of f(q) * f(q^5) in powers of q where f() is a Ramanujan theta function.*

$$\frac{e^{\frac{\pi}{4}}\sqrt{\pi}\;2^{9/10}\,\Gamma\left(\frac{9}{10}\right)^2\Gamma\left(\frac{7}{10}\right)^2\left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^2\left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)^2\sqrt{5}\left(\sqrt{5}\,\sqrt{2}\,\sqrt{5+\sqrt{5}}\right)^{7/2}\sqrt{4}}{1250\,\Gamma\left(\frac{3}{4}\right)^2\Gamma\left(\frac{4}{5}\right)^4\sqrt{\sqrt{2}\,\sqrt{5+\sqrt{5}}}}$$

1.041346481481576259684985220 5668

1,1,-1,0,0,0,1,-2,0,0,-2,-1,-1,0,0,2,0,0,0,0,1,0,2,0,0,-2,0,2,0,0,1,1,0,0,0,0,-2,2,0,0,0,0,1,0,0,-2,0,0,0,0,0,-2,0,0,0,0,-1,-2,0,0,-2,-1,0,0,0,2,0,2,0,0,-2,0,1,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,-2,0,0,1,0,2,0,0,0,0,2,0,0,2,1,-2,0,0

A159819 Coefficients of L-series for elliptic curve 48a4: y^2 = x^3 + x^2 + x.

$$\frac{3\,e^{\frac{\pi}{2}}\,\pi\,\Gamma\left(\frac{11}{12}\right)^7\Gamma\left(\frac{7}{12}\right)^7}{32\,\Gamma\left(\frac{3}{4}\right)^{18}}$$

1.039481903774557480270080309 2637

1,1,-2,0,1,-4,-2,-2,2,4,0,8,-1,1,6,-8,-4,0,6,-2,-6,-4,-2,0,-7,2,-2,8,4,-4,-2,0,4,4,8,-8,10,-1,0,8,1,4,-4,6,-6,0,-8,-8,2,-4,-18,-16,0,12,-2,6,18,-16,-2,0,5,-6,12,8,-4,4,0,-2,-6,12,0,8,-12

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*A160832 Expansion of eta(q)*eta(q^2)*eta(q^4), where eta(q) = Product((1-q^m), m=1.. oo).*

$$\frac{e^{\frac{7\pi}{24}}\,\pi^{3/4}\,2^{1/4}}{4\,\Gamma\left(\frac{3}{4}\right)^3}$$

0.953128879795322238355596116 57665

1,-1,-2,1,-1,3,3,-1,-1,-3,2,-3,-2,0,0,1,2,4,-3,5,3,-2,-4,0,-2,-1,1,-2,2,-6,-3,-1,3,4,5,-3,2,2,3,4,-7,1,4,-1,-3,1,-4,0,-4,1,-2,1,-2,-3,1,-5,0,4,1,3,5,1,4,-1,7,-5,-2,0,0,-1,-2,6,8,-5,-5,-4,-3,0,-1,0,-6,-1,-3,3,-3,6,-2,-6,6,1,-4,6,0,5,6,7,-5,-4,4,-5,2,4,6,-4,-3

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*A164270 Expansion of f(x^3)^3 * phi(x^3) / (f(x) * phi(x)^3) in powers of x where f(), phi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{3}}\,\Gamma\left(\frac{2}{3}\right)^2\Gamma\left(\frac{7}{12}\right)\left(1+\sqrt{3}\right)^2}{24\,\pi\,\Gamma\left(\frac{11}{12}\right)}$$

0.749150393206353403644327507 43917

1,-7,32,-114,350,-967,2468,-5916,13471,-29384,61784,-125838,249230,-481506,909788,-1684824,3063657,-5478698,9648360,-16752522,28708214,-48599047,81338660,-134687856,220802690,-358574468,577143752,-921144678,1458485460

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*A164271 Expansion of (f(-q^2) * f(q^3) * f(-q^6) / f(q)^3)^2 in powers of q where f() is a Ramanujan theta function.*

$$\frac{e^{\frac{2\pi}{3}\sqrt{3}}}{18}$$

0.781398113071504379322514508171 01

1,-6,25,-84,248,-666,1662,-3912,8774,-18894,39289,-79248,155612,-298338,559812,-1030224,1862647,-3313494,5807096,-10037796,17129888,-28886052,48170178,-79492824,129900206,-210314976,337545438,-537278124,848509124

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*A164273 Expansion of phi(-q) * phi(q^3) in powers of q where phi() is a Ramanujan theta function.*

$$\frac{2^{1/4}\sqrt{3}\,\Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{11}{12}\right)^2\Gamma\left(\frac{7}{12}\right)^3\left(1+\sqrt{3}\right)}{8\,\Gamma\left(\frac{3}{4}\right)^7}$$

0.913726588947539885464472569332 85

1,-2,0,2,-2,0,0,4,0,-2,0,0,-2,-4,0,0,6,0,0,4,0,-4,0,0,0,-2,0,2,-4,0,0,4,0,0,0,0,-2,-4,0,4,0,0,0,4,0,0,0,0,6,-6,0,0,-4,0,0,0,0,-4,0,0,0,-4,0,4,6,0,0,4,0,0,0,0,0,-4,0,2,-4,0,0,4,0,-2,0,0,-4,0,0,0,0,0,0,8,0,-4,0,0,0,-4,0,0,-2,0,0,4,0

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*A164562 Taylor series coefficients of phi(-q^3)*phi(q)/phi(q^2), where phi is Euler's function.*

$$\frac{e^{\frac{\pi}{12}}\,\pi^{1/4}\,2^{23/24}\sqrt{3}\,\sqrt{\sqrt{2}\left(\sqrt{3}-1\right)}\left(\sqrt{2}\left(1+\sqrt{3}\right)\right)^{2/3}}{12\sqrt{\Gamma\left(\frac{11}{12}\right)}\sqrt{\Gamma\left(\frac{7}{12}\right)}}$$

0.956785924815677458949890963208 25

1,-1,0,0,0,-1,-1,1,1,0,0,1,0,0,-1,0,1,0,-1,1,0,-1,-1,1,1,-1,-1,1,1,0,-1,-1,1,1,-1,-1,1,1,-1,-1,2,2,-1,-1,1,1,-1,-2,1,2,-2,-1,2,1,-2,-2,2,3,-2,-2,2,2,-2,-3,2,3,-3,-2,2,2,-3,-3,3,3,-3,-3,3

A164614 Expansion of (chi(q) / chi^3(q^3))^2 in powers of q where chi() is a Ramanujan theta function.

$$-\frac{8\,\pi^2\,\Gamma\left(\frac{11}{12}\right)^4\,e^{\frac{2\,\pi}{3}}\,\left(-\frac{7}{4}+\sqrt{3}\right)\,\sqrt{3}}{3\,\Gamma\left(\frac{2}{3}\right)^4\,\Gamma\left(\frac{3}{4}\right)^4}$$

1.087944379026236901944367045815 0

1,2,1,-4,-8,-2,14,24,6,-38,-63,-16,92,150,36,-208,-329,-78,440,684,160,-884,-1358,-312,1710,2592,590,-3196,-4796,-1082,5800,8632,1929,-10270,-15162,-3364,17784,26078,5750,-30192,-44010,-9644,50369,73012,15916,-82698,-119280,-25880,133818

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*A164617 Expansion of (phi^3(q^3) / phi(q)) * (psi(-q^3) / psi^3(-q)) in powers of q where phi(), psi() are Ramanujan theta functions.*

$$\frac{\left(1+\sqrt{3}\right)^2\,\Gamma\left(\frac{7}{12}\right)\,\Gamma\left(\frac{2}{3}\right)^2}{6\,\Gamma\left(\frac{11}{12}\right)\,\pi}$$

1.051566846126417176339432520334 6

1,1,4,10,20,39,76,140,244,415,696,1140,1820,2861,4448,6816,10292,15372,22756,33356,48408,69683,99600,141312,199036,278557,387608,536230,737632,1009464,1374888,1863764,2514868,3378948,4521672,6027000,8002676

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*A169784 Number of solutions to a^2 + b^2 + 5*c^2 = n.*

$$\frac{8\,\pi^{3/4}\,2^{3/5}\,5^{1/4}\,\Gamma\left(\frac{9}{10}\right)^3\,\Gamma\left(\frac{7}{10}\right)^3\,\left(5+\sqrt{5}\right)^3\,\left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^3\,\left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)^3}{125\,\Gamma\left(\frac{3}{4}\right)^3\,\Gamma\left(\frac{4}{5}\right)^6}$$

1.180340954774830938348160345384 1

1,4,4,0,4,10,8,8,4,12,24,0,0,16,8,16,4,8,20,0,10,16,24,8,8,44,8,0,8,16,40,16,4,16,24,0,12,32,8,16,24,16,16,0,0,50,40,8,0,28,44,0,16,16,32,40,8,32,40,0,16,32,16,24,4,48,16,0,8,16,80,16,20,40,24,0,0,16,32,32,10,36

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*A173763 Expansion of (eta(q^2)^7 / eta(q^4)^2)^4 + 16 * (eta(q)^2 * eta(q^2) * eta(q^4)^2)^4 in powers of q.*

$$\frac{3\,e^{\pi}\,\pi^5}{256\,\Gamma\left(\frac{3}{4}\right)^{20}}$$

1.423413554414380028151965677640 6

1,16,-156,256,870,-2496,-952,4096,4653,13920,-56148,-39936,178094,-15232,-135720,

65536,-247662,74448,315380,222720,148512,-898368,204504,-638976,-1196225,2849504,2344680,-243712,-3840450,-2171520,-1309408,1048576,8759088,-3962592,-828240,1191168,4307078

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*A178902 Expansion of q^(-1/24) * eta(q^2)^13 / (eta(q)^5 * eta(q^4)^5) in powers of q.*

$$\frac{e^{\frac{\pi}{24}}\ \pi^{3/4}\ 2^{3/4}}{2\ \Gamma\left(\frac{3}{4}\right)^3}$$

1.2291433445012703838522231668185

1,5,7,0,0,11,0,-13,0,0,0,0,-17,0,0,-19,0,0,0,0,0,0,-23,0,0,0,25,0,0,0,0,0,0,0,0,29,0,0,0,0,31,0,0,0,0,0,0,0,0,0,0,35,0,0,0,0,0,-37,0,0,0,0,0,0,0,0,0,0,0,0,-41,0,0,0,0,0,0,-43,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,-47,0,0,0,0,0,0

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*A180312 Number of solutions to n = x + 4*y + 4*z in triangular numbers.*

$$\frac{e^{\frac{9\pi}{8}}\ 2^{1/8}\ \Gamma\left(\frac{5}{8}\right)^3\ \sqrt{2+\sqrt{2}}}{64\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

1.043301900957532186382132256185 5

1,1,0,1,2,2,1,2,1,1,3,1,2,2,3,3,2,2,3,4,0,1,4,1,3,5,2,5,3,3,3,4,2,2,5,0,4,4,2,5,6,2,2,4,5,6,4,2,3,5,4,3,7,3,3,5,2,4,3,4,5,6,2,4,8,6,3,8,2,4,8,2,6,6,5,4,3,0,5,7,5,5,6,3,5,10,2,6,6,4,10,5,4,3,10,5,4,4,2,9,8,3,7,7,0

A180318 Expansion of a(-q) in powers of q where a(q) is a cubic AGM function.

$$\frac{\pi\sqrt{3}\ \sqrt{2}\ \left(\sqrt{3}-1\right)}{3\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{3}{4}\right)\ \Gamma\left(\frac{7}{12}\right)}$$

0.740253213985806720119488854100 16

1,-6,0,-6,6,0,0,-12,0,-6,0,0,6,-12,0,0,6,0,0,-12,0,-12,0,0,0,-6,0,-6,12,0,0,-12,0,0,0,0,6,-12,0,-12,0,0,0,-12,0,0,0,0,6,-18,0,0,12,0,0,0,0,-12,0,0,0,-12,0,-12,6,0,0,-12,0,0,0,0,0,-12,0

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*A181648 Expansion of x^(-2/3) * psi(x) * c(x^2) / 3 in powers of x where psi() is a Ramanujan theta function and c() is a cubic AGM theta function.*

$$\frac{e^{\frac{19\pi}{24}}\ \pi^{3/4}\ 2^{1/8}\ \Gamma\left(\frac{11}{12}\right)^{9/2}\ \Gamma\left(\frac{7}{12}\right)^{9/2}\ \left(\sqrt{3}-1\right)}{16\ \Gamma\left(\frac{3}{4}\right)^{12}\ \sqrt{\sqrt{2}\ \left(\sqrt{3}-1\right)}}$$

1.045250193933411398936365305534 2

1,1,1,2,2,3,1,2,3,2,4,3,3,3,4,3,2,2,6,5,3,5,3,5,4,5,3,4,5,4,5,4,5,7,6,7,3,3,7,4,8,4,4,5,7,6,5,6,7,8,6,4,6,9,6,8,6,4,4,4,11,7,4,11,4,9,6,7,8,7,11,5,5,8,8,10,6,5,10,6,8,6,7,7,8

A182803 Number of 8-core partitions of n.

$$\frac{e^{\frac{21\pi}{8}}\ 2^{5/8}\ \Gamma\left(\frac{5}{8}\right)^{7}\ \left(2+\sqrt{2}\right)^{3/2}}{32768\ \pi^{7/4}\ \Gamma\left(\frac{7}{8}\right)^{7}}$$

1.047209469944156551370133302577 1

1,1,2,3,5,7,11,15,14,22,26,32,37,45,47,56,75,77,89,102,111,124,142,147,167,182,196,210,242,249,288,322,299,349,382,393,423,467,453,499,570,563,602,669,649,716,772,754,843,907,884

A182805 Number of 10-core partitions of n.

$$-\frac{e^{\frac{33\pi}{8}}\ \pi^{9/4}\ 2^{3/8}\ \left(-5+\sqrt{5}\right)^{5}\ \sqrt{5}}{400000000\ \Gamma\left(\frac{3}{4}\right)^{9}}$$

1.047209470045804298365180814627 5

1,1,2,3,5,7,11,15,22,30,32,46,57,71,85,106,121,147,165,190,242,267,302,350,400,443,511,565,638,715,774,852,964,1038,1135,1253,1372,1482,1650,1785,1878,2098,2234,2411,2625,2819,2963,3249,3393,3600,4004,4181

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*A182818 G.f.: exp(Sum_{n>=1} sigma(2n)*x^n/n).*

$$\frac{e^{-\frac{\pi}{24}}\ 2^{5/8}\ \Gamma\left(\frac{3}{4}\right)^{2}}{\sqrt{\pi}}$$

1.146271216481182291875127532187 0

1,3,8,19,41,83,161,299,538,942,1610,2694,4427,7153,11387,17884,27741,42543,64565,97034,144519,213432,312720,454803,656835,942364,1343596,1904354,2684008,3762667,5248002,7284132,10063319,13841107,18956002

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*A182820 G.f.: exp(Sum_{n>=1} sigma(4n)*x^n/n).*

$$\frac{2\, e^{-\frac{\pi}{24}}\, 2^{1/8}\, \Gamma\left(\frac{3}{4}\right)^4}{\pi}$$

1.373393664385416582240159746627 6

1,7,32,119,385,1127,3057,7799,18914,43950,98434,213486,450051,925013,1858355, 3657052,7062245,13404195,25038741,46086250,83669927,149970936,265608168, 465149039,806022315,1382822644,2350101516,3958427938

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*A185152 Expansion of (q/2) * phi(q)^3 (d/dq) phi(q) in powers of q.*

$$\frac{e^{\pi}}{8\, \Gamma\left(\frac{3}{4}\right)^4}$$

1.282777060339014427564389989331 9

1,6,12,12,30,72,56,24,117,180,132,144,182,336,360,48,306,702,380,360,672,792,552, 288,775,1092,1080,672,870,2160,992,96,1584,1836,1680,1404,1406,2280,2184,720, 1722,4032,1892,1584,3510,3312,2256,576,2793,4650

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*A185653 Expansion of exp(Sum_{n>=1} -3*sigma(2n)*x^n/n) in powers of x.*

$$\frac{e^{\frac{\pi}{8}}\, \pi^{3/2}\, 2^{1/8}}{4\, \Gamma\left(\frac{3}{4}\right)^6}$$

0.663953765856039983111032721 60

1,-9,30,-39,0,18,49,0,-192,110,81,78,-130,0,-30,-121,0,210,320,-270,0,-407,0,192,190,0, 0,0,351,-210,-418,0,-510,448,0,462,611,0,-960,50,0,0,-350,0,450,-361,-162,960,0,0, 798,-782,0,-1170,-290,-441,702,850,0,0,576

A186690 Expansion of - (1/8) theta_3''(0, q) / theta_3(0, q) in powers of q.

$$\frac{e^{\pi}}{8\, \pi}$$

0.920738904769256552400566289801 89

1,-2,4,-4,6,-8,8,-8,13,-12,12,-16,14,-16,24,-16,18,-26,20,-24,32,-24,24,-32,31,-28,40, -32,30,-48,32,-32,48,-36,48,-52,38,-40,56,-48,42,-64,44,-48,78,-48,48,-64,57,-62,72, -56,54,-80,72,-64,80,-60,60,-96,62,-64

A186829 McKay-Thompson series of class 12A for the Monster group with a(0) = 6.

$$-\frac{3\,e^{-\pi}\,\Gamma\left(\frac{2}{3}\right)^4\,\Gamma\left(\frac{7}{12}\right)^2\left(2+\sqrt{3}\right)}{\pi^2\,\Gamma\left(\frac{11}{12}\right)^2\left(-2+\sqrt{3}\right)}$$

1.290212308436213443995458595819 3

1,6,15,32,87,192,343,672,1290,2176,3705,6336,10214,16320,25905,39936,61227,92928, 138160,204576,300756,435328,626727,897408,1271205,1790592,2508783,3487424, 4824825,6641664,9083400,12371904,16778784,22630912

A187053 Expansion of (psi(x^2) / psi(x))^3 in powers of x where psi() is a Ramanujan theta function.

$$\frac{e^{\frac{3\pi}{8}}\,2^{1/8}}{4}$$

0.885543482044588675504988576215 82

1,-3,9,-22,48,-99,194,-363,657,-1155,1977,-3312,5443,-8787,13968,-21894,33873, -51795,78345,-117312,174033,-255945,373353,-540486,776848,-1109040,1573209, -2218198,3109713,-4335840,6014123,-8300811,11402928

A187076 Coefficients of L-series for elliptic curve 144a1: y^2 = x^3 - 1.

$$\frac{e^{\frac{\pi}{6}}\,\pi}{2\,\Gamma\left(\frac{3}{4}\right)^4}$$

1.175928061207322774881228693021 0

1,4,2,-8,-5,4,-10,-8,9,0,14,16,-10,4,0,8,14,-20,2,0,-11,-20,-32,16,0,4,14,-8,-9,-20,26,0,2, 28,0,16,16,28,-22,0,14,-16,0,-40,0,28,26,-32,-17,0,-32,16,-22,0,-10,-32,-34,8,14,0,45, 4,38,-8,0,0,-34

A187146 McKay-Thompson series of class 12B for the Monster group with a(0) = 5.

$$-\frac{12\,e^{-\pi}\,\Gamma\left(\frac{2}{3}\right)^2\,\Gamma\left(\frac{3}{4}\right)^8}{\pi\,\Gamma\left(\frac{11}{12}\right)^5\,\Gamma\left(\frac{7}{12}\right)^3\left(-2+\sqrt{3}\right)}$$

1.226942740909793581643100369894 7

1,5,6,-4,-3,12,-8,-12,30,-20,-30,72,-46,-60,156,-96,-117,300,-188,-228,552,-344,-420, 1008,-603,-732,1770,-1048,-1245,2976,-1776,-2088,4908,-2900,-3420,7992,-4658,

-5460,12756,-7408,-8583,19944,-11564,-13344,30756

A187147 McKay-Thompson series of class 12B for the Monster group with a(0) = -4.

$$\frac{9\, e^{-\pi}\, \Gamma\left(\frac{2}{3}\right)^4\, \Gamma\left(\frac{3}{4}\right)^4\, \left(1+\sqrt{3}\right)^4}{16\, \pi^2\, \Gamma\left(\frac{11}{12}\right)^4}$$

0.83801747653584333367334073534917

1,-4,6,-4,-3,12,-8,-12,30,-20,-30,72,-46,-60,156,-96,-117,300,-188,-228,552,-344,-420,1008,-603,-732,1770,-1048,-1245,2976,-1776,-2088,4908,-2900,-3420,7992,-4658,-5460,12756,-7408,-8583,19944,-11564,-13344,30756

A187148 McKay-Thompson series of class 12B for the Monster group with a(0) = -3.

$$e^{-\pi}\, \left(1+\sqrt{3}\right)^3$$

0.88123139479961558344775847252105

1,-3,6,-4,-3,12,-8,-12,30,-20,-30,72,-46,-60,156,-96,-117,300,-188,-228,552,-344,-420,1008,-603,-732,1770,-1048,-1245,2976,-1776,-2088,4908,-2900,-3420,7992,-4658,-5460,12756,-7408,-8583,19944,-11564,-13344,30756

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*A187149 Expansion of psi(-x)^4 * chi(-x^2)^2 in powers of x where psi(), chi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{3}}\, \pi\, 2^{3/4}}{8\, \Gamma\left(\frac{3}{4}\right)^4}$$

0.83462102040484969754167751615689

1,-4,4,0,2,0,-8,0,-5,16,4,0,-10,0,-8,0,9,-8,0,0,14,0,16,0,-10,-32,4,0,0,0,8,0,14,20,-20,0,2,0,0,0,-11,16,-20,0,-32,0,16,0,0,40,4,0,14,0,-8,0,-9,-32,-20,0,26,0,0,0,2,-36,28,0,0,0,16,0,16,0,28,0,-22,0,0,0,14,-56,-16

A187150 Expansion of psi(-x)^4 / chi(-x)^2 in powers of x where psi(), chi() are Ramanujan theta functions.

$$\frac{e^{\frac{7\pi}{12}}\, \pi\, 2^{3/4}}{16\, \Gamma\left(\frac{3}{4}\right)^4}$$

0.91527881699028148914758065904100

1,-2,1,-2,0,4,1,2,-5,0,-5,4,1,-2,-5,0,7,4,7,0,-4,-10,7,-8,0,4,0,-8,2,0,1,-2,0,2,0,14,7,0,-5, 10,-11,-8,-10,-2,0,10,-4,4,0,0,-5,-8,-11,10,0,0,0,14,-2,20,0,-11,4,13,2,-5,-14,0,-14,13,0, -11,-14,8,-2,0,10,13,-18,0,0,-5

A187154 Expansion of psi(x^4) / phi(-x) in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{2}}\ 2^{1/4}\ \sqrt{2-\sqrt{2}}}{4}$$

1.094599740270635229022445909724 1

1,2,4,8,15,26,44,72,114,178,272,408,605,884,1276,1824,2580,3616,5028,6936,9498, 12922,17468,23472,31369,41700,55156,72616,95172,124202,161436,209016,269616, 346562,443952,566856,721530,915642,1158608,1461968,1839789

A189925 Expansion of theta_4/theta_3 in powers of q.

$$\frac{2^{3/4}}{2}$$

0.840896415253714543031125476233 20

1,-4,8,-16,32,-56,96,-160,256,-404,624,-944,1408,-2072,3008,-4320,6144,-8648,12072, -16720,22976,-31360,42528,-57312,76800,-102364,135728,-179104,235264,-307672, 400704,-519808,671744,-864960,1109904

A192096 Maximum number of tatami tilings of any m X m square region with exactly n horizontal dimers and m monomers.

$$e^{\frac{\pi}{12}}\ 2^{3/4}$$

2.185096021217142527676558691136 2

2,4,6,12,18,28,44,64,92,132,186,256,352,476,638,852,1124,1472,1920,2484,3196,4096, 5216,6612,8350,10496,13140,16396,20380,25244,31178,38380,47104,57660,70380, 85684,104068,126080,152396,183808,221208,265664,318432

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*A192323 Expansion of theta_3(q^3) * theta_3(q^5) in powers of q.*

$$\frac{5^{3/4}\,\Gamma\left(\frac{2}{3}\right)\,\Gamma\left(\frac{7}{12}\right)\,\left(5-\sqrt{5}\right)^{3/2}\,\left(1+\sqrt{3}\right)\,\left(\sqrt{5}+1\right)^{3}}{1600\,\Gamma\left(\frac{3}{4}\right)^{3}}$$

1.000161700487241998872087020586 4

1,0,0,2,0,2,0,0,4,0,0,0,2,0,0,0,0,4,0,0,2,0,0,4,0,0,0,2,0,0,0,0,8,0,0,0,0,0,0,0,0,0,0,0,2,
0,4,6,0,0,0,0,4,0,0,0,4,0,0,0,0,0,0,0,0,0,0,4,0,0,0,4,0,0,2,0,0,0,0,6,0,0,4,0,0,0,0,0,0,0,
0,4,4,0,4,0,0,0,0,0,0,0,0,0

A195861 Expansion of (psi(x) / phi(x))^5 in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{e^{\frac{5\pi}{8}}\ 2^{7/8}}{16}$$

0.816613367312820950762626166123 75

1,-5,20,-65,185,-481,1165,-2665,5820,-12220,24802,-48880,93865,-176125,323685,
-583798,1035060,-1806600,3108085,-5276305,8846884,-14663645,24044285,
-39029560,62755345,-100004806,158022900,-247710570,385366265

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*A204342 a(n) = (-1)^n * Sum_{2*m + 1 | 2*n + 1} (-1)^m (2*m + 1)^4.*

$$\frac{e^{\frac{\pi}{2}}\ \pi^{5/2}\ 3^{3/4}}{3\ \Gamma\left(\frac{11}{12}\right)^5\ \Gamma\left(\frac{7}{12}\right)^5}$$

5.844820382693134623616457667980 3

1,80,626,2400,6481,14640,28562,50080,83522,130320,192000,279840,391251,524960,
707282,923520,1171200,1502400,1874162,2284960,2825762,3418800,4057106,
4879680,5762401,6681760,7890482,9164640,10425600

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*A204372 Expansion of phi(x)^2 * (5 * phi(-x)^8 + 64 * x * psi(-x)^8) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{9\ \pi^{5/2}}{4\ \Gamma\left(\frac{3}{4}\right)^{10}}$$

5.154888132857559357643654296533 7

5,4,4,-320,4,2504,-320,-9600,4,25924,2504,-58560,-320,114248,-9600,-200320,4,
334088,25924,-521280,2504,768000,-58560,-1119360,-320,1565004,114248,
-2099840,-9600,2829128,-200320,-3694080,4,4684800

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*A204386 Expansion of (theta_2(q)^8 + 4 * theta_2(q^2)^8) / 256 in powers of q^2.*

$$\frac{9\, e^{\pi}\, \pi^2}{256\, \Gamma\left(\frac{3}{4}\right)^8}$$

1.579095076696685741441785178513 5

1,12,28,96,126,336,344,768,757,1512,1332,2688,2198,4128,3528,6144,4914,9084,6860, 12096,9632,15984,12168,21504,15751,26376,20440,33024,24390,42336,29792, 49152,37296,58968,43344,72672,50654,82320,61544,96768

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*A204531 Expansion of phi(q) * phi(-q^4) in powers of q where phi() is a Ramanujan theta function.*

$$\frac{2^{3/16}\, \Gamma\left(\frac{5}{8}\right)^2 \left(2+\sqrt{2}\right)}{4\sqrt{\pi}\, \Gamma\left(\frac{7}{8}\right)^2 \left(2-\sqrt{2}\right)^{1/4}}$$

1.086427233673039206390101988330 7

1,2,0,0,0,-4,0,0,-4,2,0,0,0,-4,0,0,4,4,0,0,0,0,0,0,0,6,0,0,0,-4,0,0,4,0,0,0,0,-4,0,0,-8,4,0,0, 0,-4,0,0,0,2,0,0,0,-4,0,0,0,0,0,0,0,-4,0,0,4,8,0,0,0,0,0,0,-4,4,0,0,0,0,0,0,8,2,0,0,0,-8,0, 0,0,4,0,0,0,0,0,0,0,4,0

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*A204850 Expansion of f(x)^3 - 9 * x * f(x^9)^3 in powers of x where f() is a Ramanujan theta function.*

$$\frac{e^{\frac{\pi}{8}}\, \pi^{13/12}\, 2^{3/4}\, 3^{5/12}\, \Gamma\left(\frac{11}{12}\right)^{2/3}}{3\, \Gamma\left(\frac{2}{3}\right)^{2/3}\, \Gamma\left(\frac{3}{4}\right)^{11/3}\, \left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{2/3}}$$

0.740312947242221227643342591119 46

1,-6,0,-5,0,0,-7,0,0,0,-18,0,0,0,0,11,0,0,0,0,0,-13,0,0,0,0,0,0,0,30,0,0,0,0,0,0,0,17,0,0,0,0, 0,0,0,0,19,0,0,0,0,0,0,0,0,0,0,42,0,0,0,0,0,0,0,0,0,0,-23,0,0,0,0,0,0,0,0,0,0,0,0,25,0,0,0

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*A207541 Expansion of phi(q)^3 * phi(-q) in powers of q where phi() is a Ramanujan theta function.*

$$\frac{2^{3/4}\, \pi}{2\, \Gamma\left(\frac{3}{4}\right)^4}$$

1.171540190190073846105862278559 8

1,4,0,-16,-8,24,0,-32,24,52,0,-48,-32,56,0,-96,24,72,0,-80,-48,128,0,-96,96,124,0,-160, -64,120,0,-128,24,192,0,-192,-104,152,0,-224,144,168,0,-176,-96,312,0,-192,96,228,

0,-288,-112,216,0,-288,192,320,0

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*A208451 Expansion of phi(q) * phi(-q)^3 in powers of q where phi() is a Ramanujan theta function.*

$$\frac{\pi\, 2^{1/4}}{2\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.828404012915978817688258306606 90

1,-4,0,16,-8,-24,0,32,24,-52,0,48,-32,-56,0,96,24,-72,0,80,-48,-128,0,96,96,-124,0,160,-64,-120,0,128,24,-192,0,192,-104,-152,0,224,144,-168,0,176,-96,-312,0,192,96,-228,0,288,-112,-216,0,288,192,-320

A208589 Expansion of phi(x) / psi(x^4) in powers of x where phi(), psi() are Ramanujan theta functions.

$$2\, e^{-\frac{\pi}{2}} \sqrt{2}\, \sqrt{2+\sqrt{2}}$$

1.086431022456386256895991772080 6

1,2,0,0,1,-2,0,0,-1,4,0,0,0,-6,0,0,1,8,0,0,0,-12,0,0,-1,18,0,0,-1,-24,0,0,2,32,0,0,1,-44,0,0,-2,58,0,0,-1,-76,0,0,2,100,0,0,1,-128,0,0,-3,164,0,0,-1,-210,0,0,4,264,0,0,2,-332,0,0,-5,416

A208845 Expansion of f(x)^2 in powers of x where f() is a Ramanujan theta function.

$$\frac{e^{\frac{\pi}{12}} \sqrt{\pi}\, \sqrt{2}}{2\,\Gamma\left(\frac{3}{4}\right)^2}$$

1.084402167651523451564969938446 2

1,2,-1,-2,1,-2,-2,0,-2,2,1,0,0,-2,3,2,2,0,0,2,-2,0,0,2,-1,0,2,-2,-2,-2,1,-2,0,-2,-2,2,2,0,-2,0,-4,0,0,0,1,2,0,0,2,0,2,-2,1,2,0,-2,2,0,0,2,0,2,0,2,2,0,-4,0,0,2,-1,-2,0,-2,0,0,0,2,2

A208850 Expansion of phi(q^2) / phi(-q) in powers of q where phi() is a Ramanujan theta function.

$$\frac{2^{1/4} \sqrt{2+\sqrt{2}}}{2}$$

1.098684113467809966039801195240 7

1,2,6,12,22,40,68,112,182,286,440,668,996,1464,2128,3056,4342,6116,8538,11820,16248,22176,30068,40528,54308,72378,95976,126648,166352,217560,283344,

367552,474998,611624,784812,1003712,1279562,1626216,2060708,2603856

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*A208978 Expansion of f(x) * f(x^3) where f() is a Ramanujan theta function.*

$$\frac{e^{\frac{\pi}{6}}\ \pi^{1/3}\ 3^{2/3}\ \Gamma\left(\frac{2}{3}\right)^{1/3}\ \left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{1/3}}{6\ \Gamma\left(\frac{3}{4}\right)^{5/3}\ \Gamma\left(\frac{11}{12}\right)^{1/3}}$$

1.041430353913248098803553422645 2

1,1,-1,1,1,-2,-1,-2,0,0,-1,1,-1,1,0,-1,-1,1,2,0,1,-2,1,1,0,1,2,1,0,1,-1,0,-1,1,0,1,-2,-2,2,0,-1,-1,0,-1,0,1,2,-2,1,0,-2,-2,-1,0,-1,1,-1,-1,-1,0,0,1,-1,1,0,0,2,2,-1,0,-1,-1,2,-2,0,0,2

A209676 Expansion of f(x)^12 in powers of x where f() is a Ramanujan theta function.

$$\frac{e^{\frac{\pi}{2}}\ \pi^3}{8\ \Gamma\left(\frac{3}{4}\right)^{12}}$$

1.626081325386472907300444937888 5

1,12,54,88,-99,-540,-418,648,594,-836,1056,4104,-209,-4104,-594,-4256,-6480,4752,-298,-5016,17226,12100,-5346,1296,-9063,7128,19494,-29160,-10032,7668,-34738,-8712,-22572,-21812,49248,46872,67562,-2508,-47520,76912

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*A209939 Expansion of (f(x) * f(x^3))^3 in powers of q where f() is a Ramanujan theta function.*

$$\frac{e^{\frac{\pi}{2}}\ \pi\ 3^{1/4}\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{7}{12}\right)\ \left(1+\sqrt{3}\right)}{24\ \Gamma\left(\frac{3}{4}\right)^7}$$

1.129511598550515609734635120447 6

1,3,0,-2,9,0,-22,0,0,-26,-6,0,25,27,0,46,0,0,26,-66,0,22,0,0,-45,0,0,0,-78,0,74,-18,0,-122,0,0,-46,75,0,142,81,0,0,0,0,44,138,0,2,0,0,-194,0,0,-214,78,0,0,-198,0,121,0,0,-146,66,0,52,0,0,22

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*A209940 Expansion of psi(x^4) * phi(-x^4)^4 / phi(x) in powers of x where phi(), psi() are Ramanujan theta function.*

$$\frac{e^{\frac{\pi}{2}}\,\Gamma\left(\frac{5}{8}\right)^4\,2^{1/4}\left(3+2\sqrt{2}\right)\sqrt{2+\sqrt{2}}}{64\,\pi\,\Gamma\left(\frac{7}{8}\right)^4}$$

0.92041931874526278414769995064653

1,-2,4,-8,7,-10,12,-8,18,-18,16,-24,21,-20,28,-32,20,-32,36,-24,42,-42,28,-48,57,-36,52,-40,36,-58,60,-56,48,-66,48,-72,74,-42,80,-80,61,-82,72,-56,90,-96,64,-72,98,-70,100,-104,64,-106,108,-72,114,-96

A209941 Expansion of f(x)^6 in powers of x where f() is a Ramanujan theta function.

$$\frac{e^{\frac{\pi}{4}}\,\pi^{3/2}\sqrt{2}}{4\,\Gamma\left(\frac{3}{4}\right)^6}$$

1.27517893857547416257955572745 34

1,6,9,-10,-30,0,11,-42,0,70,18,54,49,-90,0,22,-60,0,-110,0,81,-180,-78,0,130,198,0,182,-30,-90,121,-84,0,0,210,0,-252,102,-270,-170,0,0,-69,-330,0,38,420,0,-190,390,0,108,0,0,0,300,99,-442,210,0,418

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*A209942 Expansion of (psi(-x) * phi(x)^4)^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{4}}\,\pi^{5/2}\sqrt{2}}{4\,\Gamma\left(\frac{3}{4}\right)^{10}}$$

1.77658430827576095584415382347 37

1,14,81,238,322,0,-429,-82,0,-2162,-3038,1134,2401,-2482,0,6958,3332,0,1442,0,6561,4508,-9758,0,-1918,-18802,0,-9362,-24638,19278,14641,-14756,0,0,6562,0,-1148,33998,26082,20398,0,0,28083,-49042,0,64078,-30268,0

A210030 Expansion of phi(-q) / phi(q^2) in powers of q where phi() is a Ramanujan theta function.

$$2^{1/4}\sqrt{2-\sqrt{2}}$$

0.91017972112445468260871551564496

1,-2,-2,4,6,-8,-12,16,22,-30,-40,52,68,-88,-112,144,182,-228,-286,356,440,-544,-668,816,996,-1210,-1464,1768,2128,-2552,-3056,3648,4342,-5160,-6116,7232,8538,-10056,-11820,13872,16248,-18996,-22176,25844,30068

A210063 Expansion of psi(x^4) / phi(x) in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{2}} \sqrt{2-\sqrt{2}}}{4}$$

0.92044499773122416676243157167018

1,-2,4,-8,15,-26,44,-72,114,-178,272,-408,605,-884,1276,-1824,2580,-3616,5028,-6936, 9498,-12922,17468,-23472,31369,-41700,55156,-72616,95172,-124202,161436, -209016,269616,-346562,443952,-566856,721530,-915642,1158608

A210065 Expansion of phi(q^2) / phi(q) in powers of q where phi() is a Ramanujan theta function.

$$\frac{\sqrt{2+\sqrt{2}}}{2}$$

0.92387953251128675612818318939680

1,-2,6,-12,22,-40,68,-112,182,-286,440,-668,996,-1464,2128,-3056,4342,-6116,8538, -11820,16248,-22176,30068,-40528,54308,-72378,95976,-126648,166352,-217560, 283344,-367552,474998,-611624,784812,-1003712,1279562,-1626216

A210066 Expansion of (phi(q^2) / phi(q))^2 in powers of q where phi() is a Ramanujan theta function.

$$\frac{1}{2} + \frac{\sqrt{2}}{4}$$

0.85355339059327376220042218105242

1,-4,16,-48,128,-312,704,-1504,3072,-6036,11488,-21264,38400,-67864,117632, -200352,335872,-554952,904784,-1457136,2320128,-3655296,5702208,-8813472, 13504512,-20523996,30952544,-46340832,68901888,-101777112,149403264, -218016640

A210067 Expansion of (phi(-q) / phi(q^2))^2 in powers of q where phi() is a Ramanujan theta function.

$$\left(2-\sqrt{2}\right)\sqrt{2}$$

0.82842712474619009760337744841939

1,-4,0,16,0,-56,0,160,0,-404,0,944,0,-2072,0,4320,0,-8648,0,16720,0,-31360,0,57312,0, -102364,0,179104,0,-307672,0,519808,0,-864960,0,1419456,0,-2299832,0,3682400,0,

-5831784,0,9141808,0,-14194200,0,21842368,0

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*A210458 Expansion of q * (psi(-q^5) / psi(-q))^2 in powers of q where psi() is a Ramanujan theta function.*

$$\frac{e^{\pi}\, 2^{4/5} \sqrt{5}\ \Gamma\left(\frac{4}{5}\right)^{12} \left(5-\sqrt{5}\right)^6 \left(\sqrt{5}+1\right)^6 \left(\sqrt{5}-1\right)^6}{131072000\ \Gamma\left(\frac{9}{10}\right)^6 \Gamma\left(\frac{7}{10}\right)^6}$$

1.092555301552897133471203884391 1

1,2,3,6,11,16,24,38,57,82,117,168,238,328,448,614,834,1114,1480,1966,2592,3384,4398,5704,7361,9436,12045,15344,19470,24576,30922,38822,48576,60548,75259,93342,115454,142360,175104,214958,263262,321584,391993,476952

A210459 McKay-Thompson series of class 20A for the Monster group with a(0) = 4.

$$\frac{e^{-\pi}\left(5+\sqrt{5}\right)^4}{100}$$

1.184770408564298125030983643892 6

1,4,6,8,17,32,54,80,116,192,290,408,585,832,1192,1648,2237,3072,4156,5576,7414,9824,12964,16896,22002,28544,36794,47184,60185,76736,97388,122864,154615,194048,242904,302800,376271,466720,577176,711840,875611,1074752

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*A212885 Expansion of phi(q) * phi(-q)^2 in powers of q where phi() is a Ramanujan theta function.*

$$\frac{\pi^{3/4}\sqrt{2}}{2\,\Gamma\left(\frac{3}{4}\right)^3}$$

0.906767655167731220246596168679 90

1,-2,-4,8,6,-8,-8,0,12,-10,-8,24,8,-8,-16,0,6,-16,-12,24,24,-16,-8,0,24,-10,-24,32,0,-24,-16,0,12,-16,-16,48,30,-8,-24,0,24,-32,-16,24,24,-24,-16,0,8,-18,-28,48,24,-24,-32,0,48,-16,-8,72,0,-24,-32

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*A213022 Expansion of phi(x)^2 * psi(x) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{8}}\ \pi^{3/4}\ 2^{3/8}}{2\,\Gamma\left(\frac{3}{4}\right)^3}$$

1.231443001789190276125523975738 0

1,5,8,5,8,16,9,8,16,8,17,24,8,16,16,13,24,16,16,24,32,13,8,32,8,24,40,16,25,24,24,24, 32,16,16,40,17,32,32,16,40,48,16,16,32,21,48,32,16,24,40,32,24,56,24,45,40,16,32, 24,32,40,48,16,32,64,25,24

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*A213023 Expansion of psi(x)^2 * psi(-x^3) / chi(-x^2) in powers of x where psi(), chi() are Ramanujan theta functions.*

$$\frac{e^{\frac{17\pi}{24}}\ \pi^{5/4}\ 2^{5/8}\ \sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\ \left(\sqrt{3}-1\right)}{24\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{3}{4}\right)^4}$$

1.090412123869675175568454687924 6

1,2,2,3,2,2,4,4,5,3,4,5,4,6,4,4,5,7,5,3,6,8,8,8,6,3,7,6,10,6,5,10,4,8,7,8,10,6,9,8,5,10,10, 11,6,9,11,6,12,9,8,8,10,9,6,6,15,12,9,9,6,13,10,13,10,7,14,12,12,8,7,13,10,16,9,10, 10,12

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*A213056 Expansion of chi(x) * f(x^3)^3 in powers of x where chi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{3}}\ \pi^{1/4}\ \sqrt{3}\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{11}{12}\right)^5\ \Gamma\left(\frac{7}{12}\right)^6\ \sqrt{2}\ \left(1+\sqrt{3}\right)}{32\ \Gamma\left(\frac{3}{4}\right)^{14}}$$

1.043550843641377582797407583094 5

1,1,0,4,4,1,4,4,5,0,0,8,4,4,4,8,9,4,0,4,12,1,4,8,8,4,0,8,8,4,8,16,8,5,0,12,12,0,8,12,13,0,0, 8,8,8,12,8,16,4,0,16,12,4,4,20,13,4,0,16,20,8,8,8,8,9,0,12,16,4,12,12,16,0,0,16,20,4,8

A213384 Expansion of phi(-q)^3 in powers of q where phi() is a Ramanujan theta function.

$$\frac{\pi^{3/4}\ 2^{1/4}}{2\ \Gamma\left(\frac{3}{4}\right)^3}$$

0.762497670698561548055224224187 30

1,-6,12,-8,6,-24,24,0,12,-30,24,-24,8,-24,48,0,6,-48,36,-24,24,-48,24,0,24,-30,72,-32,0, -72,48,0,12,-48,48,-48,30,-24,72,0,24,-96,48,-24,24,-72,48,0,8,-54,84,-48,24,-72,96, 0,48,-48,24,-72,0,-72,96

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*A213622 Expansion of phi(x) * psi(x) * phi(x^2) in powers of x where phi(), psi() are*

Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{8}}\ 2^{1/8}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(2+\sqrt{2}\right)^2}{16\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

1.137704984807292772707347447636 3

1,3,4,7,8,4,9,8,4,16,9,8,20,8,8,11,8,12,20,20,8,15,16,12,20,16,8,24,21,8,20,8,16,28,24,8,17,32,12,36,16,8,24,16,24,19,20,20,32,16,12,28,16,20,44,27,12,36,24,16,28,24,16,28,32,12,25,32,12,48

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*A213624 Expansion of psi(x)^2 * psi(x^4) in powers of x where psi() is a Ramanujan theta function.*

$$\frac{e^{\frac{3\pi}{4}}\ \sqrt{2}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(1+\sqrt{2}\right)}{32\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

1.088467468925764517188256670994 9

1,2,1,2,3,2,4,4,2,2,5,4,2,6,3,6,7,2,5,4,5,6,6,2,5,10,3,6,10,4,6,8,3,8,7,6,7,6,4,6,11,6,9,10,3,6,14,4,8,10,8,10,5,6,4,16,7,4,10,4,13,14,7,8,8,6,10,12,7,12,15,8,8,10,4,6,17,6,10,10

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*A213625 Expansion of psi(x)^2 * phi(x^2) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{4}}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(2+\sqrt{2}\right)^2\ \sqrt{2}}{32\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

1.092528960256812920232089609533 6

1,2,3,6,4,4,7,2,8,10,4,10,9,6,8,10,4,8,16,8,9,12,8,12,20,6,8,10,8,18,11,12,8,20,12,8,20,6,20,26,8,8,15,10,16,18,12,16,20,10,16,16,8,24,24,8,21,26,8,20,20,14,8,28,16,10,28,10,24,22,8,16,17

A213791 Expansion of psi(-x)^6 in powers of x where psi() is a Ramanujan theta function.

$$\frac{e^{\frac{3\pi}{4}}\ \pi^{3/2}\ \sqrt{2}}{32\ \Gamma\left(\frac{3}{4}\right)^6}$$

0.766777430087590497655197215249 44

1,-6,15,-26,45,-66,82,-120,156,-170,231,-276,290,-390,435,-438,561,-630,651,-780,861,-842,1020,-1170,1095,-1326,1431,-1370,1716,-1740,1682,-2016,2145,-2132,2415,-2550,2353,-2850,3120,-2810,3321,-3486,3285,-3906,4005

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*A214361 Expansion of c(q^2) * (c(q) + 2 * c(q^4)) / 9 in powers of q where c() is a cubic AGM theta function.*

$$\frac{e^{\pi}\,\pi^2\,\sqrt{2}\;3^{3/4}\left(\sqrt{3}-1\right)^2}{54\,\Gamma\left(\frac{2}{3}\right)^2\Gamma\left(\frac{3}{4}\right)^2\Gamma\left(\frac{7}{12}\right)^2}$$

1.135508514971610248382077645381 1

1,3,3,3,6,9,8,3,9,18,12,9,14,24,18,3,18,27,20,18,24,36,24,9,31,42,27,24,30,54,32,3,36,54,48,27,38,60,42,18,42,72,44,36,54,72,48,9,57,93,54,42,54,81,72,24,60,90,60,54,62,96,72,3,84,108,68,54

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*A214456 Expansion of b(q^2) * (b(q) + 2 * b(q^4)) / 3 in powers of q where b() is a cubic AGM theta function.*

$$-\frac{\Gamma\left(\frac{2}{3}\right)^2}{4\,\Gamma\left(\frac{11}{12}\right)^3\Gamma\left(\frac{7}{12}\right)\left(-2+\sqrt{3}\right)}$$

0.951575980301471700081733966354 52

1,-1,-3,5,-3,-6,15,-8,-3,23,-18,-12,15,-14,-24,30,-3,-18,69,-20,-18,40,-36,-24,15,-31,-42,77,-24,-30,90,-32,-3,60,-54,-48,69,-38,-60,70,-18,-42,120,-44,-36,138,-72,-48,15,-57,-93,90,-42,-54,231,-72,-24,100

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*A215472 Expansion of (psi(x) * phi(-x)^4)^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{4}}\,\pi^{5/2}\,2^{3/4}}{16\,\Gamma\left(\frac{3}{4}\right)^{10}}$$

0.528181674950930628790287609669 12

1,-14,81,-238,322,0,-429,82,0,2162,-3038,-1134,2401,2482,0,-6958,3332,0,1442,0,6561,-4508,-9758,0,-1918,18802,0,9362,-24638,-19278,14641,14756,0,0,6562,0,-1148,-33998,26082,-20398,0,0,28083,49042,0,-64078,-30268

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*A215596 Expansion of psi(-x) * f(-x^4)^3 in powers of x where psi(), f() are Ramanujan*

theta functions.

$$\frac{e^{\frac{5\pi}{8}}\,\pi\,2^{5/8}}{16\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.956695379653418889599034818546 50

1,-1,0,-1,-3,3,1,3,0,0,-2,0,5,-5,-3,-6,0,0,5,3,0,-1,5,0,-7,10,0,2,1,0,-7,0,-3,-5,-7,0,1,0,0,7,11,-9,0,-9,0,6,9,0,5,3,9,0,-7,0,0,-10,0,-5,0,3,-18,2,0,11,0,0,-10,-5,9,7,-14,0,0,0,0,11,9

---

*A215597 Expansion of psi(-x) * f(-x)^3 in powers of x where psi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{4}}\,\pi\,2^{1/8}}{4\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.833062408021299264753477767748 85

1,-4,3,4,-2,0,-11,4,0,12,10,-12,-7,-4,0,-12,16,0,6,0,9,8,-10,0,-18,-20,0,20,-14,12,11,24,0,0,-22,0,16,-20,-6,-12,0,0,-3,4,0,-20,48,0,14,28,0,-40,0,0,0,-8,-33,-4,-26,0,30,28,0,0,2,12,-16,20,0

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*A215598 Expansion of phi(-x^2) * f(x)^3 in powers of x where phi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{8}}\,\pi\,2^{1/8}}{2\,\Gamma\left(\frac{3}{4}\right)^4}$$

1.125020636262949877364259913300 3

1,3,-2,-11,0,10,-7,0,16,6,9,-10,-18,0,-14,11,0,-22,16,-6,0,-3,0,48,14,0,0,0,-33,-26,30,0,2,-16,0,-10,-13,0,-48,26,0,0,18,0,34,19,30,-16,0,0,-2,-6,0,22,-34,-21,14,42,0,0,-48,0,0,-80,0,-22,-23,0

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*A215600 Expansion of psi(-x)^2 * f(-x)^6 in powers of x where psi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\,\pi^2\,2^{1/4}}{16\,\Gamma\left(\frac{3}{4}\right)^8}$$

0.693992975658245697568777089829 75

1,-8,22,-16,-27,40,-18,80,-94,-40,0,-48,359,-80,-130,-320,0,160,214,400,-230,-152,-594,416,-343,240,518,-400,0,200,830,-592,-396,-776,0,-400,1098,200,0,1120,729,-552,-2068,272,-1670,800,0,400,594,1480,598,48

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*A215601 Expansion of phi(-x)^2 * f(-x)^6 + 32 * x * psi(-x)^2 * f(-x^4)^6 in powers of x where phi(), psi(), f() are Ramanujan theta functions.*

$$\frac{3\, e^{\frac{\pi}{4}}\, \pi^2\, 2^{1/4}}{8\, \Gamma\left(\frac{3}{4}\right)^8}$$

1.898507148026238858909099031000

1,22,-27,-18,-94,0,359,-130,0,214,-230,-594,-343,518,0,830,-396,0,1098,0,729,-2068,-1670,0,594,598,0,-1746,2002,486,-1331,5148,0,0,-1606,0,-2860,-3514,2538,286,0,0,-1873,-4082,0,3942,4708,0,5362,1174,0,-5060

---

*A216711 Expansion of q * (phi(q) * psi(-q))^8 in powers of q where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\pi}\, \pi^4}{64\, \Gamma\left(\frac{3}{4}\right)^{16}}$$

1.362244750233627620704811955901 9

1,8,12,-64,-210,96,1016,512,-2043,-1680,1092,-768,1382,8128,-2520,-4096,14706,-16344,-39940,13440,12192,8736,68712,6144,-34025,11056,-50760,-65024,-102570,-20160,227552,32768,13104,117648,-213360,130752,160526,-319520

A219601 Number of partitions of n in which no parts are multiples of 6.

$$\frac{e^{\frac{5\pi}{24}}\, 2^{3/8}\, 3^{7/12}\, \pi^{1/6}\, \Gamma\left(\frac{11}{12}\right)^{1/3}}{3\, \Gamma\left(\frac{2}{3}\right)^{1/3}\, \Gamma\left(\frac{3}{4}\right)^{1/3}\, \left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{1/3}}$$

1.047209463226182424060415988 7932

1,1,2,3,5,7,10,14,20,27,37,49,65,85,111,143,184,234,297,374,470,586,729,902,1113,1367,1674,2042,2485,3013,3645,4395,5288,6344,7595,9070,10809,12852,15252,18062,21352,25191,29671,34884,40948,47985,56146,65592

A223903 McKay-Thompson series of class 20C for the Monster group with a(0) = -1.

$$\frac{e^{-\pi}\left(5+\sqrt{5}\right)^5\sqrt{5}}{2000}$$

0.95849939496106693767620787846270

1,-1,1,-2,2,2,-1,0,-4,2,5,-2,0,-8,2,8,-3,2,-14,6,14,-6,4,-24,12,24,-11,4,-40,16,38,-16,5,-62,24,60,-24,10,-94,40,91,-38,18,-144,62,136,-57,24,-214,88,201,-82,30,-308,122,288,-117,48,-440,180,410

A224916 Expansion of chi(x)^2 / chi(-x^2)^6 in powers of x where chi() is a Ramanujan theta function.

$$\frac{e^{\frac{5\pi}{12}}\,2^{1/4}}{4}$$

1.10074736630700073124306002265 09

1,2,7,14,31,58,112,196,347,580,966,1554,2485,3872,5993,9102,13719,20384,30068,43836,63481,91048,129763,183448,257839,359862,499583,689312,946416,1292388,1756838,2376598,3201557,4293942,5736736,7633702,10121408,13370634

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*A225543 G.f.: Product_{k>0} (1 - x^k)^4 * (1 - (-x)^k)^8.*

$$\frac{e^{\frac{\pi}{2}}\,\pi^3\sqrt{2}}{16\,\Gamma\left(\frac{3}{4}\right)^{12}}$$

1.14981313194158388415021941545 32

1,4,-10,-56,29,332,30,-1064,-302,1940,288,-1960,1071,1192,-1938,-736,-2000,-1488,5014,7288,4170,-10644,-8482,11184,-12647,-15544,15590,9992,25424,4604,-26610,2472,-28972,3140,26464,-39416,31338,24764,-25248,-16176

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*A225564 Expansion of psi(-x)^2 * f(-x^4)^6 in powers of x where psi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{5\pi}{4}}\,\pi^2\,2^{1/4}}{128\,\Gamma\left(\frac{3}{4}\right)^8}$$

0.91526604945019930588837179281195

1,-2,1,-2,-4,12,-3,10,-3,-20,-7,-8,29,-10,25,-28,-12,54,20,34,-74,-42,-80,22,53,40,-43,16,73,-50,114,-38,-20,-68,104,-100,-47,114,-47,-24,-100,-68,-151,50,137,244,-40,326,-23,-194,-30,50,-100,-160,6,-274

A225701 Expansion of chi(q)^5 / chi(q^5) in powers of q where chi() is a Ramanujan theta function.

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

1.23606797749978969640917366873127

1,5,10,15,30,55,80,120,190,285,410,585,840,1190,1640,2240,3070,4170,5570,7400,9830,12960,16920,21990,28520,36805,47180,60225,76720,97350,122880,154610,194110,242880,302740,376295,466710,577270,711800,875520,1074790

A225849 McKay-Thompson series of class 20C for the Monster group with a(0) = 3.

$$\frac{e^{-\pi}\left(5-\sqrt{5}\right)^2\left(\sqrt{5}+1\right)^4}{32}$$

1.13135506801615593677387882714960

1,3,1,-2,2,2,-1,0,-4,2,5,-2,0,-8,2,8,-3,2,-14,6,14,-6,4,-24,12,24,-11,4,-40,16,38,-16,5,-62,24,60,-24,10,-94,40,91,-38,18,-144,62,136,-57,24,-214,88,201,-82,30,-308,122,288,-117,48,-440,180,410

A225853 Expansion of phi(x) / f(-x^4) in powers of x where phi(), f() are Ramanujan theta functions.

$$e^{-\frac{\pi}{6}}\,2^{7/8}$$

1.08643860000986803403620994506640

1,2,0,0,3,2,0,0,4,6,0,0,7,8,0,0,13,14,0,0,19,20,0,0,29,34,0,0,43,46,0,0,62,70,0,0,90,96,0,0,126,138,0,0,174,186,0,0,239,262,0,0,325,346,0,0,435,472,0,0,580,620,0,0,769,826,0,0,1007,1072,0

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*A225872 Expansion of k(q)^3 * k'(q)^2 * (K(q) / (Pi/2))^6 / 64 in powers of q where k(), k'(), K() are Jacobi elliptic functions.*

$$\frac{e^{\frac{\pi}{2}}\,\pi^3\sqrt{2}}{512\,\Gamma\left(\frac{3}{4}\right)^{12}}$$

0.03593166037317449637969435673291

0,1,-4,2,8,-13,28,-26,-56,69,-48,134,80,-182,-84,-312,280,204,332,142,-816,91,-196,780,-224,-526,-244,-1198,2216,767,508,-390,-400,-1167,-1424,466,-2264,1391,1392,3796,-1480,-11,1768,-2274,1320,-1508,-1984,-8450

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*A225912 Expansion of q * (phi(-q^2) * psi(-q)^2)^4 in powers of q where phi(), psi() are Ramanujan theta functions.*

$$\frac{\sqrt{2}\ \pi^3}{128\ \Gamma\left(\frac{3}{4}\right)^{12}}$$

0.029877833343819895404720399301683

0,1,-8,20,0,-74,96,-24,0,157,-432,124,0,478,704,-1480,0,-1198,792,3044,0,-480,-4320,184,0,2351,3344,-1720,0,-3282,5184,-5728,0,2480,-4752,1776,0,10326,-6688,9560,0,-8886,-8448,-9188,0,-11618,32832,23664,0,-16231

A225915 Expansion of (k(q) / 4)^4 in powers of q where k() is a Jacobi elliptic function.

$$\frac{e^{2\pi}}{1024}$$

0.52294106984840306299125911092681

1,-16,152,-1088,6444,-33184,153152,-646528,2533070,-9311664,32387616,-107299904,340436664,-1039026144,3061896704,-8739810688,24229115109,-65390485328,172155210320,-442928464640,1115433685796,-2753362613984,6670224790272,-15876957230848

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*A225923 Expansion of q^(-1/2) * k(q) * (1 - k(q)^4) * (K(q) / (Pi/2))^6 / 4 in powers of q where k(), k'(), K() are Jacobi elliptic functions.*

$$\frac{3\ e^{\frac{\pi}{2}}\ \pi^3\ \sqrt{2}}{32\ \Gamma\left(\frac{3}{4}\right)^{12}}$$

1.7247196979123758262253291231799

1,20,-74,-24,157,124,478,-1480,-1198,3044,-480,184,2351,-1720,-3282,-5728,2480,1776,10326,9560,-8886,-9188,-11618,23664,-16231,-23960,11686,-9176,60880,16876,-18482,-3768,-35372,-15532,3680,-31960,-4886,47020,-2976,44560

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*A226086 Expansion of (2 * eta(q^2)^24 - eta(q)^16 * eta(q^4)^8)^3 / (eta(q)^4 * eta(q^2) * eta(q^4)^6)^4 in powers of q.*

$$\frac{27\ e^{\pi}\ \pi^7}{1024\ \Gamma\left(\frac{3}{4}\right)^{28}}$$

6.216457898606285183880188647691 8

1,64,1236,4096,-57450,79104,64232,262144,-66627,-3676800,2464572,5062656,

8032766,4110848,-71008200,16777216,71112402,-4264128,136337060,-235315200,79390752,157732608,-1186563144,324009984,2079799375,514097024,-2052934200,263094272

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*A226132 Expansion of - c(-q) * c(q^2) / 9 in powers of q where c() is a cubic AGM theta function.*

$$\frac{e^{\pi}\,\pi\,\Gamma\left(\frac{11}{12}\right)^{9}\,\Gamma\left(\frac{7}{12}\right)^{9}}{64\,\Gamma\left(\frac{3}{4}\right)^{22}}$$

0.962328234287177179549684058295 69

1,-1,3,-1,6,-3,8,-1,9,-6,12,-3,14,-8,18,-1,18,-9,20,-6,24,-12,24,-3,31,-14,27,-8,30,-18,32,-1,36,-18,48,-9,38,-20,42,-6,42,-24,44,-12,54,-24,48,-3,57,-31,54,-14,54,-27,72,-8,60,-30,60,-18,62,-32,72

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*A226139 Expansion of b(-q) * b(q^2) in powers of q where b() is a cubic AGM theta function.*

$$\frac{\pi\,\Gamma\left(\frac{3}{4}\right)^{2}}{\Gamma\left(\frac{11}{12}\right)^{3}\,\Gamma\left(\frac{7}{12}\right)^{3}}$$

1.122821288803971354633381376 5292

1,3,-3,-15,-3,18,15,24,-3,-69,-18,36,15,42,-24,-90,-3,54,69,60,-18,-120,-36,72,15,93,-42,-231,-24,90,90,96,-3,-180,-54,144,69,114,-60,-210,-18,126,120,132,-36,-414,-72,144,15,171,-93,-270,-42,162,231,216

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*A226192 Expansion of phi(x^2) * psi(-x) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{8}}\;2^{3/4}\,\Gamma\left(\frac{5}{8}\right)^{2}\,\left(2+\sqrt{2}\right)^{3/2}}{16\,\sqrt{\pi}\;\Gamma\left(\frac{7}{8}\right)^{2}}$$

0.960278573803505835050 5129563922112

1,-1,2,-3,0,-2,1,0,4,-2,1,-2,2,0,2,-1,0,-2,4,-2,0,-3,0,-4,2,0,0,0,3,-2,2,0,2,-4,0,-2,3,0,4,-2,0,0,2,0,2,-1,2,-4,0,0,2,-2,0,-6,2,-1,2,-2,0,0,4,0,0,-4,0,-2,1,0,4,0,0,-2,2,-4,2,-2,0,-2

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*A226194 Expansion of f(-x^1, -x^7) * f(-x^3, -x^5) in powers of x where f(,) is*

Ramanujan's general theta function.

$$\frac{e^{\frac{5\pi}{8}}\ 2^{3/4}\ \Gamma\left(\frac{5}{8}\right)^2\ \left(2+\sqrt{2}\right)\ \sqrt{2-\sqrt{2}}}{32\ \sqrt{\pi}\ \Gamma\left(\frac{7}{8}\right)^2}$$

0.956708725090316868619186077381 94

1,-1,0,-1,1,-1,1,-1,0,0,2,0,1,-1,1,-2,0,0,1,-1,0,-1,1,0,1,-2,0,-2,1,0,1,0,1,-1,1,0,1,0,0,-1,3,-1,0,-1,0,-2,1,0,1,-1,1,0,1,0,0,-2,0,-1,0,-1,2,-2,0,-1,0,0,2,-1,1,-1,2,0,0,0,0,-1,1,0,2

A226252 Number of ways of writing n as the sum of 7 triangular numbers.

$$\frac{e^{\frac{7\pi}{8}}\ \pi^{7/4}\ 2^{5/8}}{32\ \Gamma\left(\frac{3}{4}\right)^7}$$

1.345391834185839774026810379189 2

1,7,21,42,77,126,175,253,357,434,567,735,833,1057,1302,1400,1708,2037,2191,2597,3003,3151,3619,4242,4389,4935,5691,5740,6594,7434,7371,8400,9303,9506,10626,11592,11585,12761,14427,14203,15519,17241,16808,18788,20559,19950,21882,23898,23786

A226253 Number of ways of writing n as the sum of 9 triangular numbers.

$$\frac{e^{\frac{9\pi}{8}}\ \pi^{9/4}\ 2^{3/8}}{64\ \Gamma\left(\frac{3}{4}\right)^9}$$

1.464410137570153209747556994 1504

1,9,36,93,198,378,633,990,1521,2173,2979,4113,5370,6858,8955,11055,13446,16830,20031,23724,28836,33381,38520,45729,52203,59121,68922,77461,86283,99747,110547,121500,138870,152034,166725,188568,204156,221760,248310,268713,289422,321786,345570,369036

A226254 Number of ways of writing n as the sum of 10 triangular numbers from A000217.

$$\frac{e^{\frac{5\pi}{4}}\ \pi^{5/2}\ 2^{3/4}}{128\ \Gamma\left(\frac{3}{4}\right)^{10}}$$

1.527811224288251871484233844 5199

1,10,45,130,300,612,1105,1830,2925,4420,6341,9000,12325,16290,21645,27932,34980,

44370,54900,66430,81702,98050,115440,138330,162565,187800,220545,254800,289265,334890,382058,427350,488700,550420,609960,691812,770185,845750,949365,1049400,1145580,1274580

A226255 Number of ways of writing n as the sum of 11 triangular numbers.

$$\frac{e^{\frac{11\pi}{8}}\ \pi^{11/4}\ 2^{1/8}}{128\ \Gamma\left(\frac{3}{4}\right)^{11}}$$

1.59395723723562781528197232475 65

1,11,55,176,440,957,1848,3245,5412,8580,12892,18888,26895,36916,50160,66935,86658,111870,142582,177320,221100,272690,329065,399102,480040,566808,672969,793760,920326,1074040,1248412,1425974,1640595,1882145,2123385,2418339,2743928,3062895,3453978,3880855

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*A226289 Expansion of f(-x) * phi(x^3) in powers of x where f(), phi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{24}}\ 2^{1/8}\ \sqrt{3}\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{11}{12}\right)^2\ \Gamma\left(\frac{7}{12}\right)^3\ \left(1+\sqrt{3}\right)}{8\ \Gamma\left(\frac{3}{4}\right)^7}$$

0.95507291295901583337824517401326

1,-1,-1,2,-2,-1,0,1,2,0,2,0,1,-2,-2,-3,0,2,-2,2,0,0,1,0,-2,2,1,0,-2,0,0,0,2,0,4,-1,0,0,0,-2,-1,0,-2,-2,0,0,0,-2,2,0,-2,1,-2,4,2,2,0,1,0,0,0,0,-2,0,0,0,0,-2,0,2,1,0,0,-2,2,2,-2,-3,2

A226535 Expansion of b(-q) in powers of q where b() is a cubic AGM theta function.

$$\frac{\pi^{2/3}\ 3^{1/3}\ \Gamma\left(\frac{11}{12}\right)^{1/3}}{\Gamma\left(\frac{2}{3}\right)^{1/3}\ \Gamma\left(\frac{3}{4}\right)^{7/3}\ \left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{1/3}}$$

1.12914709734423434359230339499 07

1,3,0,-6,-3,0,0,6,0,-6,0,0,6,6,0,0,-3,0,0,6,0,-12,0,0,0,3,0,-6,-6,0,0,6,0,0,0,0,6,6,0,-12,0,0,0,6,0,0,0,0,6,9,0,0,-6,0,0,0,0,-12,0,0,0,6,0,-12,-3,0,0,6,0,0,0,0,0,6,0,-6,-6,0,0,6,0

A226622 Expansion of phi(x^2) / f(-x) in powers of x where phi(), f() are Ramanujan theta functions.

$$\frac{e^{-\frac{\pi}{24}}\ 2^{3/8}\sqrt{2+\sqrt{2}}}{2}$$

1.05112067749834003733810367686 56

1,1,4,5,9,13,21,29,46,62,90,122,171,227,311,408,545,709,933,1198,1555,1980,2536, 3205,4063,5092,6400,7966,9928,12281,15198,18684,22979,28097,34346,41789, 50813,61527,74453,89757,108114,129809,155704,186221,222503

A226635 Expansion of psi(x^4) / f(-x) in powers of x where psi(), f() are Ramanujan theta functions.

$$\frac{e^{\frac{11\pi}{24}}\ 2^{3/8}\sqrt{2-\sqrt{2}}}{4}$$

1.04721312202398288937158475064 03

1,1,2,3,6,8,13,18,27,37,53,71,100,132,179,235,313,405,531,681,880,1119,1429,1801, 2280,2852,3575,4444,5529,6827,8436,10357,12716,15530,18958,23036,27978,33839, 40896,49254,59265,71083,85180,101781,121494,144659

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*A226862 Expansion of phi(x^3) * f(-x^4) in powers of x where phi(), f() are Ramanujan theta functions.*

$$\frac{27\sqrt{3}\ \Gamma\left(\frac{11}{12}\right)^4\Gamma\left(\frac{7}{12}\right)^9\left(\frac{5}{3}+\sqrt{3}\right)\Gamma\left(\frac{2}{3}\right)^5 e^{\frac{\pi}{6}}\ 2^{5/8}}{512\,\pi^2\,\Gamma\left(\frac{3}{4}\right)^{15}}$$

1.00015791111776727395567592860 40

1,0,0,2,-1,0,0,-2,-1,0,0,-2,2,0,0,0,-2,0,0,0,-1,0,0,2,0,0,0,0,2,1,0,0,0,2,0,0,-2,0,0,0,0,2,0,0, 0,0,0,0,2,1,0,0,-2,-2,0,0,2,-2,0,0,0,-3,0,0,-2,0,0,0,0,2,0,0,0,-2,0,0,0,2,0,0,-2,0,0

A227033 Expansion of (phi(x) / f(-x^4))^2 in powers of x where phi(), f() are Ramanujan theta functions.

$$2\,e^{-\frac{\pi}{3}}\ 2^{3/4}$$

1.18034883159140202616620194 21437

1,4,4,0,6,16,8,0,17,40,28,0,38,96,56,0,84,204,124,0,172,400,232,0,325,760,448,0,594, 1376,784,0,1049,2404,1388,0,1796,4096,2320,0,3005,6808,3864,0,4912,11072,6216, 0,7877,17688,9940,0,12430,27792,15488,0

A227175 Expansion of (phi(x) / f(-x^4))^4 in powers of x where phi(), f() are Ramanujan

theta functions.

$$8\, e^{-\frac{2\pi}{3}} \sqrt{2}$$

1.393223364239187941822372104792 1

1,8,24,32,28,80,192,192,134,408,864,800,568,1520,3072,2752,1809,4808,9456,8192, 5316,13616,26112,22144,13990,35376,66624,55584,34696,86016,159744,131392, 80724,198256,363720,295776,180068,436816,793344,638976,384940

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*A227317 Expansion of psi(x)^6 * phi(-x)^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{3\pi}{4}}\, \pi^2\, 2^{3/4}}{32\, \Gamma\left(\frac{3}{4}\right)^8}$$

1.076302044727513711505940512244 2

1,2,-5,-10,5,6,10,40,-20,-50,19,-52,-30,50,-25,74,97,50,-25,-140,69,-34,-100,-50,-185, -6,83,310,-60,-60,410,-128,145,-100,-245,250,-87,-90,-400,-410,-151,362,185,-50, 285,30,150,-240,500,370,-68,222,5,-190

A227398 Expansion of chi(x^3) / chi(x) in powers of x where chi() is a Ramanujan theta function.

$$\frac{e^{-\frac{\pi}{12}}\, 3^{1/12}\, \Gamma\left(\frac{2}{3}\right)^{2/3}\, \Gamma\left(\frac{3}{4}\right)^{2/3}\, \left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{2/3}}{2\, \pi^{1/3}\, \Gamma\left(\frac{11}{12}\right)^{2/3}}$$

0.958576023104804504040749746581 15

1,-1,1,-1,1,-2,2,-3,3,-3,4,-5,6,-7,8,-9,10,-12,14,-16,18,-20,23,-26,30,-34,38,-42,47,-53, 60,-67,74,-82,91,-102,114,-126,139,-153,169,-187,207,-228,250,-274,301,-331,364, -399,436,-476,520,-569,622,-679

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*A227695 Expansion of psi(x)^2 * phi(-x)^6 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{4}}\, \pi^2\, 2^{1/4}}{8\, \Gamma\left(\frac{3}{4}\right)^8}$$

0.632835716008746286303033010333 4

1,-10,37,-50,-30,128,-25,-34,-320,310,410,-370,-87,-410,320,30,500,384,-630,-640,-359,

300,-326,2560,-110,-1098,-1280,-370,1490,-1850,269,1500,1216,640,570,-3328,340,-2010,-1110,1790,768,3200,303,750,-1600,-442

A227696 Expansion of f(x^3)^3 / f(x) in powers of x where f() is a Ramanujan theta function.

$$\frac{e^{\frac{\pi}{3}}\ 3^{3/4}\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{11}{12}\right)^2\ \Gamma\left(\frac{7}{12}\right)^3\ \left(1+\sqrt{3}\right)}{24\ \Gamma\left(\frac{3}{4}\right)^7}$$

0.960527804218608845676197849163 55

1,-1,2,0,2,-1,2,0,1,-2,2,0,2,0,2,0,3,-2,0,0,2,-1,2,0,2,-2,2,0,0,0,4,0,2,-1,2,0,2,-2,0,0,1,-2,2,0,4,0,2,0,0,-2,2,0,2,0,2,0,3,-2,2,0,2,0,0,0,2,-3,2,0,0,-2,2,0,4,0,2,0,2,0,0,0,2,-2

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*A228745 Expansion of (phi(q)^4 + 7 * phi(-q)^4) / 8 in powers of q where phi() is a Ramanujan theta function.*

$$\frac{9\ \pi}{16\ \Gamma\left(\frac{3}{4}\right)^4}$$

0.783677210448193233291138521432 98

1,-6,24,-24,24,-36,96,-48,24,-78,144,-72,96,-84,192,-144,24,-108,312,-120,144,-192,288,-144,96,-186,336,-240,192,-180,576,-192,24,-288,432,-288,312,-228,480,-336,144,-252,768,-264,288,-468,576,-288,96,-342,744

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*A228746 Expansion of 8 * phi(q)^4 - 7 * phi(-q)^4 in powers of q where phi() is a Ramanujan theta function.*

$$\frac{9\ \pi}{2\ \Gamma\left(\frac{3}{4}\right)^4}$$

6.269417683585545866329108171463 8

1,120,24,480,24,720,96,960,24,1560,144,1440,96,1680,192,2880,24,2160,312,2400,144,3840,288,2880,96,3720,336,4800,192,3600,576,3840,24,5760,432,5760,312,4560,480,6720,144,5040,768,5280,288,9360,576,5760,96,6840

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*A228831 Expansion of psi(x)^2 * phi(-x^2)^4 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{4}}\ \pi^{3/2}\ 2^{1/4}}{4\ \Gamma\left(\frac{3}{4}\right)^6}$$

1.072293398255152871921867613421 2

1,2,-7,-14,18,32,-21,-14,16,-30,-14,-14,-15,66,48,82,-28,-160,66,-32,-95,36,-30,128,-14,-94,64,18,98,98,105,-92,-112,-96,-206,-64,-28,226,-126,-46,320,32,27,-142,208,-30,-60,64,-206,322,-16,-28,-48,-224

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*A228834 Expansion of phi(-x^2)^2 * psi(-x)^4 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\ \pi^{3/2}\ 2^{3/4}}{16\ \Gamma\left(\frac{3}{4}\right)^6}$$

0.831500906760022629026797163401 88

1,-4,2,8,-7,4,-14,-8,18,12,32,-40,-21,-8,-14,32,16,16,-30,56,-14,-28,-14,-16,-15,-72,66,8,48,52,82,-56,-28,-4,-160,-56,66,84,-32,16,-95,140,36,56,-30,-112,128,24,-14,-28,-94,-152,64,-156,18,120,98,-80

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*A228864 Expansion of 1 + q * (psi(-q^5) / psi(-q))^2 in powers of q where psi() is a Ramanujan theta function.*

$$\frac{32\ 2^{4/5}\ \Gamma\left(\frac{9}{10}\right)^4\ \Gamma\left(\frac{7}{10}\right)^4\ \left(5+\sqrt{5}\right)^4\ \left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^4\ \left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)^4}{625\ \Gamma\left(\frac{4}{5}\right)^8}$$

1.047213595499957939281834733746 1

1,1,2,3,6,11,16,24,38,57,82,117,168,238,328,448,614,834,1114,1480,1966,2592,3384,4398,5704,7361,9436,12045,15344,19470,24576,30922,38822,48576,60548,75259,93342,115454,142360,175104,214958,263262,321584,391993,476952

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*A230057 Expansion of (3 * phi(q^3)^4 - phi(q)^4) / 2 in powers of q where phi () is a Ramanujan theta function.*

$$\frac{\pi\ \Gamma\left(\frac{11}{12}\right)^2\ \Gamma\left(\frac{7}{12}\right)^2}{2\ \Gamma\left(\frac{3}{4}\right)^8}$$

0.804366663840069980380896535031 00

1,-4,-12,-4,-12,-24,-12,-32,-12,-4,-72,-48,-12,-56,-96,-24,-12,-72,-12,-80,-72,-32,-144,-96,-12,-124,-168,-4,-96,-120,-72,-128,-12,-48,-216,-192,-12,-152,-240,-56,-72,-168,-96,-176,-144,-24,-288,-192,-12,-228

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*A230278 Expansion of q^(-2/3) * eta(q^2)^10 / eta(q)^4 in powers of q.*

$$\frac{e^{\frac{2\pi}{3}}\ \pi^{3/2}\ \sqrt{2}}{16\ \Gamma\left(\frac{3}{4}\right)^6}$$

1.180324134037743377067688471391

1,4,4,0,0,-8,-16,0,-10,-20,16,0,0,40,0,0,39,28,0,0,0,-40,32,0,-70,0,-64,0,0,-80,0,0,49,-20,-40,0,0,112,80,0,-22,56,64,0,0,88,0,0,110,-140,0,0,0,0,-160,0,-128,52,0,0,0,-280,0,0,-130,28,156,0,0

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*A230280 Expansion of q^(-1/3) * eta(q)^4 * eta(q^2)^2 in powers of q.*

$$\frac{e^{\frac{\pi}{3}}\ \pi^{3/2}\ \sqrt{2}}{8\ \Gamma\left(\frac{3}{4}\right)^6}$$

0.828398235049099614781325719508 94

1,-4,0,16,-10,-16,0,0,39,0,0,-32,-70,64,0,0,49,40,0,-80,-22,-64,0,0,110,0,0,160,-128,0,0,0,-130,-156,0,112,182,0,0,0,121,0,0,-160,0,-128,0,0,-320,280,0,0,170,256,0,0,-69,0,0,-320,38,0,0,0,-190

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*A230442 Expansion of q^(-1/6) * eta(q)^2 * eta(q^2) in powers of q.*

$$\frac{e^{\frac{\pi}{6}}\ \pi^{3/4}\ 2^{3/4}}{4\ \Gamma\left(\frac{3}{4}\right)^3}$$

0.910163850660472899657078925035 02

1,-2,-2,4,1,2,-2,-4,-1,-4,6,0,0,6,4,-4,-4,2,-6,0,-5,2,0,0,4,2,6,4,-1,-6,2,0,4,-6,-8,-8,8,-2,-6,8,-4,4,4,4,4,-2,-2,8,-1,4,-4,0,-4,-8,-6,0,0,0,6,-8,-3,-2,6,-4,8,12,-2,-4,4,0,10,4,-4,-2,0,-8,-4,-2,4,4,-12,2,-4,0,-12,4,-4

A232166 Expansion of phi(x) / psi(x^2)^2 in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{4\, e^{-\frac{\pi}{2}}\, \sqrt{2}\, \Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

1.0823884256333913411976635027866

1,2,-2,-4,5,6,-10,-12,17,24,-30,-40,50,62,-80,-100,127,160,-196,-244,296,360,-442,-532,649,786,-940,-1132,1347,1600,-1910,-2260,2682,3176,-3734,-4400,5157,6032,-7066,-8240,9616,11202,-13002,-15096,17469,20192

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*A232635 Expansion of psi(x) * phi(x^2)^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$-\frac{e^{\frac{\pi}{8}}\, 2^{1/8}\, \Gamma\left(\frac{5}{8}\right)^3 \left(2+\sqrt{2}\right)^{3/2}}{16\, \pi^{3/4}\, \Gamma\left(\frac{7}{8}\right)^3 \left(\sqrt{2}-2\right)}$$

1.0511023494995222481488311933287

1,1,4,5,4,8,1,4,8,4,13,12,4,8,8,1,12,8,8,12,16,13,4,16,4,12,20,8,5,12,12,12,16,8,8,20,17,16,16,8,20,24,8,8,16,1,24,16,8,12,20,16,12,28,12,33,20,8,16,12,16,20,24,8,16,32,1,12,32,8,16,32,8

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*A232772 Expansion of (psi(x)^2 / (phi(-x) * phi(x^2)))^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$-\frac{e^{\frac{\pi}{2}}\, \left(\sqrt{2}-2\right)}{2}$$

1.4089562041402485272331325658120

1,8,30,80,197,472,1046,2160,4306,8360,15712,28656,51127,89552,153926,259904,432336,709728,1150142,1841200,2915546,4570904,7097622,10921184,16664073,25228176,37907758,56553936,83806768,123405752,180611558,262799248,380275604

A233006 Expansion of psi(x) / f(-x^6) in powers of x where psi(), f() are Ramanujan theta functions.

$$\frac{e^{-\frac{\pi}{8}}\, 2^{35/72}\, 3^{1/3}\, \Gamma\left(\frac{3}{4}\right)^{1/3}\, \Gamma\left(\frac{5}{6}\right)^{1/6}\, \left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{1/3}}{2\, \pi^{1/12}\, \Gamma\left(\frac{11}{12}\right)^{1/3}}$$

1.0432946310881420627207853443792

1,1,0,1,0,0,2,1,0,1,1,0,3,2,0,3,1,0,5,3,0,5,2,0,8,5,0,8,4,0,12,7,0,12,6,0,19,11,0,19,9,0,27,15,0,28,14,0,39,22,0,41,20,0,55,31,0,58,29,0,77,43,0,82,41,0,106,58,0,113,57,0,145,80,0,156

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*A233458 Expansion of q^(-1) * (phi(q^2) * phi(-q) / psi(-q^2)^2)^2 in powers of q where phi(), psi() are Ramanujan theta functions.*

$$e^{-\pi}\, 2^{3/4} \left(2+\sqrt{2}\right)^2$$

0.847183540016269257848158072398 82

1,-4,12,-32,66,-128,232,-384,639,-1024,1596,-2496,3774,-5632,8328,-12032,17283,-24576,34520,-48288,66882,-91904,125568,-170112,229244,-307200,409236,-542912,716412,-941056,1231048,-1602816,2079237,-2686976,3459264,-4439616

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*A236926 Number of integer solutions to a^2 + b^2 + c^2 + 3*d^2 = n.*

$$\frac{\sqrt{\pi}\,\sqrt{3}\,\Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{11}{12}\right)^2\Gamma\left(\frac{7}{12}\right)^3\sqrt{2}\,\left(1+\sqrt{3}\right)}{8\,\Gamma\left(\frac{3}{4}\right)^9}$$

1.282570088029055129120963173595 0

1,6,12,10,18,48,40,12,60,78,24,48,70,84,120,32,66,192,84,36,144,180,120,96,136,126,168,82,84,336,200,60,252,288,96,96,234,228,360,140,120,480,144,84,336,336,240,192,310,258,252,128,252,624,400,96,408,540,168

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*A236928 Number of integer solutions to a^2 + b^2 + c^2 + 2*d^2 = n.*

$$\frac{\Gamma\left(\frac{5}{8}\right)^4\left(3+2\sqrt{2}\right)\sqrt{2+\sqrt{2}}}{8\,\pi\,\Gamma\left(\frac{7}{8}\right)^4}$$

1.287152595250890761600398480945 9

1,6,14,20,30,40,36,48,62,42,72,100,68,120,112,48,126,108,98,180,136,160,180,144,132,126,216,200,240,280,112,192,254,120,252,320,210,360,324,144,264,252,288,420,340,280,336,288,260,342,294,360,408,520,360,240,496

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*A236929 Number of integer solutions to a^2 + b^2 + 5*c^2 + 5*d^2 = n.*

$$\frac{2^{1/5}\,\sqrt{5}\,\Gamma\left(\frac{3}{5}\right)^4\Gamma\left(\frac{7}{10}\right)^2\left(5+\sqrt{5}\right)^2\left(\sqrt{5}+1\right)^4}{12800\,\pi\,\Gamma\left(\frac{3}{4}\right)^4\Gamma\left(\frac{9}{10}\right)^2}$$

1.18034131053367287756279922049 02

1,4,4,0,4,12,16,16,4,20,44,16,16,24,32,64,4,8,52,16,44,32,48,48,16,84,56,64,32,56,176,32,4,64,72,112,52,56,80,64,44,72,128,32,48,188,96,48,16,68,244,128,56,56,160,176,32,128,120,112,176,88,128,144,4,200

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*A236930 Number of integer solutions to a^2 + b^2 + c^2 + 5*d^2 = n.*

$$\frac{\pi\, 5^{3/4} \sqrt{2}\, \left(5-\sqrt{5}\right)^{3/2} \left(\sqrt{5}+1\right)^3}{800\, \Gamma\left(\frac{3}{4}\right)^4}$$

1.28236350236812918364618842184 09

1,6,12,8,6,26,36,24,28,42,72,72,8,48,108,48,54,64,84,120,26,72,144,88,84,126,216,80,24,180,156,192,92,96,288,144,42,144,240,144,168,252,144,168,72,182,396,184,72,258,372,192,48,208,360,312,252,160,360,360,48

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*A239052 Sum of divisors of 4*n-2.*

$$\frac{3\, e^{\frac{\pi}{2}}\, \pi \sqrt{2}}{8\, \Gamma\left(\frac{3}{4}\right)^4}$$

3.55425950284633633580112128723 39

3,12,18,24,39,36,42,72,54,60,96,72,93,120,90,96,144,144,114,168,126,132,234,144,171,216,162,216,240,180,186,312,252,204,288,216,222,372,288,240,363,252,324,360,270,336,384,360,294,468,306,312,576

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*A239053 Sum of divisors of 4*n-1.*

$$\frac{e^{\frac{3\pi}{4}}\, \pi\, 2^{1/4}}{4\, \Gamma\left(\frac{3}{4}\right)^4}$$

4.37013108111732582050342461306 82

4,8,12,24,20,24,40,32,48,56,44,48,72,72,60,104,68,72,124,80,84,120,112,120,156,104,108,152,144,144,168,128,132,240,140,168,228,152,192,216,164,168,260,248,180,248,216,192,336,200,240,312,212,264,296

A239917 Theta series of 16-dimensional lattice OBW16, an overlattice of the Barnes-Wall lattice BW16.

$$\frac{\pi^4}{2\,\Gamma\left(\frac{11}{12}\right)^8\,\Gamma\left(\frac{7}{12}\right)^8}$$

1.059622799253278892411358367272 4

1,0,0,512,4320,18432,61440,193536,522720,1126400,2211840,4584960,8960640, 14764032,23224320,40221696,67154400,96546816,135168000,210332160, 319809600,423976960,550195200,801119232,1147643520,1436147712,1771683840, 2462397440,3371915520

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*A240948 Expansion of chi(x^5)^6 + x * chi(x)^6 in powers of x where chi() is a Ramanujan theta function.*

$$\frac{e^{-\frac{5\pi}{4}}\,2^{7/10}\,\Gamma\left(\frac{3}{5}\right)^4\,\Gamma\left(\frac{7}{10}\right)^2\left(5+\sqrt{5}\right)^2\left(\sqrt{5}+1\right)^4}{128\,\pi^2\,\Gamma\left(\frac{9}{10}\right)^2}$$

1.055729044601482711730995482917 9

1,1,6,15,26,57,102,172,276,453,743,1128,1698,2539,3780,5531,7882,11238,15918, 22259,30861,42438,58110,78909,106392,142872,190698,253179,334266,439581, 575956,750613,974316,1260336,1624702,2086806,2670162,3406695,4333590

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*A243763 Expansion of q * phi(q)^3 * psi(q^2)^4 in powers of q where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\pi}\,\pi^{7/4}}{32\,\Gamma\left(\frac{3}{4}\right)^7}$$

1.291968973828512968616767800889 9

1,6,16,32,60,92,128,192,253,316,432,512,604,792,896,1024,1272,1410,1584,1920,2104, 2236,2688,2944,3101,3732,3904,4096,4884,5080,5376,6144,6424,6776,7776,8096, 8188,9492,9856,10112,11664,11704,11952,13824,14100,14360

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*A244276 Expansion of q^(-1/4) * eta(q)^8 * eta(q^4)^2 / eta(q^2)^5 in powers of q.*

$$\frac{e^{\frac{\pi}{4}}\,\pi^{5/4}\,2^{3/4}}{8\,\Gamma\left(\frac{3}{4}\right)^5}$$

0.697902833655536811577639032881 28

1,-8,25,-40,48,-80,121,-120,144,-200,192,-248,337,-280,336,-440,384,-480,528,-480,

673,-720,624,-720,816,-760,864,-1080,864,-1000,1321,-1008,1200,-1360,1152,-1440,1536,-1400,1488,-1720,1536,-1760,2185,-1560,1872

A245643 Expansion of eta(q)^6 * eta(q^2) / eta(q^4)^2 in powers of q.

$$\frac{\pi^{5/4}}{2\,\Gamma\left(\frac{3}{4}\right)^5}$$

0.756812624164848596027345128195 95

1,-6,8,16,-38,-16,48,64,-56,-150,112,112,-112,-80,160,192,-294,-288,248,304,-272,-160,368,320,-336,-726,400,448,-448,-240,544,640,-568,-864,736,608,-950,-400,656,832,-784,-1152,864,1008,-784,-496,1184,896,-1136

A245668 Expansion of (chi(q^3) * psi(-q))^3 in powers of q where chi(), psi() are Ramanujan theta functions.

$$\frac{\Gamma\left(\frac{2}{3}\right)^2 \sqrt{2}\; 3^{1/4} \left(1+\sqrt{3}\right)^2}{16\,\Gamma\left(\frac{3}{4}\right) \pi^{1/4}\, \Gamma\left(\frac{11}{12}\right)^2}$$

0.875870296570091720022099317462 00

1,-3,3,-1,-3,6,-3,0,3,3,-12,6,-1,-12,12,0,-3,12,9,-12,6,-6,-12,0,-3,-15,18,5,0,18,-6,0,3,-6,-24,12,3,-12,18,0,-12,24,-6,-12,6,18,-24,0,-1,-27,21,-6,-12,18,15,0,12,-6,-12,18,0,-36,24,0,-3,24,-12

A245669 Expansion of q * f(q, q^5)^3 in powers of q where f() is Ramanujan's two-variable theta function.

$$\frac{e^{\pi}\, \pi^{9/4}\, 3^{3/4} \left(\sqrt{3}-1\right)^3}{27\,\Gamma\left(\frac{2}{3}\right)^3 \Gamma\left(\frac{7}{12}\right)^3}$$

1.135325274567724174179627006 3122

1,3,3,1,0,3,6,3,3,6,6,3,0,6,6,1,6,9,6,0,0,12,12,3,7,6,9,6,0,12,6,3,6,6,12,3,0,12,12,6,6,12,18,6,0,12,12,3,7,15,12,0,0,9,12,6,12,18,6,6,0,18,18,1,12,12,18,6,0,12,12,9,12,18,15,6,0,18

A246584 Number of overcubic partitions of n.

$$\frac{2^{3/8}\, \Gamma\left(\frac{3}{4}\right)^2}{\sqrt{\pi}}$$

1.098699439578731927866533322560 9

1,2,6,12,26,48,92,160,282,470,784,1260,2020,3152,4896,7456,11290,16836,24962, 36556,53232,76736,110012,156384,221156,310482,433776,602200,832224,1143696, 1565088,2131072,2890266,3902344,5249356,7032576,9389022,12488368

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*A246608 Expansion of phi(-q) * phi(-q^4)^4 in powers of q where phi() is a Ramanujan theta function.*

$$-\frac{2^{3/4}\,\Gamma\left(\frac{5}{8}\right)^5\sqrt{2+\sqrt{2}}\,\left(\frac{3}{2}+\sqrt{2}\right)}{16\,\pi^{5/4}\,\Gamma\left(\frac{7}{8}\right)^5\left(\sqrt{2}-2\right)}$$

0.913553650716974723576197112662 56

1,-2,0,0,-6,16,0,0,8,-50,0,0,16,80,0,0,-38,-96,0,0,-16,160,0,0,48,-242,0,0,64,240,0,0,-56, -288,0,0,-150,400,0,0,112,-384,0,0,112,496,0,0,-112,-674,0,0,-80,560,0,0,160,-672,0, 0,192,880,0,0,-294

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*A246631 Number of integer solutions to x^2 + 2*y^2 + 2*z^2 = n.*

$$-\frac{2^{3/4}\,\Gamma\left(\frac{5}{8}\right)^3\left(2+\sqrt{2}\right)^{3/2}}{16\,\pi^{3/4}\,\Gamma\left(\frac{7}{8}\right)^3\left(\sqrt{2}-2\right)}$$

1.094565385513593309623369493529 6

1,2,4,8,6,8,8,0,12,10,8,24,8,8,16,0,6,16,12,24,24,16,8,0,24,10,24,32,0,24,16,0,12,16,16, 48,30,8,24,0,24,32,16,24,24,24,16,0,8,18,28,48,24,24,32,0,48,16,8,72,0,24,32,0,6,32, 32,24,48,32,16,0

A246712 Expansion of chi(x^2) / phi(x) in powers of x where phi(), chi() are Ramanujan theta functions.

$$\frac{e^{-\frac{\pi}{12}}\,2^{7/16}\,\Gamma\left(\frac{7}{8}\right)\pi^{1/4}\left(2-\sqrt{2}\right)^{1/4}}{\Gamma\left(\frac{5}{8}\right)}$$

0.922160666167756082960911137216 01

1,-2,5,-10,18,-32,55,-90,145,-228,351,-532,795,-1170,1703,-2452,3494,-4934,6910, -9598,13238,-18134,24680,-33390,44921,-60108,80029,-106044,139875,-183706, 240284,-313046,406319,-525490,677269,-870010,1114061,-1422210

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*A246752 Expansion of phi(-x) * chi(x) * psi(-x^3) in powers of x where phi(), psi(), chi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{3}}\ \pi\ 2^{1/4}\ \sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\ \left(\sqrt{3}-1\right)}{6\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{3}{4}\right)^3}$$

0.95305861004894765776518114212225

1,-1,-2,0,2,3,-2,0,1,-2,-2,0,2,0,-2,0,3,-2,0,0,2,3,-2,0,2,-2,-2,0,0,0,-4,0,2,-1,-2,0,2,6,0,0,1,-2,-2,0,4,0,-2,0,0,-2,-2,0,2,0,-2,0,3,-2,-2,0,2,0,0,0,2,-3,-2,0,0,6,-2,0,4,0,-2,0,2,0

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*A246811 Expansion of phi(x)^2 * psi(x^4) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\ 2^{3/4}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(1+\sqrt{2}\right)}{16\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

1.18034471526786197803552600326874

1,4,4,0,5,12,4,0,8,12,8,0,5,16,12,0,8,24,4,0,16,12,12,0,9,24,12,0,8,36,12,0,16,12,16,0,8,28,16,0,17,36,8,0,24,24,8,0,8,36,28,0,16,36,12,0,16,24,20,0,13,24,24,0,24,60,8,0,16,36,16,0,16,28

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*A246814 Expansion of phi(-q) * phi(-q^4)^2 in powers of q where phi() is a Ramanujan theta function.*

$$\frac{2^{3/8}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(2+\sqrt{2}\right)^2}{16\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

0.91356639434766203645324653132156

1,-2,0,0,-2,8,0,0,-4,-10,0,0,8,8,0,0,6,-16,0,0,-8,16,0,0,-8,-10,0,0,0,24,0,0,12,-16,0,0,-10,8,0,0,-8,-32,0,0,24,24,0,0,8,-18,0,0,-8,24,0,0,-16,-16,0,0,0,24,0,0,6,-32,0,0,-16,32,0,0,-12

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*A246815 Expansion of phi(-x) * psi(-x^2)^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\ 2^{3/8}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(1+\sqrt{2}\right)}{16\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

0.91017019879957515621254411328525

1,-2,-2,4,3,-2,-6,4,4,-6,-4,4,7,-8,-2,8,8,-4,-10,4,4,-10,-10,8,9,-4,-6,12,8,-6,-10,12,4,-14,-8,4,16,-10,-8,8,9,-10,-12,12,8,-12,-12,4,20,-10,-6,20,8,-6,-10,12,8,-20,-18,8,11,-12,-12,16,8,-6,-20

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*A246816 Expansion of phi(q) * phi(-q^2) * phi(-q^4) in powers of q where phi() is a Ramanujan theta function.*

$$\frac{2^{5/16}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(2+\sqrt{2}\right)^{3/2}}{8\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3\ \left(2-\sqrt{2}\right)^{1/4}}$$

1.0823695524173598315644559258139

1,2,-2,-4,0,-4,0,8,-2,6,8,-4,0,-12,0,8,-4,8,-10,-12,0,-8,0,8,8,14,8,-16,0,-4,0,16,6,16,-16,-8,0,-20,0,8,-8,8,16,-20,0,-20,0,16,-8,18,-10,-8,0,-12,0,24,0,16,24,-12,0,-20,0,24,12,8,-16,-28,0

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*A246832 Expansion of psi(x) * psi(x^2) * phi(x^2) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{3\pi}{8}}\ 2^{7/8}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(2+\sqrt{2}\right)^2}{64\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

1.0491467866795106586101607325935

1,1,3,4,2,5,2,3,7,5,5,6,5,3,10,6,3,7,7,4,11,9,3,14,8,8,5,4,7,10,13,7,8,10,7,15,8,4,17,10,8,11,10,5,16,11,4,11,15,8,14,10,7,22,8,9,14,8,13,21,12,5,13,15,6,21,15,9,13,8,11,9,12,15,20,21

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*A246833 Expansion of psi(-x)^2 * psi(x^4) in powers of x where psi() is a Ramanujan theta function.*

$$\frac{e^{\frac{3\pi}{4}}\ 2^{1/4}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(1+\sqrt{2}\right)}{32\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

0.91528839273995931012055702847822

1,-2,1,-2,3,-2,4,-4,2,-2,5,-4,2,-6,3,-6,7,-2,5,-4,5,-6,6,-2,5,-10,3,-6,10,-4,6,-8,3,-8,7,-6,7,-6,4,-6,11,-6,9,-10,3,-6,14,-4,8,-10,8,-10,5,-6,4,-16,7,-4,10,-4,13,-14,7,-8,8,-6,10,-12,7,-12

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*A246835 Expansion of psi(-x)^2 * phi(x^2) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{4}}\ 2^{1/4}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(2+\sqrt{2}\right)^2}{32\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

0.91870368624082194984867305749531

1,-2,3,-6,4,-4,7,-2,8,-10,4,-10,9,-6,8,-10,4,-8,16,-8,9,-12,8,-12,20,-6,8,-10,8,-18,11,-12,8,-20,12,-8,20,-6,20,-26,8,-8,15,-10,16,-18,12,-16,20,-10,16,-16,8,-24,24,-8,21,-26,8,-20,20,-14,8,-28

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*A246836 Expansion of phi(x) * psi(-x^2)^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\ 2^{5/8}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(1+\sqrt{2}\right)}{16\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

1.0823808762758958685804077673858

1,2,-2,-4,3,2,-6,-4,4,6,-4,-4,7,8,-2,-8,8,4,-10,-4,4,10,-10,-8,9,4,-6,-12,8,6,-10,-12,4,14,-8,-4,16,10,-8,-8,9,10,-12,-12,8,12,-12,-4,20,10,-6,-20,8,6,-10,-12,8,20,-18,-8,11,12,-12,-16,8,6,-20

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*A246837 Expansion of phi(x) * psi(x) * psi(x^4) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{5\pi}{8}}\ 2^{1/8}\ \Gamma\left(\frac{5}{8}\right)^3\ \left(1+\sqrt{2}\right)}{16\ \pi^{3/4}\ \Gamma\left(\frac{7}{8}\right)^3}$$

1.1334755509879831212395152782231

1,3,2,1,5,5,3,5,4,4,6,6,3,5,9,6,10,4,3,13,4,5,9,8,5,8,12,4,13,10,7,14,5,5,11,8,9,12,6,7,15,15,6,13,12,6,13,6,7,21,17,6,13,8,10,12,14,9,8,15,6,22,8,9,22,14,10,11,15,11,22,16,6,8,14,11

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*A246926 Expansion of phi(x)^2 * chi(x) * psi(-x^3) in powers of x where phi(), psi(), chi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{3}}\ \pi^{5/4}\ \sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\sqrt{2}\ \left(\sqrt{3}-1\right)}{6\ \Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)^4}$$

1.231347919079111919623268408597 4

1,5,8,4,4,13,12,4,5,16,24,8,4,20,12,8,9,20,32,4,12,29,12,8,8,36,40,8,8,20,24,16,8,25,40,12,12,32,24,12,13,48,40,8,8,40,36,8,16,20,56,16,12,52,12,20,13,36,56,16,20,40,24,8,8,45,72,12,16,52

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*A246927 Expansion of psi(-q) * phi(q^3)^2 * chi(q^3) in powers of q where phi(), psi(), chi() are Ramanujan theta functions.*

$$\frac{3^{7/12}\sqrt{2}\ \Gamma\left(\frac{2}{3}\right)^{8/3}\Gamma\left(\frac{11}{12}\right)^{4/3}\Gamma\left(\frac{7}{12}\right)^4\left(7+4\sqrt{3}\right)}{8\ \pi^{7/12}\Gamma\left(\frac{3}{4}\right)^{25/3}\left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{4/3}}$$

0.957091466893922456628619336459 69

1,-1,0,4,-5,0,4,-8,0,2,-4,0,12,-4,0,16,-13,0,0,-12,0,8,-4,0,20,-5,0,4,-16,0,8,-24,0,8,-8,0,10,-4,0,32,-20,0,8,-12,0,0,-8,0,28,-9,0,24,-20,0,4,-32,0,8,-4,0,32,-12,0,16,-29,0,16,-12,0,16,-8

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*A246928 Number of integer solutions to x^2 + 3*y^2 + 3*z^2 = n.*

$$\frac{\Gamma\left(\frac{2}{3}\right)^2\Gamma\left(\frac{7}{12}\right)^2\left(2+\sqrt{3}\right)}{4\ \pi^{1/4}\Gamma\left(\frac{3}{4}\right)^5}$$

1.086785538575099192976754531607 5

1,2,0,4,10,0,4,16,0,2,8,0,12,8,0,16,26,0,0,24,0,8,8,0,20,10,0,4,32,0,8,48,0,8,16,0,10,8,0,32,40,0,8,24,0,0,16,0,28,18,0,24,40,0,4,64,0,8,8,0,32,24,0,16,58,0,16,24,0,16,16,0,0,16,0,28

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*A246950 Expansion of phi(-q) * phi(-q^4) in powers of q where phi() is a Ramanujan theta function.*

$$\frac{2^{15/16}\,\Gamma\left(\frac{5}{8}\right)^2\left(2+\sqrt{2}\right)}{8\sqrt{\pi}\,\Gamma\left(\frac{7}{8}\right)^2\left(2-\sqrt{2}\right)^{1/4}}$$

0.913572766229668339935806772182 75

1,-2,0,0,0,4,0,0,-4,-2,0,0,0,4,0,0,4,-4,0,0,0,0,0,0,0,-6,0,0,0,4,0,0,4,0,0,0,0,4,0,0,-8,-4,0,0,0,4,0,0,0,-2,0,0,0,4,0,0,0,0,0,0,0,4,0,0,4,-8,0,0,0,0,0,0,-4,-4,0,0,0,0,0,0,8,-2,0

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*A246953 Expansion of phi(-x) * psi(x^2)^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\,\pi^{3/4}\,2^{1/4}}{8\,\Gamma\left(\frac{3}{4}\right)^3}$$

0.916994449483549378540157277958 65

1,-2,2,-4,3,-2,6,-4,4,-6,4,-4,7,-8,2,-8,8,-4,10,-4,4,-10,10,-8,9,-4,6,-12,8,-6,10,-12,4,-14,8,-4,16,-10,8,-8,9,-10,12,-12,8,-12,12,-4,20,-10,6,-20,8,-6,10,-12,8,-20,18,-8,11,-12,12,-16,8,-6,20

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*A246954 Expansion of phi(-x) * psi(-x)^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{4}}\,\pi^{3/4}\,2^{1/4}}{4\,\Gamma\left(\frac{3}{4}\right)^3}$$

0.836185464938679836806499694973 28

1,-4,5,-4,8,-8,5,-12,8,-4,16,-12,9,-12,8,-12,16,-16,8,-16,17,-8,24,-8,8,-28,16,-12,16,-20,13,-24,24,-8,16,-16,16,-28,24,-12,32,-16,13,-28,8,-20,32,-32,8,-20,24,-16,40,-16,16,-32,25,-20,24,-24,24,-28

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*A246962 Expansion of psi(-x^3) * phi(-x^2) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{3\pi}{8}}\,\pi\,2^{1/8}\sqrt{3}\,\Gamma\left(\frac{11}{12}\right)\left(\sqrt{3}-1\right)}{6\,\Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)^3}$$

0.996184716446266360686027430494 67

1,0,-2,-1,0,2,0,0,2,-1,0,0,0,0,0,0,0,0,-2,-1,0,-2,2,0,0,0,0,0,2,2,0,0,1,0,0,0,0,-2,-2,0,2,0,0,-2,

0,0,0,-1,0,2,-2,0,0,0,0,0,0,0,0,0,0,2,0,0,2,1,0,2,0,0,-2,0,0,-2,2,0,0,-2,0,-2,0,0,-2

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*A254346 Expansion of f(x, x^5) * f(-x^6) / f(x)^2 in powers of x where f() is a Ramanujan theta function.*

$$\frac{e^{\frac{\pi}{2}}\, 2^{1/3}\, 3^{2/3}\, \Gamma\left(\frac{2}{3}\right)^{4/3}\, \Gamma\left(\frac{11}{12}\right)^{11/3}\, \Gamma\left(\frac{7}{12}\right)^{5}\, \left(11\sqrt{3}-19\right)\, \left(1+\sqrt{3}\right)^{5}}{128\, \Gamma\left(\frac{3}{4}\right)^{26/3}\, \pi^{2/3}}$$

0.962017684309039430164813365823 67

1,-1,3,-5,10,-15,26,-39,63,-92,140,-201,295,-415,591,-818,1140,-1554,2126,-2861,3855,-5126,6816,-8970,11793,-15372,20007,-25857,33356,-42771,54734,-69683,88530,-111968,141312,-177642,222842,-278557,347484,-432095,536230

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*A254525 Expansion of f(-x^2)^2 * f(-x, x^2) / f(x^3)^3 in powers of x where f(,) is Ramanujan's general theta function.*

$$\frac{3\, e^{-\frac{\pi}{6}}\, \Gamma\left(\frac{11}{12}\right)\, \Gamma\left(\frac{7}{12}\right)}{2\, \Gamma\left(\frac{3}{4}\right)^{2}}$$

0.954838417284789672519514969807 22

1,-1,-1,-1,0,3,4,-1,-6,-5,1,10,11,-4,-19,-17,4,31,31,-9,-50,-46,11,79,77,-21,-122,-112,28,183,173,-46,-273,-249,62,396,370,-98,-573,-521,130,815,751,-193,-1149,-1041,261,1599,1461,-373,-2214,-1998,498,3031

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*A255252 Expansion of psi(x) * psi(-x)^2 in powers of x where psi() is a Ramanujan theta function.*

$$\frac{e^{\frac{3\pi}{8}}\, \pi^{3/4}\, 2^{7/8}}{8\, \Gamma\left(\frac{3}{4}\right)^{3}}$$

0.954912129718574758016474605530 86

1,-1,-1,0,-2,3,2,1,-1,-1,1,-2,1,-3,-2,-2,3,1,-1,4,3,-1,-1,2,-4,4,1,0,-1,-2,-3,-3,-4,2,3,-3,0,0,5,2,0,-3,2,-1,4,1,0,1,3,0,-2,2,-1,-2,-4,-5,2,0,-7,3,-4,3,1,5,2,-5,-1,-1,-3,4,-1,3,4,1,4

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*A255257 Expansion of psi(x) * phi(-x^2)^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{8}}\ \pi^{3/4}\ 2^{1/8}}{2\ \Gamma\left(\frac{3}{4}\right)^3}$$

1.035516005793803687414635044326 6

1,1,-4,-3,4,0,1,4,0,4,-3,-4,-4,-8,8,1,-4,0,0,4,0,5,4,8,-4,-4,4,-8,-3,-4,4,-4,0,0,-8,4,1,0,-8,0,4,8,8,8,0,1,0,-8,8,-4,-4,-8,12,4,-12,1,-4,0,0,-4,-8,4,-8,0,0,-8,1,12,8,8,0,-8,8,0,8,4,0

A255317 Expansion of psi(-x^3)^2 / chi(-x) in powers of x where psi(), chi() are Ramanujan theta functions.

$$-\frac{e^{\frac{19\pi}{24}}\ \pi^{3/2}\ 2^{3/8}\ \Gamma\left(\frac{11}{12}\right)^2\ \left(-2+\sqrt{3}\right)}{6\ \Gamma\left(\frac{2}{3}\right)^2\ \Gamma\left(\frac{3}{4}\right)^4}$$

1.045081518784636187561191548232 0

1,1,1,0,0,1,1,2,1,0,0,1,1,1,0,1,0,0,2,1,1,1,1,1,0,1,1,0,1,0,1,0,1,1,0,1,1,1,1,0,2,2,0,1,1,0,1,0,1,0,0,2,0,1,0,0,0,2,2,0,1,1,2,1,0,1,0,1,0,1,1,1,1,0,0,2,2,1,0,0,0,0,1,1,0,0,1

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*A255318 Expansion of psi(x^3) * f(x^2, x^4) in powers of x where psi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{11\pi}{24}}\ \sqrt{\pi}\ 2^{3/8}\ \Gamma\left(\frac{11}{12}\right)^3\ \Gamma\left(\frac{7}{12}\right)^3}{8\ \Gamma\left(\frac{3}{4}\right)^8}$$

1.001951780575338131868963740175 0

1,0,1,1,1,1,0,1,0,1,1,1,0,2,1,0,0,1,1,1,1,0,1,1,1,0,0,1,1,0,2,0,2,2,1,0,0,0,0,1,1,0,1,0,2,1,0,2,1,1,0,0,1,1,1,2,0,0,0,1,1,1,1,1,0,1,0,1,0,1,2,0,0,2,1,1,0,1,0,1,1,0,1,1,1,0,1

A256552 Expansion of the unique weight 11/2 Gamma1(4) cusp form in powers of q.

$$\frac{e^{\pi}\ \pi^{11/4}}{64\ \Gamma\left(\frac{3}{4}\right)^{11}}$$

0.899988125684927834121281512163 39

1,-2,-8,16,20,-36,0,-32,-75,220,104,-128,-44,-392,0,256,232,474,-536,320,168,-1124,0,-576,245,852,1248,0,-1668,2040,0,-512,-1368,-2632,-560,-1200,4756,1428,0,3520,656,-3528,-3224,1664,-4740,2168,0,-2048,1449

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*A257651 Expansion of chi(x)^2 * f(-x^6)^3 in powers of x where chi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{2\pi}{3}}\ \pi^{5/4}\ \sqrt{3}\ \Gamma\left(\frac{11}{12}\right)^4\ \Gamma\left(\frac{7}{12}\right)^3\ \sqrt{2}\ \left(\sqrt{3}-1\right)}{24\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{3}{4}\right)^{10}}$$

1.088471243571701899119826146708 2

1,2,1,2,4,4,2,0,6,6,1,4,6,8,2,0,7,6,4,6,8,8,4,0,10,8,2,6,10,12,0,0,9,14,6,6,12,8,6,0,10,12, 1,10,14,8,4,0,16,14,6,6,8,8,16,8,0,12,14,2,10,12,16,0,0,20,10,7,8,20,20,6,0,10,16,4,10, 20,12

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*A257653 Expansion of f(-x^2)^3 * phi(x^3) / f(-x^6) in powers of x where phi(), f() are Ramanujan theta functions.*

$$\frac{\pi^{1/12}\ 3^{2/3}\ \Gamma\left(\frac{2}{3}\right)^{4/3}\ \Gamma\left(\frac{11}{12}\right)^{2/3}\ \Gamma\left(\frac{7}{12}\right)^2\ \left(2+\sqrt{3}\right)}{4\ \Gamma\left(\frac{3}{4}\right)^{17/3}\ \left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{2/3}}$$

0.994558205673940332560788482510 40

1,0,-3,2,0,-6,6,0,-3,12,0,-6,2,0,-12,0,0,-12,18,0,-6,12,0,0,6,0,-18,14,0,-18,12,0,-3,12,0, -12,12,0,-18,0,0,-24,12,0,-6,36,0,0,2,0,-21,12,0,-18,42,0,-12,12,0,-18,0,0,-24,0,0,-24, 24,0,-12,24,0

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*A258096 Expansion of psi(x^4) * phi(-x^4)^4 / phi(-x) in powers of x where phi(), psi() are Ramanujan theta function.*

$$\frac{e^{\frac{\pi}{2}}\ \Gamma\left(\frac{5}{8}\right)^4\ \left(3+2\sqrt{2}\right)\ \sqrt{2}\ \sqrt{2+\sqrt{2}}}{64\ \pi\ \Gamma\left(\frac{7}{8}\right)^4}$$

1.094569202637823897827535723520 0

1,2,4,8,7,10,12,8,18,18,16,24,21,20,28,32,20,32,36,24,42,42,28,48,57,36,52,40,36,58,60, 56,48,66,48,72,74,42,80,80,61,82,72,56,90,96,64,72,98,70,100,104,64,106,108,72, 114,96,84,144,111,84,104,128

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*A258228 Expansion of f(q) * f(-q^2) * chi(q^3) in powers of q where chi(), f() are Ramanujan theta functions.*

$$\frac{\pi^{1/6}\, 3^{1/3}\, \Gamma\left(\frac{2}{3}\right)^{2/3} \Gamma\left(\frac{11}{12}\right)^{1/3} \Gamma\left(\frac{7}{12}\right) \sqrt{2}\, \left(1+\sqrt{3}\right)}{4\, \Gamma\left(\frac{3}{4}\right)^{10/3} \left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{1/3}}$$

1.039481917313626831453813883419 8

1,1,-2,0,1,-4,0,0,-2,4,2,0,0,2,0,0,1,-4,4,0,-4,0,0,0,0,3,-4,0,0,-4,0,0,-2,0,2,0,4,2,0,0,2,-4, 0,0,0,8,0,0,0,1,-6,0,2,-4,0,0,0,0,2,0,0,2,0,0,1,-8,0,0,-4,0,0,0,4,2,-4,0,0,0,0,0,-4,4

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*A258292 Expansion of psi(-q)^2 * chi(q^3)^2 in powers of q where psi(), f() are Ramanujan theta functions.*

$$\frac{3^{2/3}\, \Gamma\left(\frac{2}{3}\right)^{4/3} \Gamma\left(\frac{11}{12}\right)^{2/3} \Gamma\left(\frac{7}{12}\right)^{2} \left(2+\sqrt{3}\right)}{4\, \pi^{1/6}\, \Gamma\left(\frac{3}{4}\right)^{14/3} \left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{2/3}}$$

0.915432932937079048693259920951 30

1,-2,1,0,-2,2,0,0,1,4,-4,0,0,-4,0,0,-2,2,4,0,2,0,0,0,0,-6,2,0,0,2,0,0,1,0,-4,0,4,-4,0,0,-4,2, 0,0,0,8,0,0,0,-2,3,0,-4,2,0,0,0,0,-4,0,0,-4,0,0,-2,4,0,0,2,0,0,0,4,-4,2,0,0,0,0,0,2,4

A258327 Expansion of phi(x^3) / f(-x^2) in powers of x where phi(), f() are Ramanujan theta functions.

$$\frac{2\sqrt{3}\, \Gamma\left(\frac{2}{3}\right) \Gamma\left(\frac{3}{4}\right)^{3} e^{-\frac{\pi}{12}}}{3\sqrt{\pi}\, \Gamma\left(\frac{11}{12}\right)^{2} \Gamma\left(\frac{7}{12}\right) \left(\sqrt{3}-1\right)}$$

1.002036138582090329729927358632 9

1,0,1,2,2,2,3,4,5,6,7,10,13,14,17,22,26,30,36,44,52,60,70,84,99,112,131,156,179,204, 236,274,315,358,409,472,539,608,692,792,897,1010,1144,1298,1464,1644,1849,2088, 2347,2622,2940,3304,3694,4118,4600,5142

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*A258591 Expansion of (phi(-x^2) * phi(-x^4)^2 / phi(-x)^3)^2 in powers of x where phi() is a Ramanujan theta function.*

$$1+\frac{\sqrt{2}}{2}$$

1.707106781186547524400844362104 8

1,12,80,400,1664,6056,19904,60320,171008,458428,1171552,2872368,6790656, 15544136,34568576,74901984,158507008,328277848,666568592,1329014992, 2605464320,5028397952,9563654976,17942323424,33232441344,60814373780,

110029864416

A258593 Expansion of (phi(x^2) * psi(x^2) / phi(-x)^2)^2 in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{2}} \sqrt{2} \left(2+\sqrt{2}\right)}{16}$$

1.45168996682694473899410523356 09

1,8,46,208,805,2776,8742,25584,70450,184232,460832,1108848,2578295,5814992,12760598,27317056,57174768,117223008,235818894,466154416,906606234,1736736024,3280271526,6114139616,11255369609,20478505104,36849912318,65619691088

A258747 Expansion of chi(-x) * f(x^3) * f(-x^6) in powers of x where chi(), f() are Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{3}} \sqrt{\pi}\ 2^{7/8}}{6\,\Gamma\left(\frac{11}{12}\right)\Gamma\left(\frac{7}{12}\right)}$$

0.95678591858469314997110405509385

1,-1,0,0,0,-1,-2,2,1,0,0,2,0,0,-2,0,1,0,0,0,0,-1,-2,0,2,-2,0,2,0,-2,0,0,2,-1,0,0,0,0,0,2,3,0,0,0,0,-2,-2,0,0,0,0,0,0,0,-2,2,1,-2,0,2,0,0,-4,0,2,-1,0,0,0,0,-2,2,0,0,0,2,0,0,0,0,2

A258764 Expansion of chi(-x^2) * psi(-x^3)^2 in powers of x where psi(), chi() are Ramanujan theta functions.

$$-\frac{e^{\frac{2\pi}{3}}\ \pi^{3/2}\ 2^{7/8}\ \Gamma\left(\frac{11}{12}\right)^2 \left(-2+\sqrt{3}\right)}{6\,\Gamma\left(\frac{2}{3}\right)^2 \Gamma\left(\frac{3}{4}\right)^4}$$

0.99797145963658385731963489791912

1,0,-1,-2,0,2,0,0,0,0,-1,0,2,2,-2,0,1,0,0,-2,0,0,-2,0,0,0,0,-2,2,2,0,0,1,0,0,-2,0,2,0,0,0,0,-1,-2,2,2,0,0,2,0,-2,0,0,0,-2,0,0,0,-2,-2,0,0,0,0,2,0,-1,0,0,4,0,0,0,0,0,-2,0,2,-2,0,3

A258770 Expansion of f(-x^2)^4 * psi(-x^3) in powers of x where psi(), f() are Ramanujan theta functions.

$$-\frac{27\, e^{\frac{17\pi}{24}}\sqrt{2}\,\Gamma\left(\frac{2}{3}\right)^{16}\Gamma\left(\frac{7}{12}\right)^{11/2}\left(11\sqrt{3}+19\right)}{16384\,\pi^{27/4}\,\Gamma\left(\frac{11}{12}\right)^{21/2}\left(-2+\sqrt{3}\right)\sqrt{\sqrt{2}\,\left(\sqrt{3}-1\right)}}$$

0.99245715851804356013179476560189

1,0,-4,-1,2,4,8,-2,-5,-9,-4,9,-10,2,8,2,9,-3,1,-5,10,10,-14,-22,-2,7,-9,10,-4,-10,-17,16,18,18,31,-10,10,-20,9,6,-31,-14,0,-9,-28,-23,-7,36,-8,25,24,-28,18,41,0,6,-13,2,9,5,38,-43,-18,-35,6,-1

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*A258771 Expansion of psi(-x) * phi(x)^4 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{8}}\,\pi^{5/4}\,2^{1/4}}{2\,\Gamma\left(\frac{3}{4}\right)^5}$$

1.33288570713162085277985120392 16

1,7,16,7,-16,0,17,-48,-64,16,1,-16,16,-32,32,55,-48,64,64,16,128,-9,-80,-32,16,48,-80,96,49,-144,-16,-144,-64,-64,-96,144,33,-64,-160,0,112,32,32,-96,128,-25,0,32,-160,304,144,96,144,-48,48,119,16,-256

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*A258779 Expansion of (f(-x) * phi(x))^2 in powers of x where phi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{12}}\,\pi\,2^{1/4}}{2\,\Gamma\left(\frac{3}{4}\right)^4}$$

1.07631705864560326480350688224 44

1,2,-5,-10,9,14,-10,0,14,2,-11,-32,0,14,-9,26,2,0,16,-22,14,0,0,26,-17,-32,-22,-10,-34,14,45,38,0,-34,38,-22,2,0,-10,64,-20,0,0,0,-23,-46,16,0,-46,-32,26,-10,25,18,0,38,50,0,0,-22,-80,50,0,26,2

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*A258831 Expansion of (psi(-x^3) * f(-x, x^2))^2 in powers of x where psi(), f(,) are Ramanujan theta functions.*

$$\frac{e^{\frac{5\pi}{6}}\,\pi}{18\,\Gamma\left(\frac{11}{12}\right)^2\Gamma\left(\frac{7}{12}\right)^2}$$

0.91886796813523452421867336542317

1,-2,3,-4,5,-8,7,-8,9,-10,14,-12,16,-14,15,-20,17,-18,19,-24,26,-22,23,-28,25,-32,32,-28,29,-30,38,-32,33,-40,40,-44,42,-38,39,-40,57,-42,43,-44,45,-62,47,-56,49,-56,62,-52,53,-60,64,-68,64,-58,59,-60

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*A258832 Expansion of psi(-x^3) * f(-x, x^2) in powers of x where psi(), f(,) are Ramanujan theta functions.*

$$\frac{e^{\frac{5\pi}{12}} \sqrt{\pi}\ 3^{1/4}}{6\ \Gamma\left(\frac{3}{4}\right)^2}$$

0.958576010619520210940219583452 62

1,-1,1,-1,1,-2,0,-1,1,-1,2,-1,1,0,1,-2,1,0,2,-1,1,-1,1,-1,1,-2,1,0,0,-1,2,-2,1,-1,0,-3,0,-1,1,0,2,0,1,-1,2,-2,1,-1,0,-1,1,-1,2,-1,1,0,1,-2,1,0,3,0,0,-1,1,-2,1,-1,1,-1,3,-1,0,-1,0,-2,0

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*A258835 Expansion of psi(x)^3 * psi(x^4) in powers of x where psi() is a Ramanujan theta function.*

$$\frac{e^{\frac{7\pi}{8}}\ 2^{1/8}\ \Gamma\left(\frac{5}{8}\right)^4\ \left(3+2\sqrt{2}\right)\sqrt{2-\sqrt{2}}}{64\ \pi\ \Gamma\left(\frac{7}{8}\right)^4}$$

1.135592259048904320475559648 5

1,3,3,4,7,6,9,13,9,10,15,15,13,19,18,16,30,21,19,27,21,31,31,24,25,39,33,28,48,30,35,54,33,34,52,42,45,51,39,45,55,51,50,70,45,46,78,48,54,80,57,63,78,54,55,75,84,58,79,60,61,117,63,74,87,72,81

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*A259491 Expansion of (eta(q)^2 * eta(q^2) * eta(q^4)^3 / eta(q^8)^2)^2 in powers of q.*

$$-\frac{\Gamma\left(\frac{5}{8}\right)^8\ \left(17+12\sqrt{2}\right)}{64\ \pi^2\ \Gamma\left(\frac{7}{8}\right)^8\ \left(\sqrt{2}-2\right)}$$

0.828380901730551707386952344911 80

1,-4,0,16,-16,8,0,-96,112,44,0,176,-448,-88,0,-32,1136,-200,0,-176,-2016,384,0,224,3136,484,0,-608,-5504,-792,0,640,9328,-704,0,192,-12112,648,0,352,14112,792,0,-208,-21312,-88,0,-2112,31808,-932,0,800

A259529 Expansion of psi(-x^3)^2 / psi(-x) in powers of x where psi() is a Ramanujan

theta function.

$$-\frac{e^{\frac{5\pi}{8}}\,\pi^{5/4}\,2^{1/4}\,\Gamma\left(\frac{11}{12}\right)^2\left(-2+\sqrt{3}\right)}{3\,\Gamma\left(\frac{2}{3}\right)^2\,\Gamma\left(\frac{3}{4}\right)^3}$$

1.045085163367102105734480821057 8

1,1,1,0,1,2,2,2,3,3,3,3,5,6,5,6,8,9,10,10,13,15,15,17,20,23,24,25,30,34,36,39,45,50,53, 57,65,73,77,83,94,104,110,118,132,145,154,166,185,201,214,230,253,276,293,316, 346,375,399,427,467,505,537,575

A259538 Expansion of psi(-x)^2 / psi(-x^3) in powers of x where psi() is a Ramanujan theta function.

$$\frac{e^{-\frac{\pi}{8}}\,2^{1/4}\,\sqrt{3}\,\Gamma\left(\frac{2}{3}\right)\left(1+\sqrt{3}\right)}{4\,\pi^{1/4}\,\Gamma\left(\frac{11}{12}\right)}$$

0.915359069862933022703933839313 32

1,-2,1,-1,0,1,2,-2,1,1,-2,0,1,-4,1,1,-2,2,3,-2,2,1,-4,2,2,-6,3,2,-4,3,2,-6,3,4,-8,3,5,-10,5,3, -10,6,7,-10,5,8,-12,6,7,-16,8,7,-16,9,9,-18,10,10,-22,10,11,-26,13,12,-26,15,14,-28, 15,17,-34

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*A259664 Expansion of f(-x^6) / (f(-x^2)^3 * phi(-x)^2) in powers of x where phi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{2}}\,\sqrt{3}\,\Gamma\left(\frac{11}{12}\right)^4\,\Gamma\left(\frac{7}{12}\right)^3\left(\sqrt{3}-1\right)}{6\,\Gamma\left(\frac{2}{3}\right)\,\Gamma\left(\frac{3}{4}\right)^5}$$

1.204890363348148919590551472466 2

1,4,15,44,121,300,707,1572,3366,6932,13865,26952,51187,95080,173280,310172, 546438,948360,1623737,2744840,4585920,7577684,12393330,20073648,32219481, 51270912,80927964,126758160,197096678,304339020,466829342,711555332, 1078037580

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*A259743 Expansion of f(-x)^3 * psi(x^4) in powers of x where psi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{5\pi}{8}}\ 2^{7/8}\ \Gamma\left(\frac{5}{8}\right)^4\ \left(3+2\sqrt{2}\right)\sqrt{2-\sqrt{2}}}{64\ \pi\ \Gamma\left(\frac{7}{8}\right)^4}$$

0.870764733854003101459370152 47262

1,-3,0,5,1,-3,-7,5,0,0,2,0,1,-3,9,-6,0,0,-7,-11,0,13,9,0,1,10,0,-6,-15,0,-7,0,-15,13,9,0,17,0,0,-11,3,-3,0,5,0,-6,-7,0,17,-19,9,0,-15,0,0,10,0,-19,0,21,18,10,0,5,0,0,-30,21,-15,-19,-14,0

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*A259790 Expansion of f(-x)^3 * phi(x^2) in powers of x where phi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{8}}\ 2^{7/8}\ \Gamma\left(\frac{5}{8}\right)^4\ \left(3+2\sqrt{2}\right)\sqrt{2+\sqrt{2}}}{32\ \pi\ \Gamma\left(\frac{7}{8}\right)^4}$$

0.874013892436042365267515126 80009

1,-3,2,-1,0,10,-7,0,-12,-6,9,10,18,0,-14,-11,0,-22,20,-6,0,23,0,4,-14,0,0,0,3,26,-30,0,2,-28,0,10,-13,0,20,26,0,0,18,0,34,-19,-30,-60,0,0,2,-6,0,-2,34,21,-14,42,0,0,-12,0,0,4,0,-22,-23,0,-12

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*A260145 Expansion of x * (psi(x^4) / phi(x))^2 in powers of x where phi(), psi() are Ramanujan theta functions.*

$$-\frac{e^{\pi}\left(\sqrt{2}-2\right)}{16}$$

0.847218993848433261498636437 45475

1,-4,12,-32,78,-176,376,-768,1509,-2872,5316,-9600,16966,-29408,50088,-83968,138738,-226196,364284,-580032,913824,-1425552,2203368,-3376128,5130999,-7738136,11585208,-17225472,25444278,-37350816,54504160,-79085568,114133296

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*A260158 Expansion of psi(x)^4 * psi(-x^3) / f(x) in powers of x where psi, f() are Ramanujan theta functions.*

$$\frac{e^{\frac{5\pi}{6}}\ 3^{1/4}\ \pi^{3/2}\ \sqrt{2}\ \left(\sqrt{3}-1\right)}{24\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{3}{4}\right)^3\ \Gamma\left(\frac{7}{12}\right)}$$

1.137621107097992627576094 1058988

1,3,4,6,7,6,10,12,13,15,14,18,18,21,22,18,25,27,28,24,26,33,34,42,37,30,36,42,43,45,38,

48,49,42,54,42,56,57,58,60,43,63,64,66,67,63,70,60,73,84,62,78,79,72,72,66,90,87,88,90,74,78,98,96,97,78

A260162 Expansion of phi(-x) / psi(-x^3) in powers of x where psi(), phi() are Ramanujan theta functions.

$$\frac{e^{-\frac{3\pi}{8}}\ \sqrt{3}\ \Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)\sqrt{2}\ \left(1+\sqrt{3}\right)}{2\sqrt{\pi}\ \Gamma\left(\frac{11}{12}\right)}$$

0.91365286950239255786176004915335

1,-2,0,1,0,0,1,0,0,0,-2,0,1,-2,0,2,0,0,1,0,0,1,-2,0,2,-4,0,3,-2,0,2,0,0,1,-4,0,4,-6,0,5,-2,0,3,0,0,3,-6,0,6,-10,0,8,-4,0,5,-2,0,4,-10,0,9,-14,0,12,-6,0,8,-2,0,7,-14,0,14,-22,0,18,-10

A260163 Expansion of f(x^2)^2 / f(-x) in powers of x where f() is a Ramanujan theta function.

$$\frac{e^{\frac{\pi}{8}}\ 2^{3/4}\ \Gamma\left(\frac{5}{8}\right)\ \left(2+\sqrt{2}\right)}{8\ \pi^{1/4}\ \Gamma\left(\frac{7}{8}\right)}$$

1.0511170118678966465534600735633

1,1,4,5,8,12,17,24,36,48,65,88,116,152,200,257,328,420,532,668,840,1045,1296,1604,1972,2416,2952,3592,4357,5272,6356,7640,9168,10964,13080,15576,18497,21920,25932,30604,36048,42392,49752,58288,68184,79617,92820

A260164 Expansion of f(-x^8)^2 / f(-x) in powers of x where f() is a Ramanujan theta function.

$$\frac{e^{\frac{5\pi}{8}}\ 2^{1/4}\ \Gamma\left(\frac{5}{8}\right)}{8\ \pi^{1/4}\ \Gamma\left(\frac{7}{8}\right)}$$

1.0472094700205707355064531575846

1,1,2,3,5,7,11,15,20,28,38,50,67,87,113,146,186,236,299,375,468,583,721,888,1093,1336,1628,1980,2397,2894,3487,4186,5013,5991,7139,8488,10073,11924,14086,16613,19551,22965,26934,31527,36844,42994,50085,58258

A260221 Expansion of phi(x^3)^2 / f(x) in powers of x where phi(), f() are Ramanujan

theta functions.

$$\frac{2^{1/4}\,\Gamma\left(\frac{2}{3}\right)^2\,\Gamma\left(\frac{7}{12}\right)^2\,\left(2+\sqrt{3}\right)\,e^{-\frac{\pi}{24}}}{4\,\pi^{3/4}\,\Gamma\left(\frac{3}{4}\right)^3}$$

0.96060532460538481078504884036632

1,-1,2,1,1,1,3,1,2,2,2,4,5,3,7,8,7,7,9,10,11,12,14,17,19,18,24,26,26,31,36,38,41,45,50,57,61,63,75,83,86,93,106,115,123,134,146,162,173,183,206,225,237,257,283,304,327,350,380,416,443,471,516,557

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*A260295 Expansion of f(-x^2)^3 * f(-x^6)^3 / f(-x)^2 in powers of x where f() is a Ramanujan theta function.*

$$\frac{e^{\frac{11\,\pi}{12}}\,\pi^{3/2}\,2^{1/4}\,\sqrt{3}\,\Gamma\left(\frac{11}{12}\right)^4\,\Gamma\left(\frac{7}{12}\right)^3\,\left(\sqrt{3}-1\right)}{48\,\Gamma\left(\frac{2}{3}\right)\,\Gamma\left(\frac{3}{4}\right)^{11}}$$

1.0905039083727564123479581731975

1,2,2,4,5,6,7,6,9,8,11,14,10,14,15,16,14,14,19,20,21,22,21,20,28,26,24,22,29,30,26,32,26,38,35,36,37,28,39,40,41,42,34,40,43,42,47,42,49,50,56,44,42,54,55,62,57,46,50,60,56,62,50,70,60,56,74,54

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*A260308 Expansion of psi(x) * phi(x^3) in powers of x where phi(), psi() are Ramanujan theta functions.*

$$\frac{e^{\frac{\pi}{8}}\,2^{5/8}\,\Gamma\left(\frac{2}{3}\right)^5\,\Gamma\left(\frac{7}{12}\right)^{3/2}\,3^{1/8}\,\left(5\,\sqrt{3}+9\right)}{32\,\Gamma\left(\frac{11}{12}\right)^{7/2}\,\pi^2}$$

1.0434630110395058900130685715615

1,1,0,3,2,0,3,0,0,2,1,0,2,4,0,3,0,0,4,0,0,1,2,0,2,0,0,4,3,0,2,2,0,4,0,0,1,2,0,2,2,0,2,0,0,1,0,0,8,2,0,2,0,0,2,3,0,2,4,0,0,0,0,4,0,0,1,2,0,4,0,0,2,0,0,2,4,0,5,0,0,4,2,0,2,2,0

A260313 Expansion of phi(x)^2 / psi(x) in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{e^{-\frac{\pi}{8}}\,\pi^{1/4}\,2^{5/8}}{\Gamma\left(\frac{3}{4}\right)}$$

1.131358842968339272330647864697 5

1,3,1,-2,3,4,-3,-3,2,7,0,-9,4,9,-5,-11,6,18,-7,-18,9,20,-12,-27,14,36,-11,-42,18,46,-24,-54,23,69,-27,-79,37,90,-44,-104,48,126,-52,-147,65,162,-78,-189,85,225,-91,-254,114,286,-136,-327,142,381,-159

A260314 Expansion of phi(x)^2 / phi(-x^2) in powers of x where phi() is a Ramanujan theta function.

$$\frac{\pi^{1/4}\, 2^{1/8}}{\Gamma\left(\frac{3}{4}\right)}$$

1.184765562664831770580726748984 0

1,4,6,8,16,24,32,48,66,92,128,168,224,296,384,496,640,816,1030,1304,1632,2032,2528,3120,3840,4716,5760,7008,8512,10296,12416,14944,17922,21440,25600,30480,36208,42936,50784,59952,70656,83088,97536,114312,133728

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*A260514 Expansion of phi(x) * chi(x^2)^4 in powers of x where phi(), chi() are Ramanujan theta functions.*

$$-\frac{e^{-\frac{\pi}{3}}\, \Gamma\left(\frac{5}{8}\right) \sqrt{2+\sqrt{2}}}{\pi^{1/4}\, \Gamma\left(\frac{7}{8}\right) \left(\sqrt{2}-2\right)}$$

1.094573019828612952452722281424 0

1,2,4,8,8,12,16,16,29,36,44,64,72,88,112,128,162,202,244,304,352,420,496,576,703,820,968,1152,1320,1544,1792,2048,2405,2782,3204,3728,4240,4856,5568,6320,7259,8276,9416,10752,12144,13760,15568,17536,19875,22416

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*A260515 Expansion of phi(x^2) * chi(x)^4 in powers of x where phi(), chi() are Ramanujan theta functions.*

$$\frac{e^{-\frac{\pi}{6}}\, 2^{1/4}\, \Gamma\left(\frac{5}{8}\right) \left(2+\sqrt{2}\right)}{2\, \pi^{1/4}\, \Gamma\left(\frac{7}{8}\right)}$$

1.189194673514618873545513918853 3

1,4,8,16,29,44,72,112,162,244,352,496,703,968,1320,1792,2405,3204,4240,5568,7259,9416,12144,15568,19875,25260,31944,40256,50523,63140,78672,97680,120870,149148,183480,225056,275350,335984,408920,496544,601514,727044

A260599 Expansion of psi(x^4) / chi(-x)^2 in powers of x where psi(), chi() are Ramanujan theta functions.

$$\frac{e^{\frac{7\pi}{12}}\,\Gamma\left(\frac{5}{8}\right)\sqrt{2}}{8\,\pi^{1/4}\,\Gamma\left(\frac{7}{8}\right)}$$

1.092551820697524897320406015422 0

1,2,3,6,10,16,25,38,55,80,115,160,223,306,415,560,747,988,1301,1700,2206,2850,3661, 4676,5950,7536,9500,11936,14936,18620,23141,28662,35386,43566,53480,65466, 79937,97356,118277,143370,173391,209232,251966,302806

A261320 Expansion of (phi(q^3) / phi(q))^2 in powers of q where phi() is a Ramanujan theta function.

$$\frac{\Gamma\left(\frac{2}{3}\right)^2\,\Gamma\left(\frac{7}{12}\right)^2\,\left(2+\sqrt{3}\right)}{4\,\pi\,\Gamma\left(\frac{3}{4}\right)^2}$$

0.847486585612470826090408660680 65

1,-4,12,-28,60,-120,228,-416,732,-1252,2088,-3408,5460,-8600,13344,-20424,30876, -46152,68268,-100016,145224,-209120,298800,-423840,597108,-835804,1162824, -1608508,2212896,-3028632,4124664,-5590976,7544604,-10137264,13565016

A261321 Expansion of (phi(q) / phi(q^3))^2 in powers of q where phi() is a Ramanujan theta function.

$$-\frac{2\,\pi\,\sqrt{3}\;\Gamma\left(\frac{11}{12}\right)^2\,\left(-2+\sqrt{3}\right)}{\Gamma\left(\frac{2}{3}\right)^2\,\Gamma\left(\frac{3}{4}\right)^2}$$

1.179959679570985917493649005890 8

1,4,4,-4,-12,-8,12,32,20,-28,-72,-48,60,152,96,-120,-300,-184,228,560,344,-416,-1008, -608,732,1756,1048,-1252,-2976,-1768,2088,4928,2900,-3408,-7992,-4672,5460, 12728,7408,-8600,-19944,-11544,13344,30800,17744,-20424

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*A261325 Expansion of f(x^3, x^3) * f(x, x^5) / f(x, x)^2 in powers of x where f(,) is Ramanujan's general theta function.*

$$\frac{e^{\frac{\pi}{3}}\,\Gamma\left(\frac{11}{12}\right)^3\,\Gamma\left(\frac{7}{12}\right)^3}{4\,\Gamma\left(\frac{3}{4}\right)^6}$$

0.88396725791824686753037573112380

1,-3,8,-18,38,-75,140,-252,439,-744,1232,-1998,3182,-4986,7700,-11736,17673,-26322,38808,-56682,82070,-117867,167996,-237744,334202,-466836,648224,-895014,1229148,-1679436,2283568,-3090672,4164578,-5587941,7467464,-9940482

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*A261326 Expansion of f(-x^2, -x^4)^2 / (f(x^3, -x^6) * f(-x, x^2)) in powers of x where f(,) is Ramanujan's general theta function.*

$$\frac{\pi^{2/3}\,3^{1/3}\,\Gamma\left(\frac{3}{4}\right)^{26/3}\left(\sqrt{2}\,\left(1+\sqrt{3}\right)\right)^{11/3}\sqrt{2}}{\Gamma\left(\frac{2}{3}\right)^{4/3}\,\Gamma\left(\frac{11}{12}\right)^{11/3}\left(66\sqrt{3}+114\right)\,\Gamma\left(\frac{7}{12}\right)^5}$$

1.0391464557735634224313120482322

1,1,-2,-4,-3,4,12,8,-10,-28,-18,24,60,38,-48,-120,-75,92,228,140,-172,-416,-252,304,732,439,-524,-1252,-744,884,2088,1232,-1450,-3408,-1998,2336,5460,3182,-3704,-8600,-4986,5772,13344,7700,-8872,-20424,-11736

A261369 Expansion of (psi(-x^3) / f(x))^2 in powers of x where psi(), f() are Ramanujan theta functions.

$$-\frac{e^{\frac{2\pi}{3}}\,\pi\,\Gamma\left(\frac{11}{12}\right)^2\left(-2+\sqrt{3}\right)}{3\,\Gamma\left(\frac{2}{3}\right)^2\,\Gamma\left(\frac{3}{4}\right)^2}$$

0.92201826711722532999242747285392

1,-2,5,-12,24,-46,86,-152,262,-442,725,-1168,1852,-2886,4436,-6736,10103,-14994,22040,-32092,46336,-66380,94378,-133256,186926,-260576,361126,-497716,682340,-930774,1263624,-1707672,2297737,-3078850,4109022,-5462924,7236280

A261394 Expansion of phi(q)^4 / phi(q^3) in powers of q where phi() is a Ramanujan theta function.

$$\frac{\pi^{5/4}\,3^{1/4}\,\Gamma\left(\frac{11}{12}\right)\left(\sqrt{3}-1\right)}{\Gamma\left(\frac{2}{3}\right)\,\Gamma\left(\frac{3}{4}\right)^4}$$

1.392979104202287461711094918752

1,8,24,30,8,0,36,48,24,32,48,48,30,0,48,72,8,48,96,48,0,0,96,96,36,56,48,102,48,0,120,48,24,72,48,96,32,0,96,120,48,48,144,144,48,0,96,96,30,56,120,144,0,0,108,96,48,120,144,48,72,0,144,192,8,96

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*A261444 Expansion of f(x^3)^2 * f(-x^6)^2 / f(-x^2) in powers of x where f() is a Ramanujan theta function.*

$$\frac{e^{\frac{2\pi}{3}}\sqrt{3}\,\pi^{3/4}}{18\,\Gamma\left(\frac{3}{4}\right)^3}$$

1.002036119005073400651989804 2039

1,0,1,2,2,2,0,4,2,0,1,4,4,2,2,4,5,0,2,2,6,4,2,4,6,0,0,6,4,2,4,8,7,0,2,10,4,6,0,4,6,0,1,6,8,6,4,8,4,0,4,8,10,4,2,8,8,0,2,6,12,4,4,8,8,0,5,8,6,4,0,8,14,0,2,10,8,10,2,8,11,0,6,6,6

A261454 Expansion of a(x^2) / f(-x) in powers of x where a() is a cubic AGM theta function and f() is a Ramanujan theta function.

$$\frac{e^{-\frac{\pi}{24}}\,2^{17/24}\sqrt{\Gamma\left(\frac{5}{6}\right)}\,\Gamma\left(\frac{7}{12}\right)\left(1+\sqrt{3}\right)}{4\,\Gamma\left(\frac{3}{4}\right)^2}$$

1.058943133322093823043870905 7329

1,1,8,9,17,25,47,63,106,144,216,296,425,569,807,1064,1449,1905,2551,3304,4353,5592,7254,9247,11859,14978,19038,23872,30034,37433,46734,57854,71739,88305,108766,133191,163099,198697,242069,293535,355788,429609,518396

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*A261734 Expansion of Product_{k>=1} (1 + x^(4*k))/(1 + x^k).*

$$\frac{e^{\frac{\pi}{8}}\,3^{5/32}\,2^{13/16}\,\Gamma\left(\frac{5}{8}\right)^{5/4}\Gamma\left(\frac{11}{12}\right)^{5/8}\Gamma\left(\frac{7}{12}\right)^{5/8}\left(2+\sqrt{2}\right)^{1/4}}{\pi^{5/8}\,\Gamma\left(\frac{7}{8}\right)^{5/4}\left(\sqrt{2}\,\sqrt{2-\sqrt{2}}\right)^{3/4}\sqrt{\sqrt{2}\,\sqrt{2+\sqrt{2}}}\,\left(\sqrt{2}\,\left(1+\sqrt{3}\right)\right)^{5/8}\left(\sqrt{2}\,\left(\sqrt{3}-1\right)\right)^{5/8}}$$

0.956712061496081795335782825 72943

1,-1,0,-1,2,-2,1,-2,4,-4,3,-4,8,-8,6,-9,14,-14,12,-16,24,-25,22,-28,40,-42,38,-48,65,-68,64,-78,102,-108,104,-124,159,-168,164,-194,242,-256,254,-296,362,-385,386,-444,536,-570,576,-658,782,-832,848,-961

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*A261775 Expansion of Product_{k>=1} (1 - x^(8*k))/(1 - x^k).*

$$\frac{e^{\frac{7\pi}{24}}\ 2^{15/16}}{2\sqrt{\sqrt{2}\ \sqrt{2-\sqrt{2}}}\ \sqrt{\sqrt{2}\ \sqrt{2+\sqrt{2}}}\ \left(2+\sqrt{2}\right)^{1/4}}$$

1.047209470033306432863048567422 2

1,1,2,3,5,7,11,15,21,29,40,53,72,94,124,161,208,266,341,431,545,684,856,1064,1322, 1631,2009,2464,3014,3672,4467,5411,6543,7888,9489,11383,13632,16280,19409, 23088,27415,32483,38430,45371,53485,62939,73950,86742

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*A261776 Expansion of Product_{k>=1} (1 - x^(10*k))/(1 - x^k).*

$$-\frac{e^{\frac{3\pi}{8}}\ 2^{27/40}\ 5^{1/4}\ \Gamma\left(\frac{4}{5}\right)^2\left(-5+\sqrt{5}\right)}{20\ \Gamma\left(\frac{9}{10}\right)\Gamma\left(\frac{7}{10}\right)}$$

1.047209470046018347034337055881 1

1,1,2,3,5,7,11,15,22,30,41,55,75,98,130,169,220,282,363,460,584,735,923,1151,1435, 1775,2194,2698,3311,4045,4935,5994,7270,8787,10600,12749,15310,18330,21912, 26130,31107,36949,43823,51863,61290,72293,85145,100107

A261968 Expansion of phi(q^5) / phi(q) in powers of q where phi() is a Ramanujan theta function.

$$\frac{8\ 2^{3/5}\ 5^{1/4}\ \Gamma\left(\frac{9}{10}\right)^3\Gamma\left(\frac{7}{10}\right)^3\left(5+\sqrt{5}\right)^3\left(\frac{\sqrt{5}}{4}-\frac{1}{4}\right)^3\left(\frac{\sqrt{5}}{4}+\frac{1}{4}\right)^3}{125\ \Gamma\left(\frac{4}{5}\right)^6}$$

0.920442065259926035765365194210 94

1,-2,4,-8,14,-22,36,-56,84,-126,184,-264,376,-528,732,-1008,1374,-1856,2492,-3320, 4394,-5784,7568,-9848,12756,-16442,21096,-26960,34312,-43500,54956,-69184, 86804,-108576,135392,-168336,208722,-258096,318320,-391632

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*A262050 Expansion of f(-x)^2 * f(-x^10) / phi(-x)^3 in powers of x where phi(), f() are Ramanujan theta functions.*

$$-\frac{e^{\frac{\pi}{2}}\ 2^{3/10}\ 5^{1/4}\ \Gamma\left(\frac{4}{5}\right)^2\left(-5+\sqrt{5}\right)}{20\ \Gamma\left(\frac{9}{10}\right)\Gamma\left(\frac{7}{10}\right)}$$

1.195898598137479101566500367336 2

1,4,11,28,63,132,264,504,928,1660,2892,4924,8221,13480,21750,34592,54288,84168, 129048,195816,294282,438324,647413,948748,1380107,1993632,2860984,4080172, 5784560,8154900,11435142,15953124,22147824,30604868,42102636,57672312

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*A262152 Expansion of f(-x^6)^3 / (f(-x^4)^2 * psi(x)) in powers of x where phi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{7\pi}{24}}\ \pi^{1/4}\ 2^{13/24}\ \Gamma\left(\frac{11}{12}\right)\ \left(\sqrt{3}-1\right)}{3\ \Gamma\left(\frac{3}{4}\right)\ \sqrt{\Gamma\left(\frac{5}{6}\right)}}$$

0.95850868194118074962821495719912

1,-1,1,-2,5,-6,4,-8,18,-20,16,-27,52,-58,47,-74,133,-146,127,-187,312,-343,304,-431, 687,-751,687,-941,1436,-1569,1459,-1948,2879,-3139,2975,-3885,5569,-6071,5826, -7472,10457,-11385,11067,-13972,19122,-20813,20423

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*A262156 Expansion of f(-x^6)^3 / (f(x)^2 * psi(x)) in powers of x where psi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{13\pi}{24}}\ 2^{1/8}\ \sqrt{3}\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{11}{12}\right)^5\ \Gamma\left(\frac{7}{12}\right)^6}{16\ \Gamma\left(\frac{3}{4}\right)^{11}\ \sqrt{\pi}}$$

0.88389900465570748699923996957512

1,-3,8,-19,42,-86,166,-309,557,-974,1661,-2773,4543,-7316,11600,-18140,28011,-42751, 64550,-96503,142951,-209939,305844,-442213,634865,-905361,1282957,-1807175, 2531156,-3526051,4886764,-6739401,9250902,-12641475,17200638

A262930 Expansion of (psi(-q) / f(q^3))^2 in powers of q where psi(), f() are Ramanujan theta functions.

$$\frac{\pi^{1/3}\ 3^{2/3}\ \Gamma\left(\frac{11}{12}\right)^{2/3}}{\Gamma\left(\frac{2}{3}\right)^{2/3}\ \Gamma\left(\frac{3}{4}\right)^{2/3}\ \left(\sqrt{2}\ \left(1+\sqrt{3}\right)\right)^{2/3}}$$

0.91513750447758119898074172599059

1,-2,1,-4,6,-2,12,-16,5,-28,36,-12,60,-76,24,-120,150,-46,228,-280,86,-416,504,-152, 732,-878,262,-1252,1488,-442,2088,-2464,725,-3408,3996,-1168,5460,-6364,1852, -8600,9972,-2886,13344,-15400,4436,-20424,23472

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*A263502 Expansion of phi(q) * f(-q^2)^3 / f(-q^6) in powers of q where phi(), f() are Ramanujan theta functions.*

$$\frac{\pi^{7/12}\, 3^{1/6}\, \Gamma\left(\frac{2}{3}\right)^{1/3} \left(\sqrt{2}\,\left(1+\sqrt{3}\right)\right)^{4/3} \sqrt{2}\,\left(\sqrt{3}-1\right)}{8\,\Gamma\left(\frac{3}{4}\right)^{2/3} \Gamma\left(\frac{11}{12}\right)^{4/3} \Gamma\left(\frac{7}{12}\right)}$$

1.080348289250512796878745577248 7

1,2,-3,-6,2,0,0,12,-3,-4,12,-6,-6,0,-6,0,2,-6,-12,12,0,0,24,-12,0,14,-6,-6,12,0,-24,12,-3,0,12,-12,-4,0,-12,-24,12,-6,0,36,-6,0,24,-12,-6,14,-15,0,0,0,0,24,-6,-24,36,-6,0,0,-18,-24,2,-12,-24,36

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*A263526 Expansion of f(x, x)^2 / (f(x^3, x^3) * f(x, x^5)) in powers of x where f(,) is Ramanujan's general theta function.*

$$\frac{4\, e^{-\frac{\pi}{3}}\, \Gamma\left(\frac{3}{4}\right)^6}{\Gamma\left(\frac{11}{12}\right)^3 \Gamma\left(\frac{7}{12}\right)^3}$$

1.131263619825706649159258411185 3

1,3,1,-3,-1,0,1,6,0,-6,-3,-3,4,12,1,-12,-6,-3,5,24,1,-24,-10,-6,11,42,4,-42,-19,-12,17,72,4,-69,-31,-18,31,120,9,-114,-50,-30,46,189,11,-180,-79,-48,77,294,21,-276,-122,-72,112,450,28,-420,-183,-108

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*A263571 Expansion of f(x^2, x^2) * f(x, x^5) in powers of x where f(,) is Ramanujan's general theta function.*

$$\frac{e^{\frac{\pi}{3}}\, 2^{1/4} \sqrt{3}\, \Gamma\left(\frac{5}{8}\right)^3 \Gamma\left(\frac{11}{12}\right) \left(2+\sqrt{2}\right)^2 \left(\sqrt{3}-1\right)}{48\sqrt{\pi}\, \Gamma\left(\frac{2}{3}\right) \Gamma\left(\frac{7}{8}\right)^3}$$

1.047110354064491259956103939346 2

1,1,2,2,0,1,0,2,3,2,2,0,0,2,0,0,3,0,4,2,0,1,0,4,2,0,2,0,0,2,0,0,2,3,2,2,0,2,0,2,3,2,2,0,0,0,0,0,4,0,2,4,0,2,0,2,1,0,6,0,0,0,0,0,2,3,2,2,0,0,0,2,4,4,2,0,0,2,0,0,2,0,0,4,0,1,0

A263773 Expansion of b(-q)^2 in powers of q where b() is a cubic AGM theta function.

$$\frac{\pi^{4/3}\, 3^{2/3}\, \Gamma\left(\frac{11}{12}\right)^{2/3}}{\Gamma\left(\frac{2}{3}\right)^{2/3} \Gamma\left(\frac{3}{4}\right)^{14/3} \left(\sqrt{2}\,\left(1+\sqrt{3}\right)\right)^{2/3}}$$

1.27497316744090982862839714330 24

1,6,9,-12,-42,-18,36,48,45,-12,-108,-36,84,84,72,-72,-186,-54,36,120,126,-96,-216,-72,180,186,126,-12,-336,-90,216,192,189,-144,-324,-144,84,228,180,-168,-540,-126,288,264,252,-72,-432,-144,372,342,279,-216

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*A263923 Expansion of psi(-x^3)^2 * f(-x^2)^3 / f(-x)^2 in powers of x where psi(), f() are Ramanujan theta functions.*

$$-\frac{e^{\frac{11\pi}{12}}\,\pi^{7/4}\,2^{3/4}\,\Gamma\left(\frac{11}{12}\right)^2\left(-2+\sqrt{3}\right)}{12\,\Gamma\left(\frac{2}{3}\right)^2\Gamma\left(\frac{3}{4}\right)^5}$$

1.09032793049678728118888763919962

1,2,2,2,1,2,3,4,5,2,3,4,4,4,3,4,4,4,5,4,3,8,7,6,4,4,6,4,9,6,4,4,4,8,5,6,9,4,7,6,7,10,6,10,7,4,9,10,5,6,6,10,6,6,9,4,9,8,10,6,6,12,8,12,8,6,10,8,13,6,6,8,12,12,6,8,10,12,11,10,7,8

A263993 Expansion of f(-x, x^2) / f(-x, -x^3)^3 in powers of x where f(,) is Ramanujan's general theta function.

$$\frac{2\,e^{-\frac{\pi}{3}}\,3^{3/4}\,\Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{3}{4}\right)^3\left(1+\sqrt{3}\right)}{3\,\pi\,\Gamma\left(\frac{11}{12}\right)}$$

1.09478022552597398312071328294 11

1,2,4,10,20,36,64,112,189,308,492,778,1210,1844,2776,4144,6114,8914,12884,18484,26302,37124,52040,72512,100415,138196,189160,257648,349184,470932,632312,845472,1125853,1493222,1973060,2597892,3408754,4457600,5810544

A264026 Expansion of (f(x^3) / f(x))^6 in powers of x where f() is a Ramanujan theta function.

$$\frac{e^{\frac{\pi}{2}}\,\Gamma\left(\frac{2}{3}\right)^2\Gamma\left(\frac{3}{4}\right)^2\left(1+\sqrt{3}\right)^2}{36\,\pi\,\Gamma\left(\frac{11}{12}\right)^2}$$

0.78458342233093470906550286322156

1,-6,27,-92,279,-756,1913,-4536,10260,-22220,46479,-94176,185749,-357426,673056,-1242404,2252772,-4017816,7058609,-12228060,20911230,-35330324,59023728,-97568712,159693831,-258941124,416181510,-663337512,1048935414,-1646245836

A265256 Number of partitions of n having no odd singletons (n>=0).

$$\frac{e^{-\frac{\pi}{8}}\ 2^{3/8}\ 3^{1/4}\ \Gamma\left(\frac{2}{3}\right)^{2/3}\ \Gamma\left(\frac{3}{4}\right)^{1/3}\ \Gamma\left(\frac{7}{12}\right)^{2/3}}{\pi^{7/12}\ \left(\sqrt{2}\ \left(\sqrt{3}-1\right)\right)^{2/3}}$$

1.003829889154424961211494733255 7

1,0,2,1,4,2,8,4,14,9,24,16,41,28,66,49,104,80,163,128,248,203,372,312,554,472,810, 708,1172,1042,1684,1516,2390,2188,3364,3118,4705,4404,6522,6177,8980,8584, 12295,11844,16718,16244,22604,22120,30413,29944,40692

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*A266575 Expansion of q * f(-q^4)^6 / phi(-q) in powers of q where phi(), f() are Ramanujan theta functions.*

$$\frac{e^{\pi}\ \pi^{5/4}}{32\ \Gamma\left(\frac{3}{4}\right)^5}$$

1.094573019775366105040105760458 6

1,2,4,8,8,12,16,16,25,28,28,32,40,40,48,64,48,62,76,64,80,92,80,96,121,100,112,128, 120,136,160,128,144,184,152,200,200,164,208,224,192,216,252,224,248,296,224, 256,337,262,312,320,280,336,368,320,336,396

A271593 Expansion of psi(-x^3) / f(-x) in powers of x where psi(), f() are Ramanujan theta functions.

$$\frac{e^{\frac{\pi}{3}}\ \sqrt{\pi}\ 2^{5/8}\ \sqrt{3}\ \Gamma\left(\frac{11}{12}\right)\ \left(\sqrt{3}-1\right)}{6\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{3}{4}\right)}$$

1.047124960746464000890394600844 5

1,1,2,2,4,5,8,10,15,18,26,32,44,54,72,88,115,140,180,218,276,333,416,500,618,740,906, 1080,1312,1558,1880,2224,2666,3143,3746,4402,5220,6114,7216,8426,9903,11530, 13498,15672,18280,21168,24608,28424,32940,37956

A273225 Number of bipartitions of n wherein odd parts are distinct (and even parts are unrestricted).

$$\frac{2\ e^{-\frac{\pi}{4}}\ \sqrt{2}\ \Gamma\left(\frac{3}{4}\right)^2}{\sqrt{\pi}}$$

1.092555630852914324442509864279 7

1,2,3,6,11,18,28,44,69,104,152,222,323,460,645,902,1254,1722,2343,3174,4278,5722,7601,10056,13250,17358,22623,29382,38021,48984,62857,80404,102528,130282,165002,208398,262495,329666,412878,515840

A273226 G.f. is the cube of the g.f. of A006950.

$$\frac{4\, e^{-\frac{3\pi}{8}}\, 2^{1/4}\, \Gamma\left(\frac{3}{4}\right)^3}{\pi^{3/4}}$$

1.14199798989530557105604744423 82

1,3,6,13,27,51,91,159,273,455,738,1179,1860,2886,4410,6667,9981,14781,21671,31512,45474,65113,92547,130689,183439,255930,355017,489895,672672,919152,1250107,1692846,2282895,3066180,4102224,5468160,7263217,9614436,12684633,16682276

A273228 G.f. is the fourth power of the g.f. of A006950.

$$\frac{8\, e^{-\frac{\pi}{2}}\, \Gamma\left(\frac{3}{4}\right)^4}{\pi}$$

1.19367780650840959548820843719377

1,4,10,24,55,116,230,440,819,1480,2602,4480,7580,12604,20620,33272,53029,83520,130088,200600,306488,464168,697150,1039032,1537435,2259300,3298428,4785880,6903657,9903040,14129846,20058488,28336790,39845456,55778050,77747328,107924347,149221160

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*A274327 Expansion of Product_{n>=1} (1 - x^(4*n))/(1 - x^n)^4 in powers of x.*

$$\frac{2^{5/8}\, \Gamma\left(\frac{3}{4}\right)^3}{\pi^{3/4}}$$

1.20263192720911371562841022548 13

1,4,14,40,104,248,560,1200,2474,4924,9520,17928,33008,59528,105408,183536,314744,532208,888382,1465208,2389808,3857456,6166096,9766576,15336816,23888844,36924656,56659296,86341664,130710104,196640576,294059872,437232746,646561792

A274621 Coefficients in the expansion Product_{ n>=1 } (1-q^(2n-1))^2/(1-q^(2n))^2.

$$\frac{2\, e^{-\frac{\pi}{4}}\, 2^{1/4}\, \Gamma\left(\frac{3}{4}\right)^2}{\sqrt{\pi}}$$

0.91872611344947630034378359084058

1,-2,3,-6,11,-18,28,-44,69,-104,152,-222,323,-460,645,-902,1254,-1722,2343,-3174, 4278,-5722,7601,-10056,13250,-17358,22623,-29382,38021,-48984,62857,-80404, 102528,-130282,165002,-208398,262495,-329666,412878,-515840,642941,-799362, 991478

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*A275372 Expansion of f(-x) * f(-x^2)^4 / phi(x^2) in powers of x where phi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{3\pi}{8}}\, 2^{1/8}\, \Gamma\left(\frac{5}{8}\right)^4 \left(3+2\sqrt{2}\right) \sqrt{2-\sqrt{2}}}{16\, \pi\, \Gamma\left(\frac{7}{8}\right)^4}$$

0.94426575087316360608067988324438

1,-1,-7,6,20,-13,-34,15,53,-25,-91,52,135,-65,-180,82,253,-133,-343,160,449,-207,-603, 306,780,-348,-979,438,1241,-600,-1557,703,1924,-890,-2375,1115,2910,-1300,-3535, 1620,4318,-1993,-5198,2335,6180,-2783,-7420

A276285 Number of ways of writing n as a sum of 13 squares.

$$\frac{\pi^{13/4}}{\Gamma\left(\frac{3}{4}\right)^{13}}$$

2.937972625759177824974004659709 3

1,26,312,2288,11466,41808,116688,265408,535704,1031914,1899664,3214224,5043376, 7801744,12066912,17689152,24443978,34039200,48210760,64966096,83323344, 109157152,145532816,185245632,227110416,284788010,363737712

A276286 Number of ways of writing n as a sum of 14 squares.

$$\frac{\pi^{7/2}}{\Gamma\left(\frac{3}{4}\right)^{14}}$$

3.191915735016539199468342312656 8

1,28,364,2912,16044,64792,200928,503360,1089452,2186940,4196920,7544992, 12547808,19975256,31553344,48484800,70439852,99602104,142487436,200569824,

268594872,354052608,476105504,630908096,800698080,1008274932,1296257144

A276287 Number of ways of writing n as a sum of 15 squares.

$$\frac{\pi^{15/4}}{\Gamma\left(\frac{3}{4}\right)^{15}}$$

3.467808368981481055176568595584 0

1,30,420,3640,21870,96936,331240,911040,2128260,4495430,8972712,16946280, 29822520,49476840,80027280,127083328,193511790,282611280,409172940, 590913960,825736296,1115671760,1509537960,2048372160,2698852520, 3463029894

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*A276491 Expansion of q*Product_{k>=1} (1-q^(2*k))^2*(1-q^(10*k))^2.*

$$\frac{e^{\pi}\,\pi\left(5-\sqrt{5}\right)\sqrt{5}}{200\,\Gamma\left(\frac{3}{4}\right)^{4}}$$

0.996261640231213727225395835391 40

1,0,-2,0,-1,0,2,0,1,0,0,0,2,0,2,0,-6,0,-4,0,-4,0,6,0,1,0,4,0,6,0,-4,0,0,0,-2,0,2,0,-4,0,6,0, -10,0,-1,0,-6,0,-3,0,12,0,-6,0,0,0,8,0,12,0,2,0,2,0,-2,0,2,0,-12,0,-12,0,2,0,-2,0,0,0,8,0, -11,0,6,0,6,0,-12,0,-6,0,4,0,8,0,4,0,2,0,0,0,6,0,14,0,4,0,-6,0,2,0,-4,0,-6,0,-6,0,2,0,-12, 0,-11,0,-12,0,-1,0,2,0,20,0,0,0,-8,0,-4

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*A277283 Expansion of Product_{n>=1} (1 - x^(6*n))/(1 - x^n)^6 in powers of x.*

$$\frac{4\,2^{1/4}\,3^{5/6}\,\Gamma\left(\frac{3}{4}\right)^{8/3}\,\Gamma\left(\frac{11}{12}\right)^{4/3}\,\Gamma\left(\frac{7}{12}\right)\left(1+\sqrt{3}\right)}{3\,\pi^{13/12}\,\Gamma\left(\frac{2}{3}\right)^{1/3}\left(\sqrt{2}\,\left(1+\sqrt{3}\right)\right)^{4/3}}$$

1.318868096608984661192057492024 4

1,6,27,98,315,918,2491,6366,15498,36182,81501,177876,377558,781626,1582173, 3137832,6108051,11687598,22012816,40855674,74799828,135210868,241511115, 426570624,745516240,1290006276,2211202692,3756468658,6327617862, 10572763842

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*A279270 Expansion of phi(-x) * chi(-x)^2 * f(-x^6)^3 in powers of x where phi(), chi(), f() are Ramanujan theta functions.*

$$\frac{e^{\frac{2\pi}{3}}\ \pi^{3/2}\sqrt{3}\ \Gamma\left(\frac{11}{12}\right)^8\ \Gamma\left(\frac{7}{12}\right)^7\ \left(\sqrt{3}-1\right)}{32\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{3}{4}\right)^{19}}$$

0.836191280782638775808917908161 88

1,-4,5,-4,10,-16,12,-8,14,-28,21,-8,30,-40,28,-16,21,-52,34,-20,50,-56,48,-24,38,-72,44,-28,70,-88,56,-24,43,-100,70,-36,80,-112,84,-32,62,-104,85,-44,110,-136,56,-56,74,-148,102,-40,130,-144,120,-56,64

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*A279328 Expansion of Product_{k>=1} (1 + x^(2*k)) / (1 - x^k).*

$$\frac{e^{\frac{\pi}{24}}\ \Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

1.049168739402658346991852459 4832

1,1,3,4,8,11,20,27,44,60,92,124,183,244,348,461,640,840,1144,1488,1992,2572,3393,4348,5668,7212,9301,11760,15024,18880,23924,29892,37596,46728,58376,72193,89644,110340,136248,166968,205115,250316,306056,372032,452876

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*A279918 Expansion of f(-x^2)^7 / (f(x) * f(-x^8)^2) in powers of x where f() is a Ramanujan theta function.*

$$\frac{2^{1/8}\ \Gamma\left(\frac{5}{8}\right)^4\ \left(3+2\sqrt{2}\right)\ \sqrt{2+\sqrt{2}}\ e^{-\frac{\pi}{8}}}{8\ \pi\ \Gamma\left(\frac{7}{8}\right)^4}$$

0.947789170057351303404923175902 58

1,-1,-5,4,5,0,11,-15,-18,3,-10,29,10,11,37,-51,-16,-30,-65,62,53,22,50,-61,-52,-4,-81,120,62,0,124,-182,-85,-43,-157,171,123,60,202,-198,-174,0,-190,301,117,54,278,-375,-171,-153,-399,370,300,108,408,-451

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*A279955 Expansion of chi(-x^4)^4 * f(-x^4)^2 * f(-x)^2 in powers of x where chi(), f() are Ramanujan theta functions.*

$$-\frac{e^{-\frac{\pi}{4}}\ 2^{3/4}\ \Gamma\left(\frac{5}{8}\right)^4\ \left(3+2\sqrt{2}\right)}{8\ \pi\ \Gamma\left(\frac{7}{8}\right)^4\ \left(\sqrt{2}-2\right)}$$

0.911850815600630967214707755923 86

1,-2,-1,2,-5,14,4,-12,5,-40,0,26,11,68,-15,-30,-18,-106,3,50,-10,182,29,-104,10,-270,11,130,37,360,-51,-164,-16,-506,-30,266,-65,686,62,-320,53,-898,22,414,50,1206,-61,-612,-52,-1560,-4,696,-81,1958,120

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*A280339 Expansion of phi(x)^2 * chi(x^2)^4 * f(-x)^2 in powers of x where phi(), chi(), f() are Ramanujan theta functions.*

$$-\frac{e^{-\frac{\pi}{4}}\,\Gamma\left(\frac{5}{8}\right)^4\left(3+2\sqrt{2}\right)}{4\,\pi\,\Gamma\left(\frac{7}{8}\right)^4\left(\sqrt{2}-2\right)}$$

1.084379477733304551606718275842 8

1,2,-1,-2,-5,-14,4,12,5,40,0,-26,11,-68,-15,30,-18,106,3,-50,-10,-182,29,104,10,270,11,-130,37,-360,-51,164,-16,506,-30,-266,-65,-686,62,320,53,898,22,-414,50,-1206,-61,612,-52,1560,-4,-696,-81,-1958,120

---

*A280384 Expansion of f(x)^3 * f(-x^2) * chi(x^3)^3 in powers of x where chi(), f() are Ramanujan theta functions.*

$$\frac{3\sqrt{3}\,\Gamma\left(\frac{2}{3}\right)^2\Gamma\left(\frac{11}{12}\right)^3\Gamma\left(\frac{7}{12}\right)^5\left(2+\sqrt{3}\right)e^{-\frac{\pi}{6}}}{16\,\Gamma\left(\frac{3}{4}\right)^{12}}$$

1.127398383358057517474328698393 5

1,3,-1,-5,8,-1,-28,11,10,-41,41,26,-53,84,21,-101,76,3,-129,99,14,-190,187,59,-299,263,62,-336,340,27,-459,370,111,-645,518,228,-774,806,179,-973,882,147,-1233,955,291,-1565,1325,395,-1883,1767,338,-2318,1994

A280666 Expansion of eta(q)^6/eta(q^6) in powers of q.

$$\frac{\pi^{5/4}\,2^{5/6}\left(\sqrt{2}\,\left(\sqrt{3}-1\right)\right)^{3/2}\left(\sqrt{2}\,\left(1+\sqrt{3}\right)\right)^{5/3}}{32\,\Gamma\left(\frac{3}{4}\right)^2\Gamma\left(\frac{11}{12}\right)^{3/2}\Gamma\left(\frac{7}{12}\right)^{3/2}}$$

0.758225938265665772128436470514 4

1,-6,9,10,-30,0,12,36,9,-60,-12,-54,62,120,18,-72,-102,-54,-36,156,108,48,-192,-108,156,78,126,-206,-324,-72,240,324,225,-168,-276,-180,132,264,72,-144,-588,-198,240,804,270,-288,-312,-324,206,486,225,-528

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*A280822 Expansion of phi(-x) * f(-x)^2 * f(-x^6)^3 in powers of x where phi(), chi(), f()*

are Ramanujan theta functions.

$$\frac{9\, e^{\frac{5\pi}{6}}\, \sqrt{3}\, \Gamma\left(\frac{2}{3}\right)^5 \Gamma\left(\frac{11}{12}\right)^7 \Gamma\left(\frac{7}{12}\right)^{12} \left(2+\sqrt{3}\right)}{2048\, \pi\, \Gamma\left(\frac{3}{4}\right)^{25}}$$

0.83306529693958893252783356734646

1,-4,3,4,-1,-4,-11,20,-9,-8,8,12,16,-28,-3,-16,-7,0,37,-12,32,40,-37,-32,-65,44,-16,-8,41,48,-34,8,-39,4,64,-40,24,-4,3,-32,-33,-12,43,-88,81,-28,-67,44,103,32,50,88,-79,-48,-80,8,-176,-68,53,132,-16

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*A280874 Expansion of Product_{k>=1} (1 - x^(6*k)) * (1 + x^k) / (1 - x^k).*

$$\frac{e^{\frac{\pi}{4}}\, 2^{11/12}\, 3^{5/8}}{6\left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{1/6}}$$

1.094595915911450012107371992894 9

1,2,4,8,14,24,39,62,96,146,218,320,463,662,936,1310,1816,2496,3404,4608,6196,8278,10994,14520,19076,24938,32448,42032,54218,69656,89149,113680,144456,182952,230966,290688,364774,456446,569600,708938,880128,1089984

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*A280908 Expansion of Product_{k>=1} ((1+x^k) / ((1-x^(2*k-1)) * (1-x^(8*k-4)))).*

$$\frac{e^{\frac{\pi}{4}}\, 2^{7/16}}{2\left(2+\sqrt{2}\right)^{1/4}}$$

1.092551820710812028246110539424 0

1,2,3,6,10,16,25,38,56,82,118,166,233,322,440,598,804,1072,1422,1872,2449,3188,4126,5312,6810,8690,11040,13974,17618,22130,27707,34572,43000,53328,65942,81312,100004,122674,150110,183254,223200,271248,328945,398086

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*A280948 Expansion of Product_{k>=1} (1 - x^(6*k)) * (1 + x^(12*k-3)) * (1 + x^(12*k-9)) / ((1 - x^(4*k-2)) * (1 - x^(2*k))).*

$$\frac{2\, e^{\frac{\pi}{8}}\, 2^{23/24}\, \Gamma\left(\frac{11}{12}\right)^{3/2} \Gamma\left(\frac{7}{12}\right)^{3/2}}{\Gamma\left(\frac{3}{4}\right)^3 \left(\sqrt{2}\, \left(\sqrt{3}-1\right)\right)^{3/2} \left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{4/3}}$$

1.003829882617070965948532879273 8

1,0,2,1,4,2,7,4,12,8,20,14,32,24,50,39,76,62,114,96,168,145,244,216,350,316,496,456,696,650,968,916,1334,1278,1824,1766,2475,2420,3336,3290,4468,4440,5948,5952,

7874,7929,10368,10500,13584,13828,17714

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*A282544 Expansion of (phi(x)^4 + 3*phi(x^3)^4) / 4 in powers of x where phi() is a Ramanujan theta function.*

$$\frac{3\,\Gamma\left(\frac{2}{3}\right)^2\,\Gamma\left(\frac{11}{12}\right)^3\,\Gamma\left(\frac{7}{12}\right)^5\,\left(2+\sqrt{3}\right)}{16\,\Gamma\left(\frac{3}{4}\right)^{12}}$$

1.098785296762873419782571397678 2

1,2,6,14,6,12,42,16,6,50,36,24,42,28,48,84,6,36,150,40,36,112,72,48,42,62,84,158,48,60,252,64,6,168,108,96,150,76,120,196,36,84,336,88,72,300,144,96,42,114,186,252,84,108,474,144,48,280,180,120,252

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*A283120 Expansion of exp(Sum_{n>=1} sigma(8*n)*x^n/n) in powers of x.*

$$\frac{4\,e^{-\frac{\pi}{24}}\,2^{1/8}\,\Gamma\left(\frac{3}{4}\right)^8}{\pi^2}$$

1.971561571313210830439683420760 1

1,15,128,815,4289,19663,81057,306799,1081986,3594142,11338690,34193246,99080387,277046893,750192227,1973050940,5053026949,12628736331,30859262181,73849589786,173333118663,399528823032,905418038792,2019454523623,4437187104779

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*A283163 Expansion of exp(Sum_{n>=1} -sigma(4*n)*x^n/n) in powers of x.*

$$\frac{e^{\frac{\pi}{24}}\,\pi\,2^{7/8}}{4\,\Gamma\left(\frac{3}{4}\right)^4}$$

0.728123353071890381030465340108 90

1,-7,17,-14,2,-21,36,13,-26,-24,10,12,-17,34,22,19,-96,-10,14,38,0,12,-23,72,-38,-2,-11,-64,-34,0,72,84,-26,0,0,-79,60,24,-32,-58,-7,-84,50,26,120,0,0,46,-34,-64,10,-119,70,0,22,-70,36,37,-120,0

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*A283168 Expansion of exp(Sum_{n>=1} -sigma(8*n)*x^n/n) in powers of x.*

$$\frac{e^{\frac{\pi}{24}}\ \pi^2\ 2^{7/8}}{8\ \Gamma\left(\frac{3}{4}\right)^8}$$

0.507212158397834616070993591527 19

1,-15,97,-350,770,-1133,1540,-2731,4230,-3960,3402,-6580,9167,-5390,4310,-11061, 12320,-5306,2030,-7530,14784,-4340,-10119,-9240,20090,11438,-17275,-4928,2270, 14080,-26840,7700,16646,24640,-53760,7449,10780,46200,-61600

A284286 Expansion of eta(q^2)^4 / eta(q)^8 in powers of q.

$$\frac{2\ \Gamma\left(\frac{3}{4}\right)^4}{\pi}$$

1.435540022092259995642386447331 6

1,8,40,160,552,1712,4896,13120,33320,80872,188784,425952,932640,1988080,4137024, 8422848,16810536,32943760,63482760,120440608,225217904,415498496, 756920160,1362645440,2425895712,4273590392,7454092720,12879684160, 22056267840

A286346 Expansion of eta(q)^24 / eta(q^2)^12 in powers of q.

$$\frac{\pi^3}{8\ \Gamma\left(\frac{3}{4}\right)^{12}}$$

0.338029097033225413250226191883 46

1,-24,264,-1760,7944,-25872,64416,-133056,253704,-472760,825264,-1297056,1938336, -2963664,4437312,-6091584,8118024,-11368368,15653352,-19822176,24832944, -32826112,42517728,-51425088,61903776,-78146664,98021616,-115331264, 133522752

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*A286399 Expansion of eta(q^2)^12 * eta(q^4)^8 / eta(q)^8 in powers of q.*

$$\frac{\pi^3}{1024\ \Gamma\left(\frac{3}{4}\right)^{12}}$$

0.002640852320572073541017392124 0896

0,0,1,8,32,96,244,528,1024,1856,3126,5016,7808,11616,16808,23856,32768,44352, 59293,77352,100032,128128,161052,201264,249856,305280,371294,450128,537856, 640992,762744,894528,1048576,1228224,1419858,1642080,1897376,2167008

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*A286953 Expansion of Product_{j>=1} (1 - x^j)/(1 - x^(4*j))^4.*

$$\frac{8\, e^{-\frac{5\pi}{8}}\, 2^{1/8}\, \Gamma\left(\frac{3}{4}\right)^3}{\pi^{3/4}}$$

0.954932110665234165423833044842 80

1,-1,-1,0,4,-3,-4,1,14,-10,-14,4,39,-26,-40,13,101,-65,-105,36,238,-147,-251,91,534,-322,-569,212,1135,-666,-1222,469,2328,-1340,-2526,987,4606,-2600,-5035,2002,8867,-4928,-9751,3926,16624,-9100,-18382,7488,30499

A287990 Expansion of Jacobi theta constant (theta_2/2)^36.

$$\frac{e^{\frac{9\pi}{2}}\, \pi^9\, \sqrt{2}}{8388608\, \Gamma\left(\frac{3}{4}\right)^{36}}$$

4.598867601825906619983037118769 3

1,36,630,7176,60165,398412,2184078,10255320,42321942,156590980,527649912,1639560888,4745867595,12904341336,33190117110,81222775680,190066236318,427113304920,925107172122,1937505253320,3934709716500,7767340567380,14937197788890

A287991 Expansion of Jacobi theta constant (theta_2/2)^48.

$$\frac{e^{6\pi}\, \pi^{12}}{1073741824\, \Gamma\left(\frac{3}{4}\right)^{48}}$$

7.647765137212036598711851408743 2

1,48,1128,17344,196836,1764192,13051008,82244736,452197434,2210431056,9753024192,39328459968,146436844568,507826976160,1652238451200,5074887938688,14794635174459,41126600601168,109456398969568,279899944411776,689873759134308

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*A288143 Expansion of x * phi(x) * phi(x^3)^2 * f(x, x^5)^3 in powers of x where phi() is a Ramanujan theta function and f(,) is Ramanujan's general theta function.*

$$\frac{e^{\pi}\, 3^{3/4}\, \pi^2\, \left(\sqrt{3}-1\right)}{54\, \Gamma\left(\frac{2}{3}\right)\, \Gamma\left(\frac{3}{4}\right)^5\, \Gamma\left(\frac{7}{12}\right)}$$

1.233855089979006483241422073326 4

1,5,9,11,24,45,50,53,81,120,120,99,170,250,216,203,288,405,362,264,450,600,528,477,601,850,729,550,840,1080,962,821,1080,1440,1200,891,1370,1810,1530,1272,1680,2250,1850,1320,1944,2640,2208,1827,2451,3005,2592

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*A290404 Expansion of (1 - lambda(z) + lambda(z)^2)^3 in powers of nome q = exp(Pi*i*z) where lambda(z) is the elliptic modular function (A115977).*

$$\frac{27}{64}$$

0.42187500000000000000000000000000

1,-48,1920,-55360,1324032,-26724000,464570880,-7064945280,94923448320,-1136097028848,12215871801600,-119054431876800,1060887371509760,-8714739888694560,66487024888734720,-474247005621552000,3181339807178883072,-20174389229411069280

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*A291124 Expansion of phi(x)^6 * phi(-x)^2 in powers of x where phi() is a Ramanujan theta function.*

$$\frac{\pi^2 \sqrt{2}}{2\,\Gamma\left(\frac{3}{4}\right)^8}$$

1.37250641723059439959791337484900

1,8,16,-32,-144,-16,448,192,-912,-88,2016,-352,-4032,176,5504,64,-7056,400,12112,352,-18144,-768,21312,-448,-25536,-968,35168,1216,-49536,1584,56448,-1280,-56208,1408,78624,-384,-109008,-1296,109760,-704,-114912,-1584

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*A293132 G.f.: 2*q * Product_{n>=1} (1 + q^(2*n))/((1 + q^n)*(1 + q^(2*n-1))*(1 + q^(4*n))) in powers of q.*

$$\left(2^{45/64}\,3^{19/32}\left(\frac{\pi\sqrt{3}}{\Gamma\left(\frac{2}{3}\right)}\right)^{45/32}\sqrt{\frac{\pi\sqrt{2}\,\sqrt{2+\sqrt{2}}}{\Gamma\left(\frac{7}{8}\right)}}\left(\frac{\pi\sqrt{2}\,\left(1+\sqrt{3}\right)}{\Gamma\left(\frac{11}{12}\right)}\right)^{45/32}\left(\frac{\pi\sqrt{2}\,\left(\sqrt{3}-1\right)}{\Gamma\left(\frac{7}{12}\right)}\right)^{45/32}\right)\Big/\left(9\,\pi^{\frac{13}{128}}\left(e^{\pi}\right)^{1/12}\left(\frac{\pi\sqrt{2}}{\Gamma\left(\frac{3}{4}\right)}\right)^{53/16}\left(\frac{\pi}{\Gamma\left(\frac{5}{6}\right)}\right)^{45/64}\sqrt{\frac{\pi\sqrt{2}\,\sqrt{2-\sqrt{2}}}{\Gamma\left(\frac{5}{8}\right)}}\right)$$

1.83743300344636391022712189543830

1,2,4,6,10,16,24,36,52,74,104,144,196,264,352,468,614,800,1036,1332,1704,2168,2744,3456,4331,5408,6724,8328,10278,12640,15496,18936,23072,28030,33960,41040,49470,59488,71368,85428,102042,121632,144692,171792,203584

A293422 The PDO_t(n) function (Number of tagged parts over all the partitions of n with designated summands in which all parts are odd).

$$\frac{1024\, e^{\pi}\, \pi^{5/3}\, 3^{23/24}\, \Gamma\left(\frac{11}{12}\right)^{47/6}\, \Gamma\left(\frac{7}{12}\right)^{11/2}}{3\, \Gamma\left(\frac{2}{3}\right)^{7/3}\, \Gamma\left(\frac{3}{4}\right)^{46/3}\, \left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{47/6}\, \left(\sqrt{2}\, \left(\sqrt{3}-1\right)\right)^{11/2}}$$

1.094419256314062345885772861051 2

1,2,4,6,10,16,24,36,52,74,104,144,196,264,352,468,614,800,1036,1332,1704,2168,2744,3456,4331,5408,6724,8328,10278,12640,15496,18936,23072,28030,33960,41040,49470,59488,71368,85428,102042,121632,144692,171792,203584

A294387 Expansion of chi(q^3) / chi^3(q) in powers of q where chi() is a Ramanujan theta function.

$$\frac{3^{1/3}\, \Gamma\left(\frac{2}{3}\right)^{2/3}\, \Gamma\left(\frac{11}{12}\right)^{1/3}\, \Gamma\left(\frac{7}{12}\right)\, \sqrt{2}\, \left(1+\sqrt{3}\right)}{4\, \pi^{1/3}\, \Gamma\left(\frac{3}{4}\right)^{4/3}\, \left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{1/3}}$$

0.880662681754837686353779742443 28

1,-3,6,-12,21,-36,60,-96,150,-228,342,-504,732,-1050,1488,-2088,2901,-3996,5460,-7404,9972,-13344,17748,-23472,30876,-40413,52644,-68268,88152,-113364,145224,-185352,235734,-298800,377514,-475488,597108,-747690,933672

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*A299473 a(n) = 3*p(n), where p(n) is the number of partitions of n.*

$$\frac{3\, e^{-\frac{\pi}{24}}\, 2^{3/8}\, \Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

3.141628410138126390659396589 4965

3,3,6,9,15,21,33,45,66,90,126,168,231,303,405,528,693,891,1155,1470,1881,2376,3006,3765,4725,5874,7308,9030,11154,13695,16812,20526,25047,30429,36930,44649,53931,64911,78045,93555,112014,133749,159522,189783,225525,267402,316674,374262,441819,520575,612678

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*A299474 a(n) = 4*p(n), where p(n) is the number of partitions of n.*

$$\frac{4\, e^{-\frac{\pi}{24}}\, 2^{3/8}\, \Gamma\left(\frac{3}{4}\right)}{\pi^{1/4}}$$

4.188837880184168520879195452662 0

4,4,8,12,20,28,44,60,88,120,168,224,308,404,540,704,924,1188,1540,1960,2508,3168, 4008,5020,6300,7832,9744,12040,14872,18260,22416,27368,33396,40572,49240, 59532,71908,86548,104060,124740,149352,178332,212696,253044,300700,356536, 422232,499016,589092,694100,816904

A302856 Number of ways of writing n as a sum of 32 squares.

$$\frac{\pi^8}{\Gamma\left(\frac{3}{4}\right)^{32}}$$

14.194415902939396157607342110136

1,64,1984,39680,575424,6448000,58115328,433131008,2724906944,14709082432, 69079796864,285848172800,1054968628480,3515371815296,10706472186368, 30156949879296,79395777333184,197101549419648,464573878394560, 1045365667116800,2256126097001600,4689805691447296

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*A318937 a(n) = 16 times the sum of the cubes of the divisors of 2*n+1.*

$$\frac{3\, e^{\frac{\pi}{2}}\, \pi^2\, \sqrt{2}}{\Gamma\left(\frac{3}{4}\right)^8}$$

39.614466451905407671448176159956

16,448,2016,5504,12112,21312,35168,56448,78624,109760,154112,194688,252016, 327040,390240,476672,596736,693504,810464,984704,1102752,1272128,1526112, 1661184,1887888,2201472,2382048,2685312,3073280,3286080,3631712,4166528, 4431168,4812224

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*A319294 Expansion of 128 * ((theta_3(q)^4 + theta_4(q)^4)/theta_2(q)^8 + (theta_4(q) ^4 - theta_2(q)^4)/theta_3(q)^8) in powers of q = exp(Pi i t).*

$$\frac{768\, e^{-2\pi}\, \Gamma\left(\frac{3}{4}\right)^4}{\pi}$$

1.029422891647532781516551840802 4

1,0,144,-5120,70524,-626688,4265600,-24164352,119375370,-529539072,2151757440,

-8125793280,28827864296,-96885780480,310514729472,-954123868160,2823202073655,-8074060259328,22387521828480,-60344692402176,158484892943628,-406368240128000,1019049374174976

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*A319306 Expansion of (7 * theta_4(q)^20 * theta_2(q)^8 + 7 * theta_4(q)^24 * theta_2(q)^4 + 2 * theta_4(q)^28)/(2 * delta^2) in powers of q = exp(Pi i t), where delta is A000594.*

$$\frac{1048576\, e^{-4\pi}\, \Gamma\left(\frac{3}{4}\right)^{20}}{\pi^5}$$

0.696660270536682561991400646519 21

1,0,-232,0,86064,-1835008,23619232,-229638144,1841202076,-12765888512,78856617456,-442924793856,2295931514240,-11106754756608,50583249259456,-218397947199488,899050944837546,-3545383150551040,13446464974112552,-49213617532305408

A319307 Expansion of theta_4(q)^16 in powers of q = exp(Pi i t).

$$\frac{\pi^4}{16\, \Gamma\left(\frac{3}{4}\right)^{16}}$$

0.235471733167395309424746303838 33

1,-32,480,-4480,29152,-140736,525952,-1580800,3994080,-8945824,18626112,-36714624,67978880,-118156480,197120256,-321692928,509145568,-772845120,1143441760,-1681379200,2428524096,-3392205824,4658843520,-6411152640,8705492608,-11488092896

A319308 Expansion of theta_4(q)^20 in powers of q = exp(Pi i t).

$$\frac{\pi^5}{32\, \Gamma\left(\frac{3}{4}\right)^{20}}$$

0.164030071989356139105808901780 95

1,-40,760,-9120,77560,-497648,2508000,-10232640,34729720,-100906760,259114704,-606957280,1327461600,-2738111280,5341699520,-9915552192,17701924600,-30615844560,51294999960,-83279292960,131880275664,-204949382400,312126610080,-464844224960,680432137440

A319309 Expansion of theta_4(q)^24 in powers of q = exp(Pi i t).

$$\frac{\pi^6}{64\,\Gamma\left(\frac{3}{4}\right)^{24}}$$

0.11426367044109772187795551746189

1,-48,1104,-16192,170064,-1362336,8662720,-44981376,195082320,-721175536,2319457632,-6631997376,17231109824,-41469483552,93703589760,-200343312768,407488018512,-793229226336,1487286966928,-2697825744960,4744779429216,-8110465650176

A319310 Expansion of theta_4(q)^28 in powers of q = exp(Pi i t).

$$\frac{\pi^7}{128\,\Gamma\left(\frac{3}{4}\right)^{28}}$$

0.079596297339423231930116284917133

1,-56,1512,-26208,327656,-3147984,24189984,-152867520,811401192,-3681079640,14500933104,-50376047904,156797510688,-444306558864,1163495873088,-2851049839680,6597606440936,-14512424533488,30505974273096,-61591664700384,119983597365744,-226303038736128

A319552 Expansion of 1/theta_4(q)^3 in powers of q = exp(Pi i t).

$$\frac{2^{3/4}\,\Gamma\left(\frac{3}{4}\right)^3}{\pi^{3/4}}$$

1.3114794161716597885427816075693

1,6,24,80,234,624,1552,3648,8184,17654,36816,74544,147056,283440,535008,990912,1803882,3232224,5707624,9943536,17106960,29088352,48922320,81438528,134261584,219336630,355242288,570675904,909674688,1439394192,2261635168,3529838208

A319553 Expansion of 1/theta_4(q)^8 in powers of q = exp(Pi i t).

$$\frac{4\,\Gamma\left(\frac{3}{4}\right)^8}{\pi^2}$$

2.060775155028646316356894596 2658

1,16,144,960,5264,25056,106944,418176,1520784,5201232,16871648,52252992,155341248,445226848,1234726272,3323392128,8704504976,22234655520,55498917840,135595345600,324759439584,763505859072,1764050361152,

4009763323008,8975341703616,19800832628336

A319554 Expansion of 1/theta_4(q)^12 in powers of q = exp(Pi i t).

$$\frac{8\,\Gamma\left(\frac{3}{4}\right)^{12}}{\pi^3}$$

2.95832521157700345043607659316 70

1,24,312,2912,21816,139152,783328,3986112,18650424,81251896,332798544,1291339296,4776117216,16922753616,57683178432,189821722688,604884735288,1871370360240,5633654421720,16535803556064,47405095227984,132942579098368,365211946954656

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*A319822 Number of solutions to x^2 + 2*y^2 + 5*z^2 + 5*w^2 = n.*

$$-\frac{\Gamma\left(\frac{5}{8}\right)^4\sqrt{2+\sqrt{2}}\,\left(5+3\sqrt{5}\right)\left(3+2\sqrt{2}\right)}{40\,\pi\,\Gamma\left(\frac{7}{8}\right)^4\left(-5+\sqrt{5}\right)}$$

1.09049317817960924815066239253 20

1,2,2,4,2,4,12,8,18,14,4,28,12,24,32,0,34,20,14,28,4,32,44,40,28,10,40,56,64,72,8,48,66,24,68,8,46,88,60,32,4,52,64,116,76,12,64,72,60,82,26,72,104,104,88,8,112,56,136,140,8,136,96,72,98,16,72,132

A320049 Expansion of (psi(x) / phi(x))^6 in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{e^{\frac{3\pi}{4}}\,2^{1/4}}{16}$$

0.78418725859165474593089953428806

1,-6,27,-98,309,-882,2330,-5784,13644,-30826,67107,-141444,289746,-578646,1129527,-2159774,4052721,-7474806,13569463,-24274716,42838245,-74644794,128533884,-218881098,368859591,-615513678,1017596115,-1667593666,2710062756,-4369417452

A320050 Expansion of (psi(x) / phi(x))^7 in powers of x where phi(), psi() are Ramanujan theta functions.

$$\frac{e^{\frac{7\pi}{8}}\,2^{5/8}}{32}$$

0.75304872679352721329186442864644

1,-7,35,-140,483,-1498,4277,-11425,28889,-69734,161735,-362271,786877,-1662927,3428770,-6913760,13660346,-26492361,50504755,-94766875,175221109,-319564227,575387295,-1023624280,1800577849,-3133695747,5399228149,-9214458260,15584195428

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*A320069 Expansion of 1/(theta_3(q) * theta_3(q^2)), where theta_3() is the Jacobi theta function.*

$$\frac{4\sqrt{\pi}\,\Gamma\left(\frac{7}{8}\right)^2\sqrt{2-\sqrt{2}}}{\Gamma\left(\frac{5}{8}\right)^2\left(2+\sqrt{2}\right)}$$

0.91701683496666156658773258797020

1,-2,2,-4,10,-16,20,-32,58,-86,112,-164,260,-368,480,-672,986,-1348,1750,-2372,3312,-4416,5684,-7520,10148,-13266,16912,-21960,28896,-37168,46944,-60032,77466,-98312,123076,-155392,197422,-247696,307540,-384096,481776,-598500

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*A320070 Expansion of 1/(theta_3(q) * theta_3(q^2) * theta_3(q^3)), where theta_3() is the Jacobi theta function.*

$$\frac{32\,\pi^{15/4}\sqrt{3}\,\Gamma\left(\frac{7}{8}\right)^8\sqrt{2-\sqrt{2}}}{9\left(\frac{17}{12}+\sqrt{2}\right)\Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{5}{8}\right)^8\Gamma\left(\frac{11}{12}\right)^2\Gamma\left(\frac{7}{12}\right)^3\left(1+\sqrt{3}\right)}$$

0.91686885321840156196523961718351

1,-2,2,-6,14,-20,32,-60,98,-150,232,-360,558,-828,1196,-1776,2614,-3700,5238,-7480,10516,-14592,20180,-27832,38216,-51970,70184,-94842,127612,-170140,226164,-300324,396754,-521520,683484,-893432,1164330,-1511188,1954756,-2524188

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*A320124 Number of integer solutions to a^2 + b^2 + 2*c^2 + 3*d^2 = n.*

$$\frac{2^{3/4}\,\Gamma\left(\frac{2}{3}\right)\Gamma\left(\frac{5}{8}\right)^5\Gamma\left(\frac{7}{12}\right)\left(2+\sqrt{2}\right)^3\left(1+\sqrt{3}\right)}{128\,\pi^2\,\Gamma\left(\frac{7}{8}\right)^5}$$

1.18494025334124335490988889834320

1,4,6,10,20,20,24,40,22,28,56,20,50,80,28,80,84,32,78,80,68,100,120,80,88,124,56,82,136,100,140,200,86,80,192,72,140,240,120,200,248,80,112,176,100,260,224,160,210,172,186,128,272,180,240,400,124,200,280,116

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*A320126 Number of integer solutions to a^2 + b^2 + 2*c^2 + 5*d^2 = n.*

$$\frac{\sqrt{2}\ 5^{3/4}\ \Gamma\left(\frac{5}{8}\right)^4\ \left(3+2\sqrt{2}\right)\ \left(5-\sqrt{5}\right)^{3/2}\ \left(\sqrt{5}+1\right)^3\ \sqrt{2+\sqrt{2}}}{6400\ \pi\ \Gamma\left(\frac{7}{8}\right)^4}$$

1.184749393077403557205559144549 2

1,4,6,8,12,10,16,28,22,36,40,24,56,36,24,64,28,64,78,24,58,48,68,92,80,92,72,112,92, 48,104,96,118,176,64,48,124,84,148,160,104,120,176,120,72,146,88,204,216,124, 126,96,180,148,224,188,120,304,216,120,224,96

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*A320138 Number of integer solutions to a^2 + 2*b^2 + 3*c^2 + 3*d^2 = n.*

$$\frac{\Gamma\left(\frac{2}{3}\right)^2\ \Gamma\left(\frac{5}{8}\right)^6\ \Gamma\left(\frac{7}{12}\right)^2\ \left(7\sqrt{2}+10\right)\ \left(2+\sqrt{3}\right)\ \sqrt{2}\ \sqrt{2+\sqrt{2}}}{128\ \pi^3\ \Gamma\left(\frac{7}{8}\right)^6}$$

1.090844558111408043074497327477 4

1,2,2,8,10,8,24,16,10,38,8,12,48,8,32,64,26,36,70,28,24,80,28,48,96,42,40,76,48,24,112, 64,58,160,68,32,126,56,44,192,56,84,176,44,60,88,80,96,208,114,74,176,72,72,172, 80,112,288,88,76,224,72,112,304,90,96

---

*A320140 Number of integer solutions to a^2 + 2*b^2 + 3*c^2 + 5*d^2 = n.*

$$-\frac{128\left(-3+\sqrt{3}\right)\ 10^{1/4}\ \left(2-\sqrt{2}\right)^{9/2}\ \left(\frac{5}{2}+\sqrt{5}\right)\ \pi^4\ \Gamma\left(\frac{7}{8}\right)^9\ \left(5-\sqrt{5}\right)^{3/2}}{15\sqrt{2+\sqrt{2}}\ \left(\sqrt{5}+1\right)^3\ \Gamma\left(\frac{11}{12}\right)^2\ \Gamma\left(\frac{7}{12}\right)^3\ \Gamma\left(\frac{5}{8}\right)^9\ \Gamma\left(\frac{2}{3}\right)}$$

0.916868576871044640571698579817 72

1,2,2,6,6,6,16,8,14,26,8,32,26,8,40,16,22,40,22,32,46,40,24,48,40,42,72,50,32,64,56,28, 74,48,60,112,78,24,72,76,40,144,48,48,120,50,52,48,70,98,150,128,40,84,128,52,176, 120,56,208,96,72,92,72,102,192,156

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*A320147 Number of integer solutions to a^2 + b^2 + 3*c^2 + 5*d^2 = n.*

$$\frac{2^{1/10}\ 5^{1/4}\ \Gamma\left(\frac{7}{12}\right)\ \Gamma\left(\frac{2}{3}\right)\ \Gamma\left(\frac{7}{10}\right)\ \Gamma\left(\frac{3}{5}\right)^2\ \left(1+\sqrt{3}\right)\ \left(\sqrt{5}+1\right)^2\ \left(5+\sqrt{5}\right)}{320\ \Gamma\left(\frac{3}{4}\right)^5\ \sqrt{\pi}\ \Gamma\left(\frac{9}{10}\right)}$$

1.180531460666068641619568747315 1

1,4,4,2,12,18,8,16,24,28,40,8,26,72,16,16,44,44,68,24,34,80,72,28,40,124,40,50,112,56,80,40,76,144,120,32,84,216,24,40,136,80,160,88,56,154,88,28,158,228,100,48,216,172,80,104,80,300,280,40,112,248,120,112

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*A320149 Number of integer solutions to a^2 + 2*b^2 + 2*c^2 + 2*d^2 = n.*

$$-\frac{\Gamma\left(\frac{5}{8}\right)^4 \left(3+2\sqrt{2}\right)\sqrt{2+\sqrt{2}}}{16\,\pi\,\Gamma\left(\frac{7}{8}\right)^4 \left(\sqrt{2}-2\right)}$$

1.0986534618873295727942351752354

1,2,6,12,14,24,20,16,30,14,40,60,36,72,48,16,62,36,42,108,72,96,100,48,68,42,120,120,112,168,48,64,126,40,108,192,98,216,180,48,136,84,160,252,180,168,144,96,132,114,126,216,216,312,200,80,240,72,280,348,112

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*A320150 Number of integer solutions to a^2 + 2*b^2 + 2*c^2 + 3*d^2 = n.*

$$\frac{3^{3/4}\,\Gamma\left(\frac{2}{3}\right)\,2^{1/4}\,\Gamma\left(\frac{5}{8}\right)^3 \left(2+\sqrt{2}\right)^{3/2}}{48\,\pi\,\Gamma\left(\frac{7}{8}\right)^3 \Gamma\left(\frac{11}{12}\right)\left(\sqrt{2}-1\right)\left(\sqrt{3}-1\right)}$$

1.0947420473107136053688100330414

1,2,4,10,10,16,24,12,28,26,8,48,30,28,72,32,34,64,28,36,80,60,72,96,72,42,56,82,36,112,120,60,124,96,32,96,130,76,216,140,56,160,48,84,144,112,144,192,150,86,84,128,140,208,240,96,216,180,56,240,96,124,360

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*A320151 Number of integer solutions to a^2 + 2*b^2 + 2*c^2 + 5*d^2 = n.*

$$\frac{5^{3/4}\,\Gamma\left(\frac{5}{8}\right)^4 \left(3+2\sqrt{2}\right)\sqrt{2}\,\left(5-\sqrt{5}\right)^{3/2}\left(\sqrt{5}+1\right)^3\left(4+2\sqrt{2}\right)}{25600\,\pi\,\Gamma\left(\frac{7}{8}\right)^4}$$

1.0945657154193823122175866877714

1,2,4,8,6,10,12,8,28,22,24,40,8,32,36,16,54,32,28,56,26,32,48,40,84,74,72,48,24,92,52,96,92,32,96,80,42,64,80,80,168,124,48,72,72,94,132,104,72,126,124,96,48,96,120,168,252,96,120,168,48,196,128,88,246

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*A320239 Expansion of theta_3(q) * theta_3(q^3) * theta_3(q^5), where theta_3() is the Jacobi theta function.*

$$-\frac{\pi^{1/4}\sqrt{3}\;5^{3/4}\,\Gamma\left(\frac{7}{12}\right)^3\Gamma\left(\frac{11}{12}\right)^2\Gamma\left(\frac{2}{3}\right)\left(1+\sqrt{3}\right)^3\left(-2+\sqrt{3}\right)\left(5-\sqrt{5}\right)^{3/2}\left(\sqrt{5}+1\right)^3}{6400\,\Gamma\left(\frac{3}{4}\right)^8}$$

1.086610488251637875541063648910 4

1,2,0,2,6,2,4,4,4,14,0,0,14,4,4,0,6,12,8,4,2,20,0,4,20,2,8,10,12,4,4,4,16,32,0,0,26,4,0,12,0,20,8,4,8,6,4,4,42,18,0,8,20,12,16,0,12,48,8,8,0,16,8,12,14,0,16,4,20,24,4,0,36,28,0,2,20,8,8,4,6

A330373 Sum of all parts of all self-conjugate partitions of n.

$$\frac{e^{-\frac{\pi}{24}}\;2^{1/4}}{24}$$

0.043470760943528625521994820367317

0,1,0,3,4,5,6,7,16,18,20,22,36,39,42,60,80,85,90,114,140,168,176,207,264,300,312,378,448,493,540,620,736,825,884,1015,1188,1295,1406,1599,1840,2009,2184,2451,2772,3060,3312,3666,4176,4557,4900,5457,6084,6625,7182,7920,8792,9576,10324,11328,12540

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*A347801 Expansion of (Sum_{k>=0} k^2 * q^(k^2))^2.*

$$\frac{1}{64\,\pi^{3/2}\,\Gamma\left(\frac{3}{4}\right)^2}$$

0.001868648540522138368460656972305 6

0,0,1,0,0,8,0,0,16,0,18,0,0,72,0,0,0,32,81,0,128,0,0,0,0,288,50,0,0,200,0,0,256,0,450,0,0,72,0,0,288,800,0,0,0,648,0,0,0,0,723,0,1152,392,0,0,0,0,882,0,0,1800,0,0,0,1696,0,0,512,0,0,0,1296,1152,2450,0,0,0,0,0,2048,0,162,0,0,4176,0,0,0,3200,1458

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*A347802 Expansion of (Sum_{k>=0} k^2 * q^(k^2))^3.*

$$\frac{1}{512\,\pi^{9/4}\,\Gamma\left(\frac{3}{4}\right)^3}$$

0.000080777691771496507346868329874754

0,0,0,1,0,0,12,0,0,48,0,27,64,0,216,0,0,432,48,243,0,384,972,0,768,0,864,804,0,3456,600,0,0,1968,3888,1350,3072,0,5508,0,0,7776,2400,6075,1728,9600,1944,0,4096,7776,21600,2022,0,3456,17424,0,13824,21552,0,19521,0,31104,15984,0,0,21600,34896,11907

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*A347803 Expansion of (Sum_{k>=0} k^2 * q^(k^2))^4.*

$$\frac{1}{4096\,\pi^3\,\Gamma\left(\frac{3}{4}\right)^4}$$

$$3.491847367995517800076605873298 1 \times 10^{-6}$$

0,0,0,0,1,0,0,16,0,0,96,0,36,256,0,432,256,0,1728,64,486,2304,768,3888,0,3072,7776,1728,7112,0,13824,12864,0,27648,6336,15552,9261,18688,62208,21744,24576,0,72576,51456,24300,117504,38400,101088,9216,93184,155520,86400,142382,62208,352512,67344,0,202752,286176

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*A350642 Expansion of Product_{k>=1} (1-q^(2*k))/(1-q^k)^4.*

$$\frac{2\,e^{-\frac{\pi}{12}}\,\Gamma\left(\frac{3}{4}\right)^3}{\pi^{3/4}}$$

$$1.200386073140290941464371457062 0$$

1,4,13,36,90,208,455,948,1901,3688,6955,12792,23019,40612,70395,120072,201822,334684,548158,887500,1421602,2254460,3541928,5515900,8519173,13055208,19859113,29998024,45012751,67116436,99472320,146580028,214811311,313149460

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*A350643 Expansion of Product_{k>=1} (1-q^(2*k))^2/(1-q^k)^7.*

$$\frac{2\,e^{-\frac{\pi}{8}}\,2^{5/8}\,\Gamma\left(\frac{3}{4}\right)^5}{\pi^{5/4}}$$

$$1.375968004305590757874779552241 3$$

1,7,33,126,419,1260,3509,9185,22842,54395,124784,277059,597644,1256341,2580363,5189185,10236710,19840410,37832553,71060190,131610897,240585292,434431132,775483785,1369359198,2393425484,4143057525,7106240582,12083072562,20375932566

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*A350644 Expansion of Product_{k>=1} (1-q^(2*k))^3/(1-q^k)^10.*

$$\frac{4\,e^{-\frac{\pi}{6}}\,2^{1/4}\,\Gamma\left(\frac{3}{4}\right)^7}{\pi^{7/4}}$$

$$1.577232518134554191486094642038 3$$

1,10,62,300,1235,4522,15130,47084,137990,384370,1024760,2629380,6521693,

15693180,36745810,83935920,187441365,409981826,879717860,1854439520, 3845126929,7850815860,15799770260,31368976420,61490409175,119092108534, 228039325630

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*A360191 G.f. 1 / Product_{n>=1} (1 - x^n)^3 * (1 - x^(2*n-1))^2.*

$$\frac{e^{-\frac{\pi}{24}}\, 2^{7/8}\, \Gamma\left(\frac{3}{4}\right)^3}{\pi^{3/4}}$$

1.254703800258300034398567803531 6

1,5,18,55,149,371,867,1923,4086,8374,16634,32152,60669,112041,202943,361200, 632647,1091917,1859225,3126242,5195715,8541624,13899866,22404091,35787815, 56683294,89061028,138872410,214984454,330532633,504869316,766357010, 1156355165

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*A361535 Expansion of g.f. 1 / Product_{n>=1} ((1 - x^n)^6 * (1 - x^(2*n-1))^4).*

$$\frac{2\, e^{-\frac{\pi}{12}}\, 2^{3/4}\, \Gamma\left(\frac{3}{4}\right)^6}{\pi^{3/2}}$$

1.574281626382620069466746383067 7

1,10,61,290,1172,4212,13833,42262,121625,332764,871641,2197936,5359005, 12679730,29200593,65617892,144189054,310400110,655669910,1360910666, 2779007594,5589070978,11081585154,21679798590,41883282555,79958881544, 150943109191,281926365224

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*A385520 Expansion of Product_{k>0} ((1 - q^(2*k))*(1 - q^(6*k))^3)/((1 - q^k)*(1 - q^(3*k))*(1 - q^(4*k))*(1 - q^(12*k))).*

$$\frac{3^{5/12}\, \Gamma\left(\frac{2}{3}\right)^{1/3}\, \Gamma\left(\frac{3}{4}\right)^{7/3}\, \left(\sqrt{2}\, \left(1+\sqrt{3}\right)\right)^{4/3}\, \left(\sqrt{3}-1\right)}{6\, \pi^{1/6}\, \Gamma\left(\frac{11}{12}\right)^{4/3}\, \Gamma\left(\frac{7}{12}\right)}$$

1.045338204200559455975292782191 8

1,1,1,3,4,5,6,9,13,16,20,27,36,44,54,69,88,107,130,162,200,240,288,351,426,507,602, 723,864,1019,1200,1422,1681,1968,2300,2700,3160,3674,4266,4965,5768,6665,7692, 8892,10260,11792,13536,15552,17844,20407
