$\zeta(5), \zeta(7).....\zeta(331), \zeta(333)$ are irrational number

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Abstract

Using the fact that $\zeta(3)$ is an irrational number, I prove that $\zeta(5)$, $\zeta(7).....\zeta(331)$ and $\zeta(333)$ are irrational numbers.

$\zeta(5)$, $\zeta(7).....\zeta(331)$ and $\zeta(333)$ are confirmed that they were in perfect numerical agreement.

This is because I created an odd-number formula for ζ, and the formula was created by dividing the odd-number for ζ itself into odd and even numbers.

key words
irrational number, $\zeta(3)$, odd-number formula for ζ, $\zeta(5)$, $\zeta(7)$, $\zeta(331)$, $\zeta(333)$

1 Introduction

Write the formula I finally got in advance.

$$\zeta(2m+1) = \frac{(2^{2m+1}-4)}{(2^{2m+1}-1)}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^{2m-1}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{2m-1}}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{2m+1}} \tag{1}$$

m is a positive integer.

and

$$\zeta(2m+1) = \zeta(2m-1)\frac{(2^{2m+1}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{2m+1}}}{(2^{2m+1}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{2m-1}}} \tag{2}$$

m is a positive integer.
and

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Eq.(1) and Eq.(2) are equation these are modification of Eq.(3).

$$\zeta(2m-1) = \frac{2^{2m-1}}{2^{2m-1}-1} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{2m-1}} \tag{3}$$

m is a positive integer.

In detail

$$\zeta(3) = \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3} + \sum_{n=1}^{\infty} \frac{1}{(2n)^3} = \frac{1}{2^3} \sum_{n=1}^{\infty} \frac{1}{n^3} + \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3} = \frac{1}{2^3}\zeta(3) + \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3} \tag{4}$$

$$\zeta(3) = \frac{2^3}{2^3-1} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3} = \frac{8}{7} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3} \tag{5}$$

do the same

$$\zeta(5) = \sum_{n=1}^{\infty} \frac{1}{(2n-1)^5} + \sum_{n=1}^{\infty} \frac{1}{(2n)^5} = \frac{1}{2^5} \sum_{n=1}^{\infty} \frac{1}{n^5} + \sum_{n=1}^{\infty} \frac{1}{(2n-1)^5} = \frac{1}{2^5}\zeta(5) + \sum_{n=1}^{\infty} \frac{1}{(2n-1)^5} \tag{6}$$

$$\zeta(5) = \frac{2^5}{2^5-1} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^5} = \frac{32}{31} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^5} \tag{7}$$

do the same

$$\zeta(7) = \sum_{n=1}^{\infty} \frac{1}{(2n-1)^7} + \sum_{n=1}^{\infty} \frac{1}{(2n)^7} = \frac{1}{2^7} \sum_{n=1}^{\infty} \frac{1}{n^7} + \sum_{n=1}^{\infty} \frac{1}{(2n-1)^7} = \frac{1}{2^7}\zeta(7) + \sum_{n=1}^{\infty} \frac{1}{(2n-1)^7} \tag{8}$$

$$\zeta(7) = \frac{2^7}{2^7-1} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^7} = \frac{128}{127} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^7} \tag{9}$$

Use these for $\zeta(9), \zeta(11), \zeta(13)$ etc.

and
Detailed description

$$\zeta(3) = \frac{2^3}{2^3-1} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3} = \frac{8}{7} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3} \tag{10}$$

$$\zeta(5) = \frac{2^5}{2^5-1} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^5} = \frac{32}{31} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^5} \tag{11}$$

Multiply $\zeta(3)$ and $\zeta(5)$

$$\zeta(5)\frac{8}{7}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}=\zeta(3)\frac{32}{31}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5} \tag{12}$$

$$\zeta(5)\frac{8}{7}=\zeta(3)\frac{32}{31}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{13}$$

$$\zeta(5)=\zeta(3)\frac{28}{31}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{14}$$

2 Discussion

Example 1

from Eq.(3)
if m=3

$$\zeta(5)=\frac{32}{31}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5} \tag{15}$$

if m=4

$$\zeta(7)=\frac{128}{127}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7} \tag{16}$$

Multiply $\zeta(5)$ and $\zeta(7)$.

$$\zeta(7)\frac{32}{31}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5}=\zeta(5)\frac{128}{127}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7} \tag{17}$$

$$\zeta(7)\frac{32}{31}=\zeta(5)\frac{128}{127}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5}} \tag{18}$$

$$\zeta(7)=\zeta(5)\frac{31}{32}\frac{128}{127}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5}} \tag{19}$$

$$\zeta(7)=\zeta(5)\frac{124}{127}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5}} \tag{20}$$

The new formula, Eq.(1), has been followed.

Do the same for $\zeta(9), \zeta(11), \zeta(13)$ etc.

(Proof 1)
If $\zeta(5)$ is assumed to be rational number. $\zeta(5)=\frac{s}{t}$, s and t are integer.

from formula Eq.(1).
$\zeta(5)=\zeta(3)\frac{28\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5}}{31\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}}$ $\frac{28\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5}}{31\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}}=\frac{o}{p}$ o, p are assumed to be integer.

$\zeta(5)=\zeta(3)\frac{o}{p}$ it equal $\zeta(3)=\zeta(5)\frac{p}{o}=\frac{sp}{to}$ But, $\zeta(3)\neq\frac{sp}{to}$

This is because $\zeta(3)$ is known to be an irrational number.
This contradicts.

$\zeta(5)$ is irrational number.

(Proof end)

Do the same, sequentially prove that $\zeta(7),\zeta(9),\zeta(11)$ etc. are irrational numbers.

Assuming that this formula Eq.(1) holds even when $\zeta(3)$

$$\zeta(3)=\zeta(1)\frac{4}{7}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^1}}=\frac{4}{7}\zeta(1)\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^1}} \tag{21}$$

$$=\frac{4}{7}\Big[\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^1}+\sum_{n=1}^{\infty}\frac{1}{(2n)^1}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^1}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3} \tag{22}$$

$$=\frac{4}{7}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^1}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^1}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3} \tag{23}$$

If $\infty=10000$
The calculator gives the following results:

$$\zeta(3)\approx\zeta(1)\frac{4}{7}\frac{\sum_{n=1}^{10000}\frac{1}{(2n-1)^3}}{\sum_{n=1}^{10000}\frac{1}{(2n-1)^1}}=\infty \tag{24}$$

$$\zeta(3)\approx\frac{4}{7}\Big[1+\frac{\sum_{n=1}^{10000}\frac{1}{(2n)^1}}{\sum_{n=1}^{10000}\frac{1}{(2n-1)^1}}\Big]\sum_{n=1}^{10000}\frac{1}{(2n-1)^3}=\texttt{can not calculate.} \tag{25}$$

$$\zeta(1)=\sum_{n=1}^{\infty}\frac{1}{(2n-1)^1}+\sum_{n=1}^{\infty}\frac{1}{(2n)^1}=\infty \qquad \frac{\sum_{n=1}^{10000}\frac{1}{(2n)^1}}{\sum_{n=1}^{10000}\frac{1}{(2n-1)^1}}=\texttt{can not calculate.} \tag{26}$$

But
when assuming $\infty = 10^{12}$

$$\sum_{n=1}^{10^{12}} \frac{1}{(2n)^1} = 14.104118390415290534411204731480719794461021933075937155602... \tag{27}$$

$$\sum_{n=1}^{10^{12}} \frac{1}{(2n-1)^1} = 14.797265570974985843828436915438896362536522067436184597 22... \tag{28}$$

$$\sum_{n=1}^{10^{12}} \frac{1}{(2n-1)^3} = 1.051799790264644999724770828822518741919363005797952146568... \tag{29}$$

$\zeta(3) \approx \frac{4}{7}[1 + \frac{14.10411839041529}{14.79726557097498}] \times 1.0517997902646449997$

=1.173902973323675078443392566878600895507141148997041472187...

And
when assuming $\infty = 10^{16}$

$$\sum_{n=1}^{10^{16}} \frac{1}{(2n)^1} = 18.709288576403131927447187682516114459663224 9... \tag{30}$$

$$\sum_{n=1}^{10^{16}} \frac{1}{(2n-1)^1} = 19.402435756963077211864419803974291652738725... \tag{31}$$

$$\sum_{n=1}^{10^{16}} \frac{1}{(2n-1)^3} = 1.051799790264644999724770891322518116919363... \tag{32}$$

$\zeta(3) \approx \frac{4}{7}[1 + \frac{18.7092885764031319}{19.402435756963}] \times 1.0517997902646449997$

=1.180585311558045345860831390748451768142635776092183165622...

And
when assuming $\infty = 10^{22}$

$$\sum_{n=1}^{10^{22}} \frac{1}{(2n)^1} = 25.617043855385268954501187046569207499133196042469797869 10... \tag{33}$$

$$\sum_{n=1}^{10^{22}} \frac{1}{(2n-1)^1} = 26.310191035945214263918394168027384067208696177455... \tag{34}$$

$$\sum_{n=1}^{10^{22}} \frac{1}{(2n-1)^3} = 1.051799790264644999724770891322518741919363... \tag{35}$$

$\zeta(3) \approx \frac{4}{7}[1 + \frac{25.6170438553852689545}{26.3101910359452142639}] \times 1.0517997902646449997$

=1.18622268986636194786...

And
when assuming $\infty = 10^{30}$

$$\sum_{n=1}^{10^{30}} \frac{1}{(2n)^1} = 34.827384227361451690573127865306914329537 6... \tag{36}$$

$$\sum_{n=1}^{10^{30}} \frac{1}{(2n-1)^1} = 35.520531407921396999990359986764840897613 1... \tag{37}$$

$$\sum_{n=1}^{10^{30}} \frac{1}{(2n-1)^3} = 1.051799790264644999724770891322518741919363... \tag{38}$$

$\zeta(3) \approx \frac{4}{7}[1 + \frac{34.82738422736145169}{35.52053140792139699999}] \times 1.0517997902646449997$

=1.190328441896879612155803403161594612984488432917342871853...

And
when assuming $\infty = 10^{38}$

$$\sum_{n=1}^{10^{38}} \frac{1}{(2n)^1} = 44.037724599337634426645093684044121159944 5... \tag{39}$$

$$\sum_{n=1}^{10^{38}} \frac{1}{(2n-1)^1} = 44.730871779897579736062325805502297728017 5... \tag{40}$$

$$\sum_{n=1}^{10^{38}} \frac{1}{(2n-1)^3} = 1.051799790264644999724770891322518741919363... \tag{41}$$

$\zeta(3) \approx \frac{4}{7}[1 + \frac{44.037724599337634426645}{44.730871779897579736}] \times 1.05179979026464499972477$

=1.192743398636392258768511285226731366261 08...

And
when assuming $\infty = 10^{58}$

$$\sum_{n=1}^{10^{58}} \frac{1}{(2n)^1} = 67.063575529278091266825008 23... \tag{42}$$

$$\sum_{n=1}^{10^{58}} \frac{1}{(2n-1)^1} = 67.756722709838036576242 24... \tag{43}$$

$$\sum_{n=1}^{10^{58}} \frac{1}{(2n-1)^3} = 1.051799790264644999724 77... \tag{44}$$

$\zeta(3) \approx \frac{4}{7}[1 + \frac{67.063575529278}{67.756722709838}] \times 1.0517997902646449997 24 77$

=1.195908418404318628091466004029327358425 49...

And
when assuming $\infty = 10^{116}$

$$\sum_{n=1}^{10^{116}} \frac{1}{(2n)^1} \tag{45}$$

$$= 133.838543226105416103346760416734325256384966008438794409 3... \tag{46}$$

$$\sum_{n=1}^{10^{116}} \frac{1}{(2n-1)^1} \tag{47}$$

$$= 134.531690406665361412763992538192501824460466142799049663 4... \tag{48}$$

$$\sum_{n=1}^{10^{116}} \frac{1}{(2n-1)^3} \tag{49}$$

$$= 1.051799790264644999724770891322518741919363005797936521568... \tag{50}$$

$\zeta(3) \approx \frac{4}{7}[1 + \frac{133.8385432261054161}{134.5316904066653614}] \times 1.05179979026464499972477$

=1.198960226269639697269085949373100951783586227399769978492...

And
when assuming $\infty = 10^{399}$

$$\sum_{n=1}^{10^{399}} \frac{1}{(2n)^1} \tag{51}$$

$$= 459.654333884762880391892551254571860631940826649410170518 0... \tag{52}$$

$$\sum_{n=1}^{10^{399}} \frac{1}{(2n-1)^1} \tag{53}$$

$$= 460.347481065322825701309783376030037200016326783770425772 1... \tag{54}$$

$$\sum_{n=1}^{10^{399}} \frac{1}{(2n-1)^3} \tag{55}$$

$$= 1.051799790264644999724770891322518741919363005797936521568... \tag{56}$$

$\zeta(3) \approx \frac{4}{7}[1 + \frac{459.65433388476288}{460.3474810653228257}] \times 1.05179979026464499972477$

=1.201151932037161379199952769513411110608627462766818854800...

And

when assuming $\infty = 10^{1999}$

$$\sum_{n=1}^{10^{1999}} \frac{1}{(2n)^1} \tag{57}$$

$$= 2301.722408279999427606285715002063226712822017552428551344... \tag{58}$$

$$\sum_{n=1}^{10^{1999}} \frac{1}{(2n-1)^1} \tag{59}$$

$$= 2302.415555460559372915702947123521403280897517686788806598... \tag{60}$$

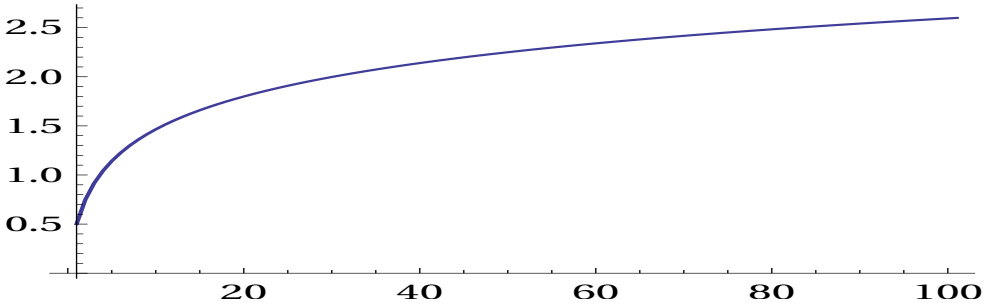
$$\sum_{n=1}^{10^{1999}} \frac{1}{(2n-1)^3} \tag{61}$$

$$= 1.051799790264644999724770891322518741919363005797936521568... \tag{62}$$

$\zeta(3) \approx \frac{4}{7}[1 + \frac{2301.7224082799994276}{2302.4155554605593729157}] \times 1.051799790264644999724770891322518741919363005797936521568...$

$=1.201875962244883729612910417552589813371555291298009320594...$

And
when assuming $\infty = 10^{2199}$
The calculator could not calculate any more. It seems to be the upper limit.
The value increases as shown below.
Below is a graph of $\sum_{n=1}^{10^{2199}} \frac{1}{(2n)^1}$.



$$\sum_{n=1}^{10^{2199}} \frac{1}{(2n)^1} \tag{63}$$

$$= 2531.980917579403996008084860470499647472932166415305848948.... \tag{64}$$

$$\sum_{n=1}^{10^{2199}} \frac{1}{(2n-1)^1} \tag{65}$$

$$= 2532.674064759963941317502092591957824041007666549666104202... \tag{66}$$

$$\sum_{n=1}^{10^{2199}} \frac{1}{(2n-1)^3} \tag{67}$$

$$= 1.0517997902646449997247708913225187419193630057979365215 68... \tag{68}$$

$\zeta(3) \approx \frac{4}{7}[1 + \frac{2531.980917579403996}{2532.6740647599639413175}] \times 1.05179979026464499972477$

=1.20189241252005819109129510404220791562060036309237034810 4...

$\zeta(3) = 1.20205690315959428539973816151144999...$

The formula Eq.(1) seems to hold.

I thought $\zeta(1) = \infty$, but I was surprised to realize that it wasn't.

This may imply $\frac{\infty}{\infty} = 1$

My first formula Eq.(3)
when m=1 and from Eq.(65)Eq.(66)

$$\zeta(1) = \frac{2^1}{2^1 - 1} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^1} \approx 2 \sum_{n=1}^{10^{2199}} \frac{1}{(2n-1)^1} \tag{69}$$

$$= 2 \times 2532.6740647599639413175020925919578240410076665496661042 02... \tag{70}$$

This is an error because n=10^{2199}.

If I transform Eq.(2)
Use $\infty = 10^{2199}$.

$$\zeta(1) = \zeta(3)\frac{7}{4}\frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^1}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \approx \zeta(3)\frac{7}{4} \times \frac{2532.6740647599639413175020925919578240410076665496661042 02...}{1.0517997902646449997247708913225187419193630057979365215 68...} \tag{71}$$

$$\approx \zeta(3)\frac{7}{4} \times \frac{2532.6740647599639413175}{1.0517997902646449997247} = 5603.7075056254558602670... \tag{72}$$

Even at this time, this is an error because n=2199.

$$\zeta(3) = \zeta(1)\frac{4}{7}\frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^1}} = \zeta(1)\frac{(2^3-4)\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}}{(2^3-1)\sum_{n=1}^{\infty} \frac{1}{(2n-1)^1}} = \frac{4}{7}\Big[1 + \frac{\sum_{n=1}^{\infty} \frac{1}{(2n)^1}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^1}}\Big]\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3} \tag{73}$$

$$\zeta(5) = \zeta(3)\frac{28}{31}\frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^5}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} = \zeta(3)\frac{(2^5-4)\sum_{n=1}^{\infty} \frac{1}{(2n-1)^5}}{(2^5-1)\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} = \frac{28}{31}\Big[1 + \frac{\sum_{n=1}^{\infty} \frac{1}{(2n)^3}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}}\Big]\sum_{n=1}^{\infty} \frac{1}{(2n-1)^5} \tag{74}$$

$$\zeta(7) = \zeta(5)\frac{124}{127}\frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^7}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^5}} = \zeta(5)\frac{(2^7-4)\sum_{n=1}^{\infty} \frac{1}{(2n-1)^7}}{(2^7-1)\sum_{n=1}^{\infty} \frac{1}{(2n-1)^5}} = \frac{124}{127}\Big[1 + \frac{\sum_{n=1}^{\infty} \frac{1}{(2n)^5}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^5}}\Big]\sum_{n=1}^{\infty} \frac{1}{(2n-1)^7} \tag{75}$$

$$\zeta(9)=\zeta(7)\frac{508\sum_{n=1}^{\infty}\frac{1}{(2n-1)^9}}{511\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}=\zeta(7)\frac{(2^9-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^9}}{(2^9-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}=\frac{508}{511}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^7}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^9} \tag{76}$$

$$\zeta(11)=\zeta(9)\frac{2044\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{11}}}{2047\sum_{n=1}^{\infty}\frac{1}{(2n-1)^9}}=\zeta(9)\frac{(2^{11}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{11}}}{(2^{11}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^9}}=\frac{2044}{2047}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^9}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^9}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{11}} \tag{77}$$

$$\zeta(13)=\zeta(11)\frac{8188\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{13}}}{8191\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{11}}}=\zeta(11)\frac{(2^{13}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{13}}}{(2^{13}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{11}}}=\frac{8188}{8191}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^{11}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{11}}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{13}} \tag{78}$$

$$\zeta(15)=\zeta(13)\frac{32764\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{15}}}{32767\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{13}}}=\zeta(13)\frac{(2^{15}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{15}}}{(2^{15}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{13}}}=\frac{32764}{32767}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^{13}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{13}}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{15}} \tag{79}$$

$$\zeta(17)=\zeta(15)\frac{131068\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{17}}}{131071\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{15}}}=\zeta(15)\frac{(2^{17}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{17}}}{(2^{17}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{15}}}=\frac{131068}{131071}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^{15}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{15}}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{17}} \tag{80}$$

$$\zeta(19)=\zeta(17)\frac{524284\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{19}}}{524287\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{17}}}=\zeta(17)\frac{(2^{19}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{19}}}{(2^{19}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{17}}}=\frac{524284}{524287}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^{17}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{17}}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{19}} \tag{81}$$

$$\zeta(21)=\zeta(19)\frac{2097148\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{21}}}{2097151\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{19}}}=\zeta(19)\frac{(2^{21}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{21}}}{(2^{17}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{19}}}=\frac{2097148}{2097151}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^{19}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{19}}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{21}} \tag{82}$$

$$\zeta(23)=\zeta(21)\frac{8388604\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{23}}}{8388607\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{21}}}=\zeta(21)\frac{(2^{23}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{23}}}{(2^{23}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{21}}}=\frac{8388604}{8388607}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^{21}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{21}}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{23}} \tag{83}$$

$$\zeta(25)=\zeta(23)\frac{33554428\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{25}}}{33554431\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{23}}}=\zeta(23)\frac{(2^{25}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{25}}}{(2^{25}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{23}}}=\frac{33554428}{33554431}\Big[1+\frac{\sum_{n=1}^{\infty}\frac{1}{(2n)^{23}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{23}}}\Big]\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{25}} \tag{84}$$

Hereinafter, Eq.(1) is omitted.

$$\zeta(27)=\zeta(25)\frac{134217724\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{27}}}{134217727\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{25}}}=\zeta(25)\frac{(2^{27}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{27}}}{(2^{27}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{25}}} \tag{85}$$

$$\zeta(29)=\zeta(27)\frac{536870908\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{29}}}{536870911\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{27}}}=\zeta(27)\frac{(2^{29}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{29}}}{(2^{29}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{27}}} \tag{86}$$

$$\zeta(31)=\zeta(29)\frac{2147483644\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{31}}}{2147483647\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{29}}}=\zeta(29)\frac{(2^{31}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{31}}}{(2^{31}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{29}}} \tag{87}$$

$$\zeta(33)=\zeta(31)\frac{8589934588\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{33}}}{8589934591\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{31}}}=\zeta(31)\frac{(2^{33}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{33}}}{(2^{33}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{31}}} \tag{88}$$

$$\zeta(35)=\zeta(33)\frac{34359738364\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{35}}}{34359738367\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{33}}}=\zeta(33)\frac{(2^{35}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{35}}}{(2^{35}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{33}}} \tag{89}$$

$$\zeta(37)=\zeta(35)\frac{137438953468\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{37}}}{137438953471\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{35}}}=\zeta(35)\frac{(2^{37}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{37}}}{(2^{37}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{35}}} \tag{90}$$

$$\zeta(39)=\zeta(37)\frac{549755813884\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{39}}}{549755813887\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{37}}}=\zeta(37)\frac{(2^{39}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{39}}}{(2^{39}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{37}}} \tag{91}$$

$$\zeta(41)=\zeta(39)\frac{2199023255548\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{41}}}{2199023255551\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{39}}}=\zeta(39)\frac{(2^{41}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{41}}}{(2^{41}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{39}}} \tag{92}$$

$$\zeta(43)=\zeta(41)\frac{8796093022204\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{43}}}{8796093022207\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{41}}}=\zeta(41)\frac{(2^{43}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{43}}}{(2^{43}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{41}}} \tag{93}$$

$$\zeta(45)=\zeta(43)\frac{35184372088828\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{45}}}{35184372088831\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{43}}}=\zeta(43)\frac{(2^{45}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{45}}}{(2^{45}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{43}}} \tag{94}$$

$$\zeta(47)=\zeta(45)\frac{140737488355324\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{47}}}{140737488355327\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{45}}}=\zeta(45)\frac{(2^{47}-4)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{47}}}{(2^{47}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{45}}} \tag{95}$$

Since then, no calculation.

$$\zeta(49) = \zeta(47)\frac{562949953421308\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{49}}}{562949953421311\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{47}}} \tag{96}$$

$$\zeta(51) = \zeta(49)\frac{2251799813685244\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{51}}}{2251799813685247\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{49}}} \tag{97}$$

$$\zeta(53) = \zeta(51)\frac{9007199254740988\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{53}}}{9007199254740991\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{51}}} \tag{98}$$

$$\zeta(55) = \zeta(53)\frac{36028797018963964\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{55}}}{36028797018963967\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{53}}} \tag{99}$$

$$\zeta(57) = \zeta(55)\frac{144115188075855868\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{57}}}{144115188075855871\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{55}}} \tag{100}$$

$$\zeta(59) = \zeta(57)\frac{576460752303423484\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{59}}}{576460752303423487\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{57}}} \tag{101}$$

$$\zeta(61) = \zeta(59)\frac{2305843009213693948\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{61}}}{2305843009213693951\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{59}}} \tag{102}$$

$$\zeta(63) = \zeta(61)\frac{9223372036854775804\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{63}}}{9223372036854775807\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{61}}} \tag{103}$$

$$\zeta(65) = \zeta(63)\frac{36893488147419103228\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{65}}}{36893488147419103231\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{63}}} \tag{104}$$

$$\zeta(67) = \zeta(65)\frac{147573952589676412924\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{67}}}{147573952589676412927\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{65}}} \tag{105}$$

$$\zeta(69) = \zeta(67)\frac{590295810358705651708\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{69}}}{590295810358705651711\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{67}}} \tag{106}$$

$$\zeta(71) = \zeta(69)\frac{2361183241434822606844\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{71}}}{2361183241434822606847\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{69}}} \tag{107}$$

$$\zeta(73) = \zeta(71)\frac{944473296573929042738 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{73}}}{944473296573929042739 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{71}}} \tag{108}$$

$$\zeta(75) = \zeta(73)\frac{377789318629571617095 64\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{75}}}{377789318629571617095 67\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{73}}} \tag{109}$$

$$\zeta(77) = \zeta(75)\frac{151115727451828646838 268\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{77}}}{151115727451828646838 271\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{75}}} \tag{110}$$

$$\zeta(79) = \zeta(77)\frac{604462909807314587353 084\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{79}}}{604462909807314587353 087\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{77}}} \tag{111}$$

$$\zeta(81) = \zeta(79)\frac{241785163922925834941 2348\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{81}}}{241785163922925834941 2351\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{79}}} \tag{112}$$

$$\zeta(83) = \zeta(81)\frac{967140655691703339764 9404\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{83}}}{967140655691703339764 9407\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{81}}} \tag{113}$$

$$\zeta(85) = \zeta(83)\frac{386856262276681335905 97628\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{85}}}{386856262276681335905 97631\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{83}}} \tag{114}$$

$$\zeta(87) = \zeta(85)\frac{154742504910672534362 390524\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{87}}}{154742504910672534362 390527\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{85}}} \tag{115}$$

$$\zeta(89) = \zeta(87)\frac{618970019642690137449 562108\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{89}}}{618970019642690137449 562111\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{87}}} \tag{116}$$

$$\zeta(91) = \zeta(89)\frac{247588007857076054979 8248444\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{91}}}{247588007857076054979 8248447\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{89}}} \tag{117}$$

$$\zeta(93) = \zeta(91)\frac{990352031428304219919 2993788\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{93}}}{990352031428304219919 2993791\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{91}}} \tag{118}$$

$$\zeta(95) = \zeta(93)\frac{396140812571321687967 71975164\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{95}}}{396140812571321687967 71975167\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{93}}} \tag{119}$$

$$\zeta(97) = \zeta(95)\frac{1584563250285286751870879006668\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{97}}}{1584563250285286751870879006671\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{95}}} \tag{120}$$

$$\zeta(99) = \zeta(97)\frac{6338253001141147007483516026684\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{99}}}{6338253001141147007483516026687\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{97}}} \tag{121}$$

$$\zeta(101) = \zeta(99)\frac{2535301200456458802993406410748\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{101}}}{2535301200456458802993406410751\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{99}}} \tag{122}$$

$$\zeta(103) = \zeta(101)\frac{1014120480182583521197362564300 4\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{103}}}{1014120480182583521197362564300 7\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{101}}} \tag{123}$$

$$\zeta(105) = \zeta(103)\frac{4056481920730334084789450257202 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{105}}}{4056481920730334084789450257203 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{103}}} \tag{124}$$

$$\zeta(107) = \zeta(105)\frac{1622592768292133633915780102881 24\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{107}}}{1622592768292133633915780102881 27\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{105}}} \tag{125}$$

$$\zeta(109) = \zeta(107)\frac{6490371073168534535663120411525 08\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{109}}}{6490371073168534535663120411525 11\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{107}}} \tag{126}$$

$$\zeta(111) = \zeta(109)\frac{2596148429267413814265248164610044\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{111}}}{2596148429267413814265248164610047\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{109}}} \tag{127}$$

$$\zeta(113) = \zeta(111)\frac{1038459371706965525706099265844018 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{113}}}{1038459371706965525706099265844019 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{111}}} \tag{128}$$

$$\zeta(115) = \zeta(113)\frac{4153837486827862102824397063376 0764\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{115}}}{4153837486827862102824397063376 0767\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{113}}} \tag{129}$$

$$\zeta(117) = \zeta(115)\frac{1661534994731144841129758825350430 68\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{117}}}{1661534994731144841129758825350430 71\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{115}}} \tag{130}$$

$$\zeta(119) = \zeta(117)\frac{6646139978924579364519035301401722 84\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{119}}}{6646139978924579364519035301401722 87\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{117}}} \tag{131}$$

$$\zeta(121) = \zeta(119)\frac{2658455991569831745807614120560689148\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{121}}}{2658455991569831745807614120560689151\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{119}}} \tag{132}$$

$$\zeta(123) = \zeta(121)\frac{1063382396627932698323045648224275604\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{123}}}{1063382396627932698323045648224275607\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{121}}} \tag{133}$$

$$\zeta(125) = \zeta(123)\frac{4253529586511730793292182592897102 6428\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{125}}}{4253529586511730793292182592897102 6431\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{123}}} \tag{134}$$

$$\zeta(127) = \zeta(125)\frac{1701411834604692317316873037158841057 24\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{127}}}{1701411834604692317316873037158841057 27\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{125}}} \tag{135}$$

$$\zeta(129) = \zeta(127)\frac{6805647338418769269267492148635364229 08\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{129}}}{6805647338418769269267492148635364229 11\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{127}}} \tag{136}$$

$$\zeta(131) = \zeta(129)\frac{2722258935367507707706996859454145691644\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{131}}}{2722258935367507707706996859454145691647\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{129}}} \tag{137}$$

$$\zeta(133) = \zeta(131)\frac{1088903574147003083082798743781658276 6588\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{133}}}{1088903574147003083082798743781658276 6591\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{131}}} \tag{138}$$

$$\zeta(135) = \zeta(133)\frac{4355614296588012332331194975126633106 6364\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{135}}}{4355614296588012332331194975126633106 6367\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{133}}} \tag{139}$$

$$\zeta(137) = \zeta(135)\frac{1742245718635204932932477990050653242654 68\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{137}}}{1742245718635204932932477990050653242654 71\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{135}}} \tag{140}$$

$$\zeta(139) = \zeta(137)\frac{6968982874540819731729911960202612970618 84\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{139}}}{6968982874540819731729911960202612970618 87\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{137}}} \tag{141}$$

$$\zeta(141) = \zeta(139)\frac{2787593149816327892691964784081045188247548\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{141}}}{2787593149816327892691964784081045188247551\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{139}}} \tag{142}$$

$$\zeta(143) = \zeta(141)\frac{1115037259926531157076785913632418075299 0204\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{143}}}{1115037259926531157076785913632418075299 0207\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{141}}} \tag{143}$$

$$\zeta(145)=\zeta(143)\frac{4460149039706124628307143654529672301196082 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{145}}}{4460149039706124628307143654529672301196083 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{143}}} \tag{144}$$

$$\zeta(147)=\zeta(145)\frac{1784059615882449851322857461811868920478433 24\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{147}}}{1784059615882449851322857461811868920478433 27\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{145}}} \tag{145}$$

$$\zeta(149)=\zeta(147)\frac{7136238463529799405291429847247475681913733 08\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{149}}}{7136238463529799405291429847247475681913733 11\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{147}}} \tag{146}$$

$$\zeta(151)=\zeta(149)\frac{2854495385411919762116571938898990272765493 244\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{151}}}{2854495385411919762116571938898990272765493 247\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{149}}} \tag{147}$$

$$\zeta(153)=\zeta(151)\frac{1141798154164767904846628775559596109106197 2988\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{153}}}{1141798154164767904846628775559596109106197 2991\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{151}}} \tag{148}$$

$$\zeta(155)=\zeta(153)\frac{4567192616659071619386515102238384436424789 1964\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{155}}}{4567192616659071619386515102238384436424789 1967\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{153}}} \tag{149}$$

$$\zeta(157)=\zeta(155)\frac{1826877046663628647754606040895353774569915 67868\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{157}}}{1826877046663628647754606040895353774569915 67871\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{155}}} \tag{150}$$

$$\zeta(159)=\zeta(157)\frac{7307508186654514591018424163581415098279662 71484\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{159}}}{7307508186654514591018424163581415098279662 71487\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{157}}} \tag{151}$$

$$\zeta(161)=\zeta(159)\frac{2923003274661805836407369665432566039311865 085948\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{161}}}{2923003274661805836407369665432566039311865 085951\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{159}}} \tag{152}$$

$$\zeta(163)=\zeta(161)\frac{1169201309864722334562947866173026415724746 0343804\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{163}}}{1169201309864722334562947866173026415724746 0343807\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{161}}} \tag{153}$$

$$\zeta(165)=\zeta(163)\frac{4676805239458889338251791464692105662898984 1375228\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{165}}}{4676805239458889338251791464692105662898984 1375231\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{163}}} \tag{154}$$

$$\zeta(167)=\zeta(165)\frac{1870722095783555735300716585876842265159593 65500924\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{167}}}{1870722095783555735300716585876842265159593 65500927\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{165}}} \tag{155}$$

$$\zeta(169)=\zeta(167)\frac{74828883831342229412028663435073690606383746200370 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{169}}}{74828883831342229412028663435073690606383746200371 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{167}}} \tag{156}$$

$$\zeta(171)=\zeta(169)\frac{29931553532536891764811465374029476242553498480148 44\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{171}}}{29931553532536891764811465374029476242553498480148 47\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{169}}} \tag{157}$$

$$\zeta(173)=\zeta(171)\frac{11972621413014756705924586149611790497021399392059388\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{173}}}{11972621413014756705924586149611790497021399392059391\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{171}}} \tag{158}$$

$$\zeta(175)=\zeta(173)\frac{47890485652059026823698344598447161988085597568237564\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{175}}}{47890485652059026823698344598447161988085597568237567\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{173}}} \tag{159}$$

$$\zeta(177)=\zeta(175)\frac{19156194260823610729479337839378864795234239027295026 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{177}}}{19156194260823610729479337839378864795234239027295027 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{175}}} \tag{160}$$

$$\zeta(179)=\zeta(177)\frac{76624777043294442917917351357515459180936956109180108 4\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{179}}}{76624777043294442917917351357515459180936956109180108 7\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{177}}} \tag{161}$$

$$\zeta(181)=\zeta(179)\frac{30649910817317777167166940543006183672374782443672043 48\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{181}}}{30649910817317777167166940543006183672374782443672043 51\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{179}}} \tag{162}$$

$$\zeta(183)=\zeta(181)\frac{12259964326927110866866776217202473468949912977468817404\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{183}}}{12259964326927110866866776217202473468949912977468817407\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{181}}} \tag{163}$$

$$\zeta(185)=\zeta(183)\frac{49039857307708443467467104868809893875799651909875269628\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{185}}}{49039857307708443467467104868809893875799651909875269631\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{183}}} \tag{164}$$

$$\zeta(187)=\zeta(185)\frac{19615942923083377386986841947523957550319860763950107852 4\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{187}}}{19615942923083377386986841947523957550319860763950107852 7\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{185}}} \tag{165}$$

$$\zeta(189)=\zeta(187)\frac{78463771692333509547947367790095830201279443055800431410 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{189}}}{78463771692333509547947367790095830201279443055800431411 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{187}}} \tag{166}$$

$$\zeta(191)=\zeta(189)\frac{31385508676933403819178947116038332080511777222320172564 44\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{191}}}{31385508676933403819178947116038332080511777222320172564 47\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{189}}} \tag{167}$$

$$\zeta(193)=\zeta(191)\frac{1255420347077336152767157884641533283220471088892806902578 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{193}}}{1255420347077336152767157884641533283220471088892806902579 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{191}}} \tag{168}$$

$$\zeta(195)=\zeta(193)\frac{5021681388309344611068631538566133132881884355571227610316 4\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{195}}}{5021681388309344611068631538566133132881884355571227610316 7\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{193}}} \tag{169}$$

$$\zeta(197)=\zeta(195)\frac{2008672555323737844427452615426453253152753742228491044126 68\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{197}}}{2008672555323737844427452615426453253152753742228491044126 71\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{195}}} \tag{170}$$

$$\zeta(199)=\zeta(197)\frac{8034690221294951377709810461705813012611014968913964176506 84\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{199}}}{8034690221294951377709810461705813012611014968913964176506 87\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{197}}} \tag{171}$$

$$\zeta(201)=\zeta(199)\frac{3213876088517980551083924184682325205044405987565585670602748\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{201}}}{3213876088517980551083924184682325205044405987565585670602751\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{199}}} \tag{172}$$

$$\zeta(203)=\zeta(201)\frac{1285550435407192220433569673872930082017762395026234268241100 4\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{203}}}{1285550435407192220433569673872930082017762395026234268241100 7\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{201}}} \tag{173}$$

$$\zeta(205)=\zeta(203)\frac{5142201741628768881734278695491720328071049580104937072964402 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{205}}}{5142201741628768881734278695491720328071049580104937072964403 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{203}}} \tag{174}$$

$$\zeta(207)=\zeta(205)\frac{2056880696651507552693711478196688131228419832041974829185761 24\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{207}}}{2056880696651507552693711478196688131228419832041974829185761 27\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{205}}} \tag{175}$$

$$\zeta(209)=\zeta(207)\frac{8227522786606030210774845912786752524913679328167899316743045 08\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{209}}}{8227522786606030210774845912786752524913679328167899316743045 11\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{207}}} \tag{176}$$

$$\zeta(211)=\zeta(209)\frac{3291009114642412084309938365114701009965471731267159726697218044}{3291009114642412084309938365114701009965471731267159726697218047} \tag{177}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{211}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{209}}} \tag{178}$$

$$\zeta(213)=\zeta(211)\frac{1316403645856964833723975346045880403986188692506863890678887 2188}{1316403645856964833723975346045880403986188692506863890678887 2191} \tag{179}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{213}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{211}}} \tag{180}$$

$$\zeta(215) = \zeta(213)\frac{52656145834278593348959013841835216159447547700274555627155488764}{52656145834278593348959013841835216159447547700274555627155488767} \tag{181}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{215}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{213}}} \tag{182}$$

$$\zeta(217) = \zeta(215)\frac{21062458333711437339583605536734086463779019080109822250862195506 8}{21062458333711437339583605536734086463779019080109822250862195507 1} \tag{183}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{217}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{215}}} \tag{184}$$

$$\zeta(219) = \zeta(217)\frac{84249833334845749358334422146936345855116076320439289003448782028 4}{84249833334845749358334422146936345855116076320439289003448782028 7} \tag{185}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{219}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{217}}} \tag{186}$$

$$\zeta(221) = \zeta(219)\frac{33699933333938299743333768858774538342046430528175715601379512811 48}{33699933333938299743333768858774538342046430528175715601379512811 51} \tag{187}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{221}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{219}}} \tag{188}$$

$$\zeta(223) = \zeta(221)\frac{13479973333575319897333507543509815336818572211270286240551805124604}{13479973333575319897333507543509815336818572211270286240551805124607} \tag{189}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{223}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{221}}} \tag{190}$$

$$\zeta(225) = \zeta(223)\frac{53919893334301279589334030174039261347274288845081144962207220498428}{53919893334301279589334030174039261347274288845081144962207220498431} \tag{191}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{225}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{223}}} \tag{192}$$

$$\zeta(227) = \zeta(225)\frac{21567957333720511835733612069615704538909715538032457984882888199372 4}{21567957333720511835733612069615704538909715538032457984882888199372 7} \tag{193}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{227}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{225}}} \tag{194}$$

$$\zeta(229) = \zeta(227)\frac{86271829334882047342934448278462818155638862152129831939531552797490 8}{86271829334882047342934448278462818155638862152129831939531552797491 1} \tag{195}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{229}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{227}}} \tag{196}$$

$$\zeta(231)=\zeta(229)\frac{3450873173395281893717377931138512726225554486085193277581262111899644}{3450873173395281893717377931138512726225554486085193277581262111899647} \tag{197}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{231}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{229}}} \tag{198}$$

$$\zeta(233)=\zeta(231)\frac{13803492693581127574869511724554050904902217944340773110325048447598588}{13803492693581127574869511724554050904902217944340773110325048447598591} \tag{199}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{233}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{231}}} \tag{200}$$

$$\zeta(235)=\zeta(233)\frac{55213970774324510299478046898216203619608871777363092441300193790394364}{55213970774324510299478046898216203619608871777363092441300193790394367} \tag{201}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{235}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{233}}} \tag{202}$$

$$\zeta(237)=\zeta(235)\frac{22085588309729804119791218759286481447843548710945236976520077516157746 8}{22085588309729804119791218759286481447843548710945236976520077516157747 1} \tag{203}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{237}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{235}}} \tag{204}$$

$$\zeta(239)=\zeta(237)\frac{88342353238919216479164875037145925791374194843780947906080310064630 9884}{88342353238919216479164875037145925791374194843780947906080310064630 9887} \tag{205}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{239}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{237}}} \tag{206}$$

$$\zeta(241)=\zeta(239)\frac{35336941295567686591665950014858370316549677937512379162432124025852395 48}{35336941295567686591665950014858370316549677937512379162432124025852395 51} \tag{207}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{241}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{239}}} \tag{208}$$

$$\zeta(243)=\zeta(241)\frac{14134776518227074636666380005943348126619871175004951664972849610340958204}{14134776518227074636666380005943348126619871175004951664972849610340958207} \tag{209}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{243}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{241}}} \tag{210}$$

$$\zeta(245)=\zeta(243)\frac{56539106072908298546665520023773392506479484700019806659891398441363832828}{56539106072908298546665520023773392506479484700019806659891398441363832831} \tag{211}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{245}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{243}}} \tag{212}$$

$$\zeta(247)=\zeta(245)\frac{22615642429163319418666208009509357002591793880007922663956559376545533 1324}{22615642429163319418666208009509357002591793880007922663956559376545533 1327} \tag{213}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{247}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{245}}} \tag{214}$$

$$\zeta(249)=\zeta(247)\frac{90462569716653277674664832038037428010367175520031690655826237506182132 5308}{90462569716653277674664832038037428010367175520031690655826237506182132 5311} \tag{215}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{249}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{247}}} \tag{216}$$

$$\zeta(251)=\zeta(249)\frac{36185027886661311069865932815214971204146870208012676262330495002472853012 44}{36185027886661311069865932815214971204146870208012676262330495002472853012 47} \tag{217}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{251}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{249}}} \tag{218}$$

$$\zeta(253)=\zeta(251)\frac{14474011154664524427946373126085988481658748083205070504932198000989141204988}{14474011154664524427946373126085988481658748083205070504932198000989141204991} \tag{219}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{253}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{251}}} \tag{220}$$

$$\zeta(255)=\zeta(253)\frac{57896044618658097711785492504343953926634992332820282019728792003956564819964}{57896044618658097711785492504343953926634992332820282019728792003956564819967} \tag{221}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{255}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{253}}} \tag{222}$$

$$\zeta(257)=\zeta(255)\frac{23158417847463239084714197001737581570653996933128112807891516801582625927 9868}{23158417847463239084714197001737581570653996933128112807891516801582625927 9871} \tag{223}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{257}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{255}}} \tag{224}$$

$$\zeta(259)=\zeta(257)\frac{926336713898529563388567880069503262826159877325124512315660672063305037119484}{926336713898529563388567880069503262826159877325124512315660672063305037119487} \tag{225}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{259}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{257}}} \tag{226}$$

$$\zeta(261)=\zeta(259)\frac{37053468555941182535542715202780130513046395093004980492626426882532201484779 48}{37053468555941182535542715202780130513046395093004980492626426882532201484779 51} \tag{227}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{261}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{259}}} \tag{228}$$

$$\zeta(263)=\zeta(261)\frac{14821387422376473014217086081112052205218558037201992197050570753012880593911804}{14821387422376473014217086081112052205218558037201992197050570753012880593911807} \tag{229}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{263}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{261}}} \tag{230}$$

$$\zeta(265)=\zeta(263)\frac{592855496895058920568683443244482088208742321488079687882022830120515223756472 28}{592855496895058920568683443244482088208742321488079687882022830120515223756472 31} \tag{231}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{265}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{263}}} \tag{232}$$

$$\zeta(267)=\zeta(265)\frac{237142198758023568227473377297792835283496928595231875152809132048206089502588924}{237142198758023568227473377297792835283496928595231875152809132048206089502588927} \tag{233}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{267}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{265}}} \tag{234}$$

$$\zeta(269)=\zeta(267)\frac{948568795032094272909893509191171341133987714380927500611236528192824358010355708}{948568795032094272909893509191171341133987714380927500611236528192824358010355711} \tag{235}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{269}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{267}}} \tag{236}$$

$$\zeta(271) = \zeta(269)\frac{3794275180128377091639574036764685364535950857523710002444946112771297432041422844}{3794275180128377091639574036764685364535950857523710002444946112771297432041422847} \tag{237}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{271}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{269}}} \tag{238}$$

$$\zeta(273) = \zeta(271)\frac{151771007205135083665582961470587414581438034300948400097797844510851897281656913 88}{151771007205135083665582961470587414581438034300948400097797844510851897281656913 91} \tag{239}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{273}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{271}}} \tag{240}$$

$$\zeta(275) = \zeta(273)\frac{607084028820540334662331845882349658325752137203793600391191378043407589126627655 64}{607084028820540334662331845882349658325752137203793600391191378043407589126627655 67} \tag{241}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{275}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{273}}} \tag{242}$$

$$\zeta(277) = \zeta(275)\frac{2428336115282161338649327383529398633303008548815174401564765512173630356506510622 68}{2428336115282161338649327383529398633303008548815174401564765512173630356506510622 71} \tag{243}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{277}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{275}}} \tag{244}$$

$$\zeta(279) = \zeta(277)\frac{9713344461128645354597309534117594533212034195260697606259062048694521426026042490 84}{9713344461128645354597309534117594533212034195260697606259062048694521426026042490 87} \tag{245}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{279}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{277}}} \tag{246}$$

$$\zeta(281) = \zeta(279)\frac{3885337784451458141838923813647037813284813678104279042503624819477808570410416996 348}{3885337784451458141838923813647037813284813678104279042503624819477808570410416996 351} \tag{247}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{281}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{279}}} \tag{248}$$

$$\zeta(283) = \zeta(281)\frac{1554135113780583256735569525458815125313925471241711617001449927791123428164166798 5404}{1554135113780583256735569525458815125313925471241711617001449927791123428164166798 5407} \tag{249}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{283}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{281}}} \tag{250}$$

$\zeta(285)=$

$$\zeta(283)\frac{6216540455122333026942278101835260501255701884966846468005799711164493712656667194162 8}{6216540455122333026942278101835260501255701884966846468005799711164493712656667194163 1} \tag{251}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{285}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{283}}} \tag{252}$$

$\zeta(287)=$

$$\zeta(285)\frac{2486616182048933210776911240734104200502280753986738587202319884465797485062666877665 24}{2486616182048933210776911240734104200502280753986738587202319884465797485062666877665 27} \tag{253}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{287}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{285}}} \tag{254}$$

$\zeta(289)=$

$$\zeta(287)\frac{9946464728195732843107644962936416802009123015946954348809279537863189940250667510661 08}{9946464728195732843107644962936416802009123015946954348809279537863189940250667510661 11} \tag{255}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{289}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{287}}} \tag{256}$$

$\zeta(291)=$

$$\zeta(289)\frac{3978585891278293137243057985174566720803649206378781739523711815145275976100267004264 444}{3978585891278293137243057985174566720803649206378781739523711815145275976100267004264 447} \tag{257}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{291}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{289}}} \tag{258}$$

$\zeta(293)=$

$$\zeta(291)\frac{1591434356511317254897223194069826688321459682551512695809484726058110390440106801705778 8}{1591434356511317254897223194069826688321459682551512695809484726058110390440106801705779 1} \tag{259}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{293}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{291}}} \tag{260}$$

$\zeta(295)=$

$$\zeta(293)\frac{6365737426045269019588892776279306753285838730206050783237938904232441561760427206823116 4}{6365737426045269019588892776279306753285838730206050783237938904232441561760427206823116 7} \tag{261}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{295}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{293}}} \tag{262}$$

$\zeta(297)=$

$$\zeta(295)\frac{2546294970418107607835557110511722701314335492082420313295175561692976624704170882729246 68}{2546294970418107607835557110511722701314335492082420313295175561692976624704170882729246 71} \tag{263}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{297}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{295}}} \tag{264}$$

$\zeta(299)=$

$$\zeta(297)\frac{1018517988167243043134222844204689080525734196832968125318070224677190649881668353091698 684}{1018517988167243043134222844204689080525734196832968125318070224677190649881668353091698 687} \tag{265}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{299}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{297}}} \tag{266}$$

$\zeta(301)=$

$$\zeta(299)\frac{4074071952668972172536891376818756322102936787331872501272280898708762599526673412366794 748}{4074071952668972172536891376818756322102936787331872501272280898708762599526673412366794 751} \tag{267}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{301}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{299}}} \tag{268}$$

$\zeta(303)=\zeta(301)\times$

$$\frac{4074071952668972172536891376818756322102936787331872501272280898708762599526673412366794 748}{4074071952668972172536891376818756322102936787331872501272280898708762599526673412366794 751} \tag{269}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{303}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{301}}} \tag{270}$$

$\zeta(305)=\zeta(303)\times$

$$\frac{6518515124270355476059026202910010115364698859730996002035649437934020159242677459786871 6028}{6518515124270355476059026202910010115364698859730996002035649437934020159242677459786871 6031} \tag{271}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{305}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{303}}} \tag{272}$$

$\zeta(307)=\zeta(305)\times$

$$\frac{2607406049708142190423610481164004046145879543892398400814259775173608063697070983914748641 24}{2607406049708142190423610481164004046145879543892398400814259775173608063697070983914748641 27} \tag{273}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{307}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{305}}} \tag{274}$$

$\zeta(309)=\zeta(307)\times$

$$\frac{1042962419883256876169444192465601618458351817556959360325703910069443225478828393565899456508}{1042962419883256876169444192465601618458351817556959360325703910069443225478828393565899456511} \tag{275}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{309}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{307}}} \tag{276}$$

$\zeta(311)=\zeta(309)\times$

$$\frac{4171849679533027504677776769862406473833407270227837441302815640277772901915313574263597826047}{4171849679533027504677776769862406473833407270227837441302815640277772901915313574263597826047} \tag{277}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{311}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{309}}} \tag{278}$$

$\zeta(313)=\zeta(311)\times$

$$\frac{1668739871813211001871110707944962589533362908091134976521126256111109160766125429705439130 4188}{1668739871813211001871110707944962589533362908091134976521126256111109160766125429705439130 4191} \tag{279}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{313}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{311}}} \tag{280}$$

$\zeta(315)=\zeta(313)\times$

$$\frac{6674959487252844007484442831779850358133451632364539906084505024444436643064501718821756521 6764}{6674959487252844007484442831779850358133451632364539906084505024444436643064501718821756521 6767} \tag{281}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{315}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{313}}} \tag{282}$$

$\zeta(317)=\zeta(315)\times$

$$\frac{266998379490113760299377713271194014325338065294581596243380200977777465722580068752870260867068}{266998379490113760299377713271194014325338065294581596243380200977777465722580068752870260867071} \tag{283}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{317}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{315}}} \tag{284}$$

$\zeta(319)=\zeta(317)\times$

$$\frac{106799351796045504119751085308477605730135226117832638497352080391110986289032027501148104346828 4}{106799351796045504119751085308477605730135226117832638497352080391110986289032027501148104346828 7} \tag{285}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{319}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{317}}} \tag{286}$$

$\zeta(321)=\zeta(319)\times$

$$\frac{427197407184182016479004341233910422920540904471330553989408321564443945156128110004592417387314 8}{427197407184182016479004341233910422920540904471330553989408321564443945156128110004592417387315 1} \tag{287}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{321}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{319}}} \tag{288}$$

$\zeta(323)=\zeta(321)\times$

$$\frac{170878962873672806591601736493564169168216361788532221595763328625777578062451244001836966954926 04}{170878962873672806591601736493564169168216361788532221595763328625777578062451244001836966954926 07} \tag{289}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{323}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{321}}} \tag{290}$$

$\zeta(325)=\zeta(323)\times$

$$\frac{683515851494691226366406945974256676672865447154128886383053314503110312249804976007347867819704 28}{683515851494691226366406945974256676672865447154128886383053314503110312249804976007347867819704 31} \tag{291}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{325}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{323}}} \tag{292}$$

$\zeta(327)=\zeta(325)\times$

$$\frac{273406340597876490546562778389702670669146178861651554553221325801244124899921990402939147127881724}{273406340597876490546562778389702670669146178861651554553221325801244124899921990402939147127881727} \tag{293}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{327}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{325}}} \tag{294}$$

$\zeta(329)=\zeta(327)\times$

$$\frac{1093625362391505962186251113558810682676584715446606218212885303204976499599687961611756588511526911}{1093625362391505962186251113558810682676584715446606218212885303204976499599687961611756588511526911} \tag{295}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{329}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{327}}} \tag{296}$$

$\zeta(331)=\zeta(329)\times$

$$\frac{437450144956602384874500445423524273070633886178642487285154121281990599839875184644702635404610764 4}{437450144956602384874500445423524273070633886178642487285154121281990599839875184644702635404610764 7} \tag{297}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{331}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{329}}} \tag{298}$$

$\zeta(333)=\zeta(331)\times$

$$\frac{1749800579826409539498001781694097092282535544714569949140616485127962399359500738578810541618443058 8}{1749800579826409539498001781694097092282535544714569949140616485127962399359500738578810541618443059 1} \tag{299}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{333}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{331}}} \tag{300}$$

$\zeta(335), \zeta(337)$ etc. can also be expressed by these equations.

$\zeta(5), \zeta(7)$.....$\zeta(331), \zeta(333)$ are irrational numbers.

Example 2

That $\zeta(5)$ is an irrational number is already proven at **Example 1** (proof 1).

(Proof 2)
If $\zeta(7)$ is assumed to be rational number. $\zeta(7)=\frac{s}{t}$, s and t are integer.

$\zeta(7)=\zeta(3)\frac{112\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}{127\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}}$ $\frac{112\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}{127\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}}=\frac{o}{p}$ o, p are assumed to be integer.

$\zeta(7)=\zeta(3)\frac{o}{p}$ it equal $\zeta(3)=\zeta(7)\frac{p}{o}=\frac{sp}{to}$ But, $\zeta(3)\neq\frac{sp}{to}$

This is because $\zeta(3)$ is known to be an irrational number.
This contradicts.

$\zeta(7)$ is irrational number.

(Proof end)

Do the same for $\zeta(9), \zeta(11), \zeta(13)$ etc. prove that $\zeta(9), \zeta(11), \zeta(13)$ etc. are an irrational numbers.

and
Detailed description

$$\zeta(3) = \frac{2^3}{2^3-1}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3} = \frac{8}{7}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3} \tag{301}$$

$$\zeta(7) = \frac{2^7}{2^7-1}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7} = \frac{128}{127}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7} \tag{302}$$

Multiply $\zeta(3)$ and $\zeta(7)$

$$\zeta(7)\frac{8}{7}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3} = \zeta(3)\frac{128}{127}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7} \tag{303}$$

$$\zeta(7)\frac{8}{7} = \zeta(3)\frac{128}{127}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{304}$$

$$\zeta(7) = \zeta(3)\frac{128}{127}\frac{7}{8}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} = \zeta(3)\frac{112}{127}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{305}$$

Do the same for $\zeta(9), \zeta(11), \zeta(13)$ etc.

$$\zeta(3) = \zeta(1)\frac{4}{7}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^1}} = \zeta(1)\frac{4}{(2^3-1)}\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^1}} \tag{306}$$

$$\zeta(5) = \zeta(3)\frac{28\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5}}{31\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} = \zeta(3)\frac{28\sum_{n=1}^{\infty}\frac{1}{(2n-1)^5}}{(2^5-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{307}$$

$$\zeta(7) = \zeta(3)\frac{112\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}{127\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} = \zeta(3)\frac{112\sum_{n=1}^{\infty}\frac{1}{(2n-1)^7}}{(2^7-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{308}$$

$$\zeta(9) = \zeta(3)\frac{2^6 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^9}}{73 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{309}$$

$$\zeta(11) = \zeta(3)\frac{1792 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{11}}}{2047 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} = \zeta(3)\frac{1792 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{11}}}{(2^{11}-1) \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{310}$$

$$\zeta(13) = \zeta(3)\frac{7168 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{13}}}{8191 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} = \zeta(3)\frac{7168 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{13}}}{(2^{13}-1)} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3} \tag{311}$$

$$\zeta(15) = \zeta(3)\frac{2^{12} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{15}}}{4681 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{312}$$

$$\zeta(17) = \zeta(3)\frac{114688 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{17}}}{131072 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} = \zeta(3)\frac{114688 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{17}}}{(2^{17}-1) \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{313}$$

$$\zeta(19) = \zeta(3)\frac{458752 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{19}}}{524287 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} = \zeta(3)\frac{458752 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{19}}}{(2^{19}-1) \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{314}$$

$$\zeta(21) = \zeta(3)\frac{2^{18} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{21}}}{299593 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{315}$$

$$\zeta(23) = \zeta(3)\frac{7340032 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{23}}}{8388607 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} = \zeta(3)\frac{7340032 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{23}}}{(2^{23}-1) \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{316}$$

$$\zeta(25) = \zeta(3)\frac{29360128 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{25}}}{33554431 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} = \zeta(3)\frac{29360128 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{25}}}{(2^{25}-1) \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{317}$$

$$\zeta(27) = \zeta(3)\frac{2^{24} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{27}}}{19173961 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{318}$$

$$\zeta(29) = \zeta(3)\frac{469762048 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{29}}}{536870911 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} = \zeta(3)\frac{469762048 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{29}}}{(2^{29}-1) \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{319}$$

$$\zeta(31) = \zeta(3)\frac{1879048192 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{31}}}{2147483647 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} = \zeta(3)\frac{1879048192 \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{31}}}{(2^{31}-1) \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{320}$$

$$\zeta(33) = \zeta(3)\frac{2^{30}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{33}}}{1227133513\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{321}$$

$$\zeta(35) = \zeta(3)\frac{30064771072\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{35}}}{34359738367\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} = \zeta(3)\frac{30064771072\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{35}}}{(2^{35}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{322}$$

$$\zeta(37) = \zeta(3)\frac{120259084288\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{37}}}{137438953471\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} = \zeta(3)\frac{120259084288\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{37}}}{(2^{31}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{323}$$

$$\zeta(39) = \zeta(3)\frac{2^{36}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{39}}}{78536544841\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{324}$$

$$\zeta(41) = \zeta(3)\frac{1924145348608\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{41}}}{2199023255551\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} = \zeta(3)\frac{1924145348608\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{41}}}{(2^{41}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{325}$$

$$\zeta(43) = \zeta(3)\frac{7696581394432\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{43}}}{8796093022207\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} = \zeta(3)\frac{7696581394432\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{43}}}{(2^{43}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{326}$$

$$\zeta(45) = \zeta(3)\frac{2^{42}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{45}}}{5026338869833\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{327}$$

$$\zeta(47) = \zeta(3)\frac{123145302310912\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{47}}}{140737488355327\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} = \zeta(3)\frac{123145302310912\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{47}}}{(2^{47}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{328}$$

$$\zeta(49) = \zeta(3)\frac{492581209243648\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{49}}}{562949953421311\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} = \zeta(3)\frac{492581209243648\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{49}}}{(2^{49}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{329}$$

$$\zeta(51) = \zeta(3)\frac{2^{48}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{51}}}{321685687669321\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{330}$$

$$\zeta(53) = \zeta(3)\frac{7881299347898368\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{53}}}{9007199254740991\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} = \zeta(3)\frac{7881299347898368\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{53}}}{(2^{53}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{331}$$

$$\zeta(55) = \zeta(3)\frac{31525197391593472\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{55}}}{36028797018963967\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} = \zeta(3)\frac{31525197391593472\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{55}}}{(2^{55}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{332}$$

$$\zeta(57)=\zeta(3)\frac{2^{54}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{57}}}{20587884010836553\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{333}$$

$$\zeta(59)=\zeta(3)\frac{504403158265495552\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{59}}}{576460752303423487\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}}=\zeta(3)\frac{504403158265495552\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{59}}}{(2^{59}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{334}$$

$$\zeta(61)=\zeta(3)\frac{2017612633061982208\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{61}}}{2305843009213693951\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}}=\zeta(3)\frac{2017612633061982208\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{61}}}{(2^{61}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{335}$$

$$\zeta(63)=\zeta(3)\frac{2^{60}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{63}}}{1317624576693539401\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{336}$$

$$\zeta(65)=\zeta(3)\frac{32281802128991715328\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{65}}}{36893488147419103231\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}}=\zeta(3)\frac{32281802128991715328\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{65}}}{(2^{65}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{337}$$

$$\zeta(67)=\zeta(3)\frac{129127208515966861312\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{67}}}{147573952589676412927\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}}=\zeta(3)\frac{129127208515966861312\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{67}}}{(2^{67}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{338}$$

$$\zeta(69)=\zeta(3)\frac{2^{66}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{69}}}{84327972908386521673\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{339}$$

$$\zeta(71)=\zeta(3)\frac{2066035336255469780992\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{71}}}{2361183241434822606847\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}}=\zeta(3)\frac{2066035336255469780992\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{71}}}{(2^{71}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{340}$$

$$\zeta(73)=\zeta(3)\frac{8264141345021879123968\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{73}}}{9444732965739290427391\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}}=\zeta(3)\frac{8264141345021879123968\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{73}}}{(2^{73}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{341}$$

$$\zeta(75)=\zeta(3)\frac{2^{72}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{75}}}{5396990266136737387081\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{342}$$

$$\zeta(77)=\zeta(3)\frac{1322262615203500659834888\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{77}}}{1511157274518286468382771\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}}=\zeta(3)\frac{1322262615203500659834888\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{77}}}{(2^{77}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{343}$$

$$\zeta(79)=\zeta(3)\frac{5289050460814002639339520\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{79}}}{6044629098073145873530871\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}}=\zeta(3)\frac{5289050460814002639339520\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{79}}}{(2^{79}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{344}$$

$$\zeta(81)=\zeta(3)\frac{2^{78}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{81}}}{345407377032751192773193\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{345}$$

$$\zeta(83)=\zeta(3)\frac{846248073730240422294323 2\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{83}}}{967140655691703339764940 7\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}}=\zeta(3)\frac{846248073730240422294323 2\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{83}}}{(2^{83}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{346}$$

$$\zeta(85)=\zeta(3)\frac{338499229492096168917729 28\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{85}}}{386856262276681335905976 31\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}}=\zeta(3)\frac{338499229492096168917729 28\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{85}}}{(2^{85}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{347}$$

$$\zeta(87)=\zeta(3)\frac{2^{84}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{87}}}{221060721300960763374843 61\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{348}$$

$$\zeta(89)=\zeta(3)\frac{541598767187353870268366848\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{89}}}{(2^{89}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{349}$$

$$\zeta(91)=\zeta(3)\frac{216639506874941548107346739 2\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{91}}}{(2^{91}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{350}$$

$$\zeta(93)=\zeta(3)\frac{2^{90}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{93}}}{141478861632614888559899911 3\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{351}$$

$$\zeta(95)=\zeta(3)\frac{346623210999906476971754782 72\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{95}}}{(2^{95}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{352}$$

$$\zeta(97)=\zeta(3)\frac{138649284399962590788701913088\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{97}}}{(2^{97}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{353}$$

$$\zeta(99)=\zeta(3)\frac{2^{96}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{99}}}{905464714448735286783359432 41\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{354}$$

$$\zeta(101)=\zeta(3)\frac{221838855039940145261923060940 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{101}}}{(2^{101}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{355}$$

$$\zeta(103) = \zeta(3)\frac{8873554201597605810476922437632\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{103}}}{(2^{103}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{356}$$

$$\zeta(105) = \zeta(3)\frac{2^{102}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{105}}}{5794974172471905835413500367433\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{357}$$

$$\zeta(107) = \zeta(3)\frac{14197686722556169296763075900211 2\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{107}}}{(2^{107}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{358}$$

$$\zeta(109) = \zeta(3)\frac{5679074689022467718705230360084 48\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{109}}}{(2^{109}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{359}$$

$$\zeta(111) = \zeta(3)\frac{2^{108}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{111}}}{37087834703820197346646402351572 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{360}$$

$$\zeta(113) = \zeta(3)\frac{9086519502435948349928368576135168\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{113}}}{(2^{113}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{361}$$

$$\zeta(115) = \zeta(3)\frac{3634607800974379339971347430454067 2\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{115}}}{(2^{115}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{362}$$

$$\zeta(117) = \zeta(3)\frac{2^{114}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{117}}}{2373621421044492630185369750500615 3\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{363}$$

$$\zeta(119) = \zeta(3)\frac{5815372481559006943954155888726507 52\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{119}}}{(2^{119}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{364}$$

$$\zeta(121) = \zeta(3)\frac{2326148992623602777581662355490603008\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{121}}}{(2^{121}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{365}$$

$$\zeta(123) = \zeta(3)\frac{2^{120}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{123}}}{1519117709468475283318636640320393801\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{366}$$

$$\zeta(125) = \zeta(3)\frac{3721838388197764444130659768784964812 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{125}}}{(2^{125}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{367}$$

$$\zeta(127)=\zeta(3)\frac{148873535527910577765226390751398592512\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{127}}}{(2^{127}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{368}$$

$$\zeta(129)=\zeta(3)\frac{2^{126}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{129}}}{9722353340598241813239274498050520327 3\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{369}$$

$$\zeta(131)=\zeta(3)\frac{2381976568446569244243622252022377480192\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{131}}}{(2^{131}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{370}$$

$$\zeta(133)=\zeta(3)\frac{952790627378627697697448900808950992076 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{133}}}{(2^{133}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{371}$$

$$\zeta(135)=\zeta(3)\frac{2^{132}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{135}}}{6222306137982874760473135678752333009481\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{372}$$

$$\zeta(137)=\zeta(3)\frac{1524465003805804316315918241294321587322 88\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{137}}}{(2^{137}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{373}$$

$$\zeta(139)=\zeta(3)\frac{6097860015223217265263672965177286349291 52\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{139}}}{(2^{139}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{374}$$

$$\zeta(141)=\zeta(3)\frac{2^{138}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{141}}}{3982275928309039846702806834401493126067 93\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{375}$$

$$\zeta(143)=\zeta(3)\frac{9756576024357147624421876744283658158866432\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{143}}}{(2^{143}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{376}$$

$$\zeta(145)=\zeta(3)\frac{3902630409742859049768750697713463263546 5728\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{145}}}{(2^{145}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{377}$$

$$\zeta(147)=\zeta(3)\frac{2^{144}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{147}}}{2548656594117785501889796374016955600683476 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{378}$$

$$\zeta(149)=\zeta(3)\frac{6244208655588574479630001116341541221674516 48\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{149}}}{(2^{149}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{379}$$

$$\zeta(151)=\zeta(3)\frac{24976834622354297918520004465366164886698065 92\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{151}}}{(2^{151}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{380}$$

$$\zeta(153)=\zeta(3)\frac{2^{150}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{153}}}{16311402202353827212094696793708515844374247 13\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{381}$$

$$\zeta(155)=\zeta(3)\frac{39962935395766876669632007144585863818716905472\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{155}}}{(2^{155}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{382}$$

$$\zeta(157)=\zeta(3)\frac{15985174158306750667852802857834345527486762188 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{157}}}{(2^{157}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{383}$$

$$\zeta(159)=\zeta(3)\frac{2^{156}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{159}}}{10439297409506449415740605947973450140399518164 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{384}$$

$$\zeta(161)=\zeta(3)\frac{25576278653290801068564484572534952843978819502 08\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{161}}}{(2^{161}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{385}$$

$$\zeta(163)=\zeta(3)\frac{10230511461316320427425793829013981137591527800832\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{163}}}{(2^{163}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{386}$$

$$\zeta(165)=\zeta(3)\frac{2^{162}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{165}}}{66811503420841276260739878067030080898556916250 33\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{387}$$

$$\zeta(167)=\zeta(3)\frac{16368818338106112683881270126422369820146444448133 12\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{167}}}{(2^{167}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{388}$$

$$\zeta(169)=\zeta(3)\frac{65475273352424450735525080505689479280585777925324 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{169}}}{(2^{169}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{389}$$

$$\zeta(171)=\zeta(3)\frac{2^{168}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{171}}}{42759362189338416806873521962899251775076426400212 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{390}$$

$$\zeta(173)=\zeta(3)\frac{10476043736387912117684012880910316684893724468051968\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{173}}}{(2^{173}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{391}$$

$$\zeta(175)=\zeta(3)\frac{419041749455516484707360515236412667395748978722078 72\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{175}}}{(2^{175}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{392}$$

$$\zeta(177)=\zeta(3)\frac{2^{174}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{177}}}{2736599180117658675639905405625552113604891289613575 3\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{393}$$

$$\zeta(179)=\zeta(3)\frac{67046679912882637553177682437826026783319836595532595 2\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{179}}}{(2^{179}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{394}$$

$$\zeta(181)=\zeta(3)\frac{26818671965153055021271072975130410713327934638213038 08\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{181}}}{(2^{181}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{395}$$

$$\zeta(183)=\zeta(3)\frac{2^{180}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{183}}}{1751423475275301552409539459600353352707130425352688201\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{396}$$

$$\zeta(185)=\zeta(3)\frac{42909875144244888034033716760208657141324695421140860928\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{185}}}{(2^{185}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{397}$$

$$\zeta(187)=\zeta(3)\frac{17163950057697955213613486704083462856529878168456344371 2\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{187}}}{(2^{187}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{398}$$

$$\zeta(189)=\zeta(3)\frac{2^{186}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{189}}}{1120911024176192993542105254144226145732563472225720448 73\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{399}$$

$$\zeta(191)=\zeta(3)\frac{27462320092316728341781578726533540570447805069530150993 92\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{191}}}{(2^{191}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{400}$$

$$\zeta(193)=\zeta(3)\frac{10984928036926691336712631490613416228179122027812060397568\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{193}}}{(2^{193}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{401}$$

$$\zeta(195)=\zeta(3)\frac{2^{192}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{195}}}{7173830554727635158669473626523047332688406222244610871881\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{402}$$

$$\zeta(197)=\zeta(3)\frac{17575884859082706138740210384981465965086595244499296636108 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{197}}}{(2^{197}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{403}$$

$$\zeta(199)=\zeta(3)\frac{703035394363308245549608415399258638603463809779971865444352\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{199}}}{(2^{199}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{404}$$

$$\zeta(201)=\zeta(3)\frac{2^{198}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{201}}}{4591251555025686501548463120974750292920579982236550958003 93\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{405}$$

$$\zeta(203)=\zeta(3)\frac{1124856630981293192879373464638813821765542095647954984710 9632\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{203}}}{(2^{203}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{406}$$

$$\zeta(205)=\zeta(3)\frac{4499426523925172771517493858555255287062168382591819938843852 8\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{205}}}{(2^{205}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{407}$$

$$\zeta(207)=\zeta(3)\frac{2^{204}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{207}}}{2938400995216439360991016397423840187469171188631392613122516 1\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{408}$$

$$\zeta(209)=\zeta(3)\frac{7199082438280276434427990173688408459299469412146911902150164 48\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{209}}}{(2^{209}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{409}$$

$$\zeta(211)=\zeta(3)\frac{2879632975312110573771196069475363383719787764858764760860065792\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{211}}}{(2^{211}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{410}$$

$$\zeta(213)=\zeta(3)\frac{2^{210}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{213}}}{1880576636938521191034250494351257719980269560724091272398410313\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{411}$$

$$\zeta(215)=\zeta(3)\frac{4607412760499376918033913711160581413951660423774023617376105267 2\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{215}}}{(2^{215}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{412}$$

$$\zeta(217)=\zeta(3)\frac{4607412760499376918033913711160581413951660423774023617376105267 2\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{217}}}{(2^{217}-1)\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{413}$$

$$\zeta(219)=\zeta(3)\frac{2^{216}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{219}}}{1203569047640653562261920316384804940787372518863418414334982600 41\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{414}$$

$$\zeta(221) = \zeta(3)\frac{2948744166719601227541704775142772104929062671215375115120707371008}{(2^{221}-1)} \tag{415}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{221}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{416}$$

$$\zeta(223) = \zeta(3)\frac{11794976666878404910166819100571088419716250684861500460482829484032}{(2^{223}-1)} \tag{417}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{223}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{418}$$

$$\zeta(225) = \zeta(3)\frac{2^{222}}{77028419049001827984762900248627516210391841207258778517438886426 33} \tag{419}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{225}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{420}$$

$$\zeta(227) = \zeta(3)\frac{188719626670054478562669105609137414715460010957784007367725271744512}{(2^{227}-1)} \tag{421}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{227}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{422}$$

$$\zeta(229) = \zeta(3)\frac{754878506680217914250676422436549658861840043831136029470901086978048}{(2^{229}-1)} \tag{423}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{229}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{424}$$

$$\zeta(231) = \zeta(3)\frac{2^{228}}{49298188191361169910248256159121610374650778372645618251160887312 8521} \tag{425}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{231}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{426}$$

$$\zeta(233) = \zeta(3)\frac{120780561068834866280108227589847945417894407012981764715344173916 48768}{(2^{233}-1)} \tag{427}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{233}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{428}$$

$$\zeta(235) = \zeta(3)\frac{48312224427533946512043291035939178167157762805192705886137669566595072}{(2^{235}-1)} \tag{429}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{235}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{430}$$

$$\zeta(237)=\zeta(3)\frac{2^{234}}{31550840442471148742558883941837830639776498158493195680742967880225353} \tag{431}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{237}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{432}$$

$$\zeta(239)=\zeta(3)\frac{772995590840543144192692656575026850674524204883083294178202713065521152}{(2^{239}-1)} \tag{433}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{239}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{434}$$

$$\zeta(241)=\zeta(3)\frac{309198236336217257677077062630010740269809681953233317671281085226208 4608}{(2^{241}-1)} \tag{435}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{241}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{436}$$

$$\zeta(243)=\zeta(3)\frac{2^{240}}{20192537883181535195237685722776211609456958821435645235675499443344226 01} \tag{437}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{243}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{438}$$

$$\zeta(245)=\zeta(3)\frac{4947171781379476122833233002080171844316954911251733082740497363619335 3728}{(2^{245}-1)} \tag{439}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{245}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{440}$$

$$\zeta(247)=\zeta(3)\frac{1978868712551790449133293200832068737726781964500693233096198945447734 14912}{(2^{247}-1)} \tag{441}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{247}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{442}$$

$$\zeta(249)=\zeta(3)\frac{2^{246}}{12923224245236182524952118862576775430052453645718812950832319643740304 6473} \tag{443}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{249}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{444}$$

$$\zeta(251) = \zeta(3)\frac{3166189940082864718613269121331309980362851143201109172953918312716374638592}{(2^{251}-1)} \tag{445}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{251}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{446}$$

$$\zeta(253) = \zeta(3)\frac{12664759760331458874453076485325239921451404572804436691815673250865498554368}{(2^{253}-1)} \tag{447}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{253}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{448}$$

$$\zeta(255) = \zeta(3)\frac{2^{252}}{827086351695115681596935607204913627523357033326004028853268457199379497428 1} \tag{449}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{255}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{450}$$

$$\zeta(257) = \zeta(3)\frac{2026361561653033419912492237652038387432224731648709870690507720138479768698 88}{(2^{257}-1)} \tag{451}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{257}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{452}$$

$$\zeta(259) = \zeta(3)\frac{8105446246612133679649968950608153549728898926594839482762030880553919074795 52}{(2^{259}-1)} \tag{453}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{259}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{454}$$

$$\zeta(261) = \zeta(3)\frac{2^{258}}{5293352650848740362220387886111447216149485013286425784660918126076028783539 93} \tag{455}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{261}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{456}$$

$$\zeta(263) = \zeta(3)\frac{1296871399457941388743995032097304567956623828255174317241924940888627051967 2832}{(2^{263}-1)} \tag{457}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{263}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{458}$$

$$\zeta(265) = \zeta(3) \frac{5187485597831765554975980128389218271826495313020697268967699763554508207869132 8}{(2^{265}-1)} \tag{459}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{265}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{460}$$

$$\zeta(267) = \zeta(3) \frac{2^{264}}{3387745696543193831821048247111326218335670408503312502182987600688658421465556 1} \tag{461}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{267}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{462}$$

$$\zeta(269) = \zeta(3) \frac{8299976956530824887961568205422749234922392500833115630348319621687213132590612 48}{(2^{269}-1)} \tag{463}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{269}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{464}$$

$$\zeta(271) = \zeta(3) \frac{3319990782612329955184627282169099693968957000333246252139327848674885253036244992}{(2^{271}-1)} \tag{465}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{271}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{466}$$

$$\zeta(273) = \zeta(3) \frac{2^{270}}{2168157245787644052365470878151248779734829061442120001397112064440741389737955913} \tag{467}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{273}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{468}$$

$$\zeta(275) = \zeta(3) \frac{5311985252179727928295403651470559510350331200533194003422924557879816404857991 9872}{(2^{275}-1)} \tag{469}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{275}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{470}$$

$$\zeta(277) = \zeta(3)\frac{21247941008718911713181614605882238041401324802132776013691698231519265619431967948 8}{(2^{277}-1)} \tag{471}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{277}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{472}$$

$$\zeta(279) = \zeta(3)\frac{2^{276}}{13876206373040921935139013620167992190302905993229568008941517212420744894322917844 1} \tag{473}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{279}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{474}$$

$$\zeta(281) = \zeta(3)\frac{33996705613950258741090583369411580866242119683412441621906717170430824991091148718 08}{(2^{281}-1)} \tag{475}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{281}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{476}$$

$$\zeta(283) = \zeta(3)\frac{13598682245580103496436233347764632346496847873364976648762686868172329996436459487 232}{(2^{283}-1)} \tag{477}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{283}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{478}$$

$\zeta(285)=$

$$\zeta(3)\frac{2^{282}}{88807720787461900384889687169075150017938598356669235257225710159492767323666674202 33} \tag{479}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{285}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{480}$$

$\zeta(287)=$

$$\zeta(3)\frac{21757891592928165594297973356423411754394956597383962638020298989075727994298335179571 2}{(2^{287}-1)} \tag{481}$$

$$\times \frac{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^{287}}}{\sum_{n=1}^{\infty} \frac{1}{(2n-1)^3}} \tag{482}$$

$\zeta(289)=$

$$\zeta(3)\frac{870315663717126623771918934256936470175798263895358505520811959563029119771933407182848}{(2^{289}-1)} \tag{483}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{289}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{484}$$

$\zeta(291)=$

$$\zeta(3)\frac{2^{288}}{5683694130397561624632939978820809601148070294826831056462445450207537108714667148949 21} \tag{485}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{291}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{486}$$

$\zeta(293)=$

$$\zeta(3)\frac{139250506194740259803507029481109835228127722232573608833299135300846591635093451492556 8}{(2^{293}-1)} \tag{487}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{293}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{488}$$

$\zeta(295)=$

$$\zeta(3)\frac{55700202477896103921402811792443934091251088889302944353331965412033863665403738059702272}{(2^{295}-1)} \tag{489}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{295}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{490}$$

$\zeta(297)=$

$$\zeta(3)\frac{2^{294}}{3637564243454439439765081586445318144734764988689171876135965088132823749577386975327495 3} \tag{491}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{297}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{492}$$

$\zeta(299)=$

$$\zeta(3)\frac{8912032396463376627424449886791029454600174222288471096533114465925418186464598089552363 52}{(2^{299}-1)} \tag{493}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{299}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{494}$$

$\zeta(301)=$

$$\zeta(3)\frac{3564812958585350650969779954716411781840069688915388438613245786370167274585839235820945408}{(2^{301}-1)} \tag{495}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{301}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{496}$$

$\zeta(303)=$

$$\zeta(3)\frac{2^{300}}{232804111581084124144965221532500361263024959276107000072701765640500719972952766420959700 1} \tag{497}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{303}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{498}$$

$\zeta(305)=$

$$\zeta(3)\frac{57037007337365610415516479275462588509441115022646215017811932581922676393373427773135126528}{(2^{305}-1)} \tag{499}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{305}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{500}$$

$\zeta(307)=$

$$\zeta(3)\frac{22814802934946244166206591710185035403776446009058486007124773032769070557349371109254050611 2}{(2^{307}-1)} \tag{501}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{307}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{502}$$

$\zeta(309)=$

$$\zeta(3)\frac{2^{306}}{1489946314118938394527777417808002312083359739367084800465291300099204607826897705094142080 73} \tag{503}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{309}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{504}$$

$$\zeta(311)=$$

$$\zeta(3)\frac{3650368469591399066593054673629605664604231361449357761139963685243051289175899377480648097792}{(2^{311}-1)} \tag{505}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{311}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{506}$$

$$\zeta(313)=$$

$$\zeta(3)\frac{14601473878365596266372218694518422658416925445797431044559854740972205156703597509922592391168}{(2^{313}-1)} \tag{507}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{313}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{508}$$

$$\zeta(315)=$$

$$\zeta(3)\frac{2^{312}}{9535656410361205724977775473971214797333502331949342722977864320634909490092145312602509316681} \tag{509}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{315}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{510}$$

$$\zeta(317)=\zeta(3)\times$$

$$\frac{233623582053849540261955499112294762534670807132758896712957675855555282507257560158761478258688}{(2^{317}-1)} \tag{511}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{317}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{512}$$

$$\zeta(319)=\zeta(3)\times$$

$$\frac{9344943282153981610478219964491790501386832285310355868518307034222211300290302406350459130347 52}{(2^{319}-1)} \tag{513}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{319}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{514}$$

$$\zeta(321)=\zeta(3)\times$$

$$\frac{2^{318}}{6102820102631171663985776303341577470293441492447579342705833165206342073658973000065605962675 93} \tag{515}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{321}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{516}$$

$\zeta(323)=\zeta(3)\times$

$$\frac{14951909251446370576765151943186864802218931656496569389629291254755538080464483850160734608556032}{(2^{323}-1)} \tag{517}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{323}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{518}$$

$\zeta(325)=\zeta(3)\times$

$$\frac{59807637005785482307060607772747459208875726625986277558517165019022152321857935400642938434224128}{(2^{325}-1)} \tag{519}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{325}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{520}$$

$\zeta(327)=\zeta(3)\times$

$$\frac{2^{324}}{39058048656839498649508968341386095809878025551664507793317332257320589271417427200419878161125961} \tag{521}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{327}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{522}$$

$\zeta(329)=\zeta(3)\times$

$$\frac{95692219209256771691296972436395934734201162601578044093627464030435443714972696641028701494758604 8}{(2^{329}-1)} \tag{523}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{329}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{524}$$

$\zeta(331)=\zeta(3)\times$

$$\frac{38276887683702708676518788974558373893680465040631217637450985612174177485989078656411480597903441 92}{(2^{331}-1)} \tag{525}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{331}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^3}} \tag{526}$$

$\zeta(333)=\zeta(3)\times$

$$\frac{2^{330}}{249971511403772791356857397384871013183219363530652849877230926446851771337071534082687220231206151 3} \tag{527}$$

$$\times\frac{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{333}}}{\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{3}}} \tag{528}$$

$\zeta(335), \zeta(337)$ etc. can also be expressed by these equations

3 Conclusion

$\zeta(3), \zeta(5).....\zeta(331), \zeta(333)$ are irrational numbers.

4 Postscript

$$\zeta(\pi)=\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{\pi}}+\sum_{n=1}^{\infty}\frac{1}{(2n)^{\pi}} \tag{529}$$

$$\zeta(\pi)=\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{\pi}}+\frac{1}{2^{\pi}}\sum_{n=1}^{\infty}\frac{1}{n^{\pi}} \tag{530}$$

$$\zeta(\pi)=\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{\pi}}+\frac{1}{2^{\pi}}\zeta(\pi) \tag{531}$$

$$(1-\frac{1}{2^{\pi}})\zeta(\pi)=\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{\pi}} \tag{532}$$

$$(\frac{2^{\pi}-1}{2^{\pi}})\zeta(\pi)=\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{\pi}} \tag{533}$$

$$\zeta(\pi) = \frac{2^\pi}{2^\pi - 1} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^\pi} \tag{534}$$

=1.176241738382582758872150451938052091169738990021655834960508346230408723768158618335720837325571831138945660081 45...

Do the same

$$\zeta(e) = \frac{2^e}{2^e - 1} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^e} \tag{535}$$

=1.269009604335717115765569866600861108856404462577190488335815928708165242948273076508494517450760545758283476842 18...

I believe that $\zeta(\pi), \zeta(e)$ are irrational numbers.
That is, I believe that the irrational number ζ are irrational numbers.

I also believe that all even value, as well as odd values of ζ, are irrational numbers.

The figures in this paper have been fully verified by WolframAlpha.

References

[1] B.Riemann.: Uber die Anzahl der Primzahlen unter einer gegebenen Grosse, Mon. Not. Berlin Akad pp.671-680, 1859

[2] John Derbyshire.: Prime Obsession: Bernhard Riemann and The Greatest Unsolved Problem in Mathematics, Joseph Henry Press, 2003

[3] S.Kurokawa.: Riemann hypothesis, Japan Hyoron Press, 2009

[4] Marcus du Sautoy.: The Music of The Primes, Zahar Press, 2007

[5] T. takami.: Zeta odd-numbers, vixra:1909.0276