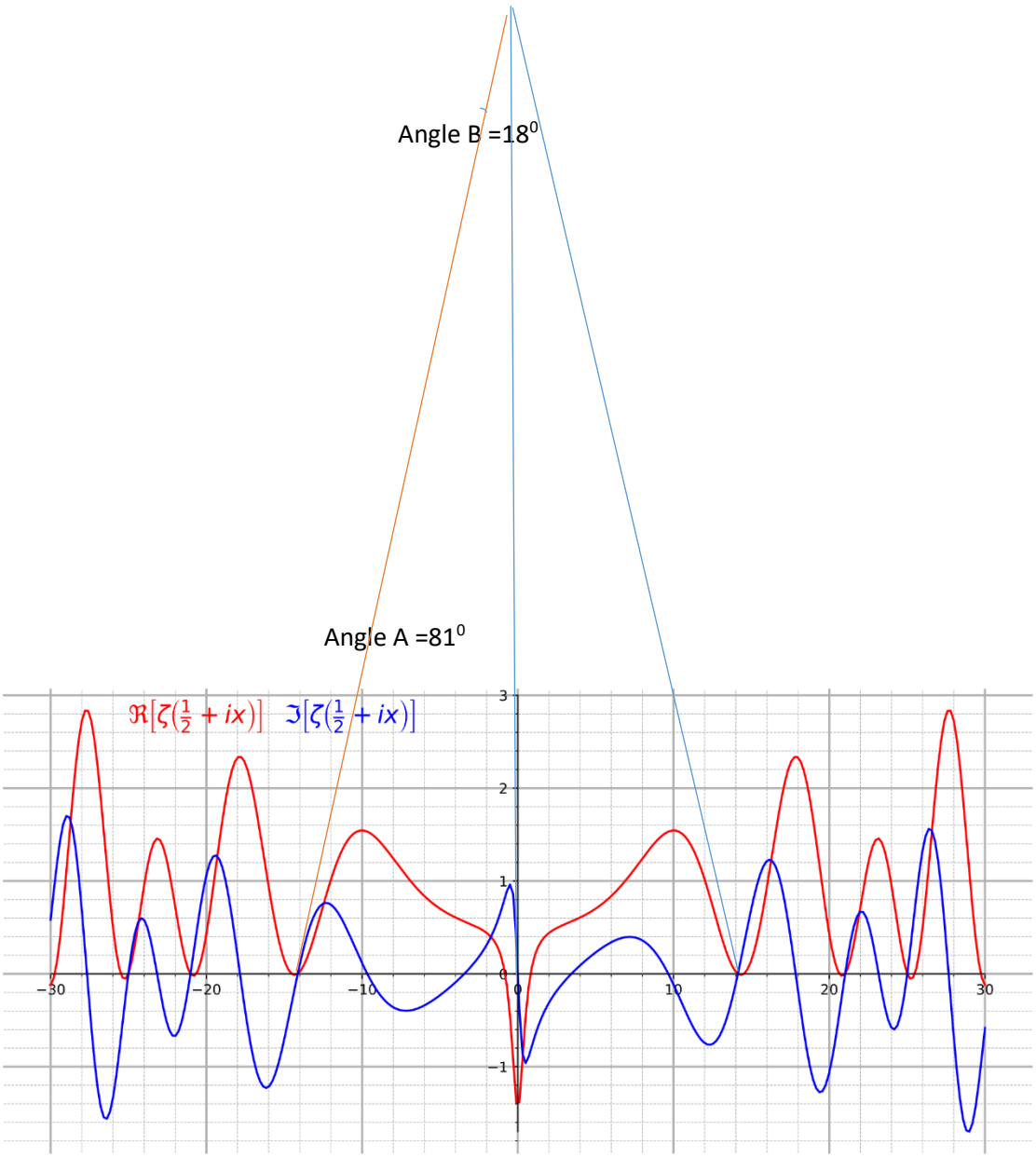
Finding Primes and non trivial zeros through a Fundamental trigonometric linear relation of the non trivial zeros

By Luis Felipe Massena Misiec

Based on the fact that there is a constancy of the angle formed by the intersection of the graph curve of the Riemann zeta function when the numbers meet in their imaginary and real forms, an isosceles triangle can be drawn from the base to the apex of the corresponding axis to the zero point. The angle of the base of this triangle is equivalent in degrees to the value of the sine of the limit of the derivative when tending to the imaginary and obtained from the proposed calculation for the circumference, previously shown in the publication Riemann`s Hypothesis Solution. The angle shown in the figure below is shown in a simplified way, with no decimal places appearing, which should be considered for obtaining the formula that relates to obtaining the non-trivial numbers that are obtained by the simple fundamental trigonometric relationship that appears when observing a proportion between the base angles (810) to the apex angle (180). By the relation of the sine of these angles, a line of a linear equation can be obtained that relates the numbers relative to non-trivial zeros. So that at the base there will be a number that is equal to twice the non-trivial number, since the absolute value of its positive and negative value is considered, but it is related to an imaginary number corresponding to the height of the isosceles triangle at the real zero point . Thus, a relation of sine values is obtained for the angles that correspond to scalar and vector quantities at the base of the triangle that corresponds to a non-trivial number (related to non-trivial zero numbers), and which remains ad infinitum in a linear relationship that allows obtaining numbers of non-trivial zeros by calculating the arc length by the derivative defined between the ends of the numbers considered in the relation of the magic number 0.9886399220 / 0.29719183431 * n, where the numerator corresponds to the sine of the angle corresponding to the imaginary limit of a circumferential function of value 0.8118i (sine of 0.8118 times 90 = 81.355492 0 = angle A = 0.9886399220), sine of angle A =) and the denominator corresponds to the sine of the apex angle of an isosceles triangle of value (angle B = 17.289016 0 , sine = 0.29719183431).

From the knowledge of a first interval between the encounters of real and imaginary numbers of non-trivial Riemann zeros, a relationship can be established that demonstrates that the definite integral of the lower and upper, negative and positive limits of a given interval corresponds to a number that is a number corresponding to a non-trivial zero, either in terms of whole numbers, or with a small distance of up to 1.5 from the non-trivial zero number for that range.

Thus, knowing that the distribution of non-trivial zeros is related to the distribution of prime numbers, it can be seen that in the second example of calculation on the Wolfram Alpha query page, an integral value equal to 6947316782051176802471116 8 is obtained, which is far from a prime by 5 numbers above, where 69473167820511768024711163 is a prime number. It should be said in passing that the date of this publication is a record for the non-trivial numbers of non-trivial zeros, already obtained.



Length at the base=28,268

Sin 0.8118 *90=81.355492 degrees

Sin(81.355492 degrees)= 0.9886399220

Angle B= 17.289016

Sin A=x ->

Sin B=28.268 (non trivial zero 14.134 times 2)

0.29719183431= 28.286 ->

0.9886399220=x substituting 28.268 by n => $x=\frac{(n*0.9886399220)}{0.29719183431}$

(28.268*n*0.9886399220)/ 0.29719183431=94.096

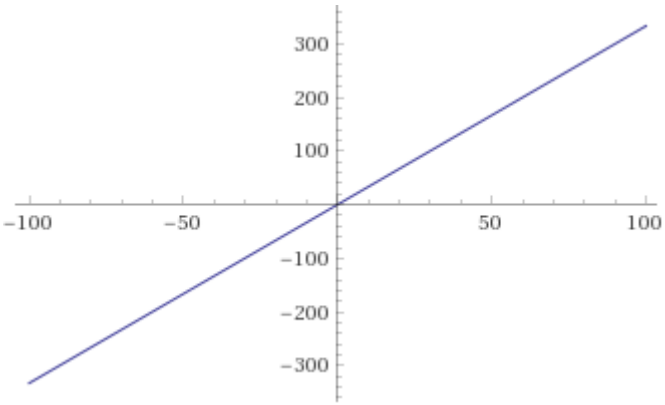
94.096+0.5=94.596 = (non trivial zeros) 94.651344041

The relation might be influenced by the precision of the angles used, whcih is vanished after using the angles with the decimals related.

Input interpretation:

plot	$n \times \frac{0.9886399220}{0.29719183431}$	$n = -100$ to 100

Plot:



- Enlarge
- Customize

Arc length of curve:

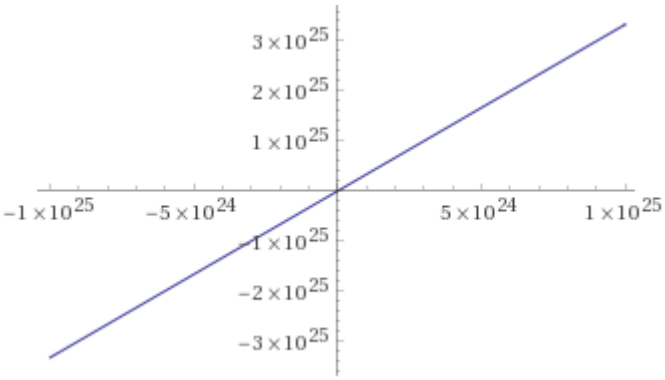
- Step-by-step solution

$$\int_{-100}^{100} 3.47366\, dn = 694.732$$

Non trivial zero 694.533

plot	$n \times \frac{0.9886399220}{0.29719183431}$	$n = -1 \times 10^{25}$ to 1×10^{25}

Plot:



- Enlarge
- Customize

Arc length of curve:

- Step-by-step solution

$$\int_{-10\,000\,000\,000\,000\,000\,000\,000\,000}^{10\,000\,000\,000\,000\,000\,000\,000\,000} 3.47366\, dn = 69\,473\,167\,820\,511\,768\,024\,711\,168$$

Calculate the arc length of the following curve from $n = -10$ to $n = 10$:
$y(n) = 3.32661\, n$

Hint: The definition of arc length in Cartesian coordinates is $s = \int_{n_0}^{n_1} \sqrt{1 + y'(n)^2}\, dn$.

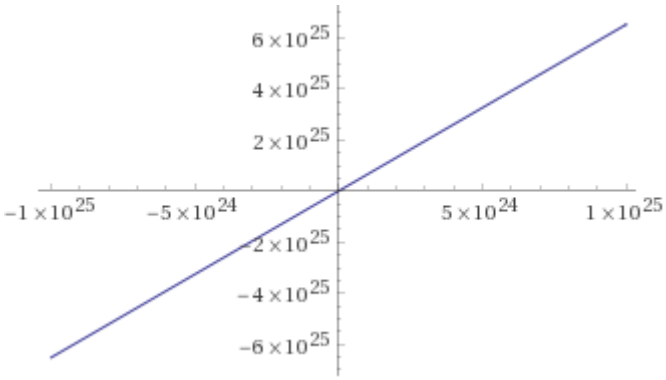
Apply the definition of arc length to $y(n) = 3.32661\, n$ for $-10 < n < 10$:

$$s = \int_{-10}^{10} \sqrt{1 + \left(\frac{d}{dn}(3.32661\, n)\right)^2}\, dn$$

---

plot	$n \times \frac{0.98844448495}{0.15158331094}$	$n = -10^{25}$ to 10^{25}

Plot:



- Enlarge
- Customize

Arc length of curve:

- Step-by-step solution

$$\int_{-10\,000\,000\,000\,000\,000\,000\,000\,000}^{10\,000\,000\,000\,000\,000\,000\,000\,000} 6.597032310\, dn = 131\,940\,646\,208\,423\,787\,328\,173\,639$$

Conclusion

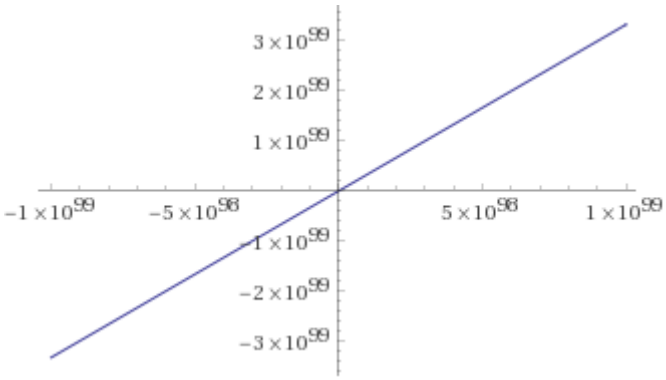
So we have a new method of obtaining prime numbers through a formula derived from the ratio of non-trivial Riemann zero numbers that linearizes the function but obeys the Hilbert-Polya conjecture, corresponding to eigenvalues of an unbounded self adjoint operator.

prime	nearest to 694 731 678 205 117 738 148 231 457 015 158 526 875 302 860 161 023

694 731 678 205 117 738 148 231 457 015 158 526 875 302 860 160 991

plot	$n \times \frac{0.9886399220}{0.29719183431}$	$n = -1 \times 10^{99}$ to 1×10^{99}

Plot:



Arc length of curve:

- Step-by-step solution

$$\int_{-1000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}^{1000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} 3.47366\,dn = 6\,947\,316\,782\,051\,175\,968\,403\,138\,835\,523\,249\,501\,516\,139\,774\,158\,372\,724\,412\,385 \ddots 510\,574\,699\,178\,241\,406\,910\,728\,378\,200\,648\,318\,976$$

- Enlarge
- Customize
- Plain Text

Download Page

POWERED BY THE **WOLFRAM LANGUAGE**

Input interpretation:

prime	nearest to 6 947 316 782 051 175 968 403 138 835 523 249 501 516 139 774 158 372 ⋱ 724 412 385 510 574 699 178 241 406 910 728 378 200 648 318 976

Result:

6 947 316 782 051 175 968 403 138 835 523 249 501 516 139 774 158 372 724 412 385 ⋱ 510 574 699 178 241 406 910 728 378 200 648 318 977

- Enlarge
- Customize
- Plain Text

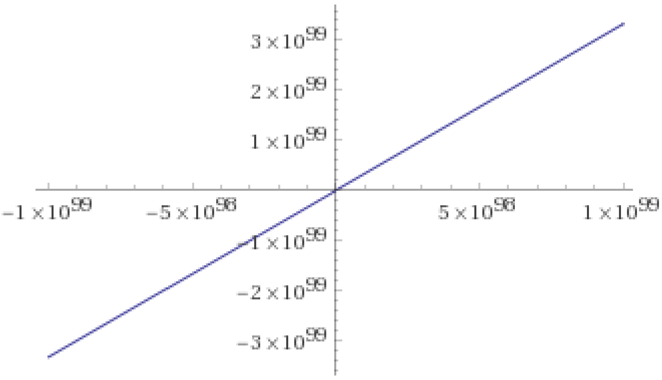
Download Page

POWERED BY THE **WOLFRAM LANGUAGE**

Input interpretation:

plot	$n \times \frac{0.9886399220}{0.29719183431}$	$n = -1 \times 10^{99}$ to 1×10^{99}

Plot:



- Enlarge
- Customize

Arc length of curve:

- Step-by-step solution

$$\int_{-1000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000}^{1000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000\,000} 3.47366\, dn = 6\,947\,316\,782\,051\,175\,968\,403\,138\,835\,523\,249\,501\,516\,139\,774\,158\,372\,724\,412\,385 \ddots 510\,574\,699\,178\,241\,406\,910\,728\,378\,200\,648\,318\,976$$

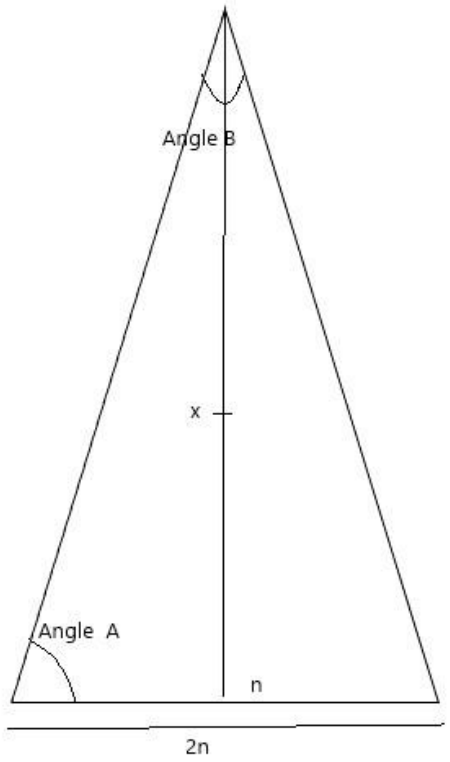
6983827377585388411576016900353475756152087472161787988320729630712756170288695672776896809934801375292067043438109242254145952866

Nearest prime=6983827377585388411576016900353475756152087472161787988320729630712756170288695672776896809934801375292067043438109242254145952841

69473167820511765242830133883162231196373893172462572947321681009276855429531868770882474054742274999418781196191128350605290638907281085633288937673680524199820066895936872314770237447995716771439959238004273486653770489519884087184561255933086729316005893883052796589968722075656357507968378869005241089165689837538775946470654446499501966076614890157622775988094202464078929288907735084091176712819439586018201262584675330599303231799651328074634544385044419476755076985251636084219268328080088251662043698866454523084731639802544765817015037852583580045461950139773968906062830312323507628556726568436388771648582054725350555439952871014106950029398605002226628662285437033779318551536747294374952255496472680780665826457366896250220249866954099419856397786258180576705276869616498812031948075619511682529816958383878485379938346995226313984712037892411186524390370830098196489452622389323720195586168765517245297601070346396828054779915463530671108671936053175605957994436181065402719501539164 (non trivial zero)

6947316782051176524283013388316223119637389317246257294732168100927685542953186877088247405474227499941878119619112835060529063890728108563328893767368052419982006689593687231477023744799571677143995923800427348665377048951988408718456125593308672931600589388305279658996872207565635750796837886900524108916568983753877594647065444649950196607661489015762277598809420246407892928890773508409117671281943958601820126258467533059930323179965132807463454438504441947675507698525163608421926832808008825166620

4369886645452308473163980254476581701503785258358004546195013977396890606283031232350762855672656843638877164858205472535055543995287101410695002939860500222662866228543703377931855153674729437495225549647268078066582645736689625022024986695409941985639778625818057670527686961649881203194807561951168252981695838387848537993834699522631398471203789241118652439037083009819648945262238932372019558616876551724529760107034639682805477991546353067110867193605317560595799443618106540271950153914 1 (prime closest)



Sin B=n Sin B=2n

Sin A=x or Sin A=x

$$x = \frac{n * \sin A}{\sin B}$$

$$x = \frac{2n * \sin A}{\sin B} => \frac{X}{2n} = \frac{\sin A}{\sin B}$$

$$n = \frac{x \sin B}{\sin A} \rightarrow x = \frac{2n * \sin A}{\frac{\sin B}{2}}$$

$$\frac{x}{x} = \frac{\frac{2n * \sin A}{\sin B}}{\frac{n \sin A}{\sin B}} = \frac{2n \sin A}{\sin B} * \frac{\sin B}{n \sin A} = 2 \rightarrow 2^{-1} = \frac{1}{2} \quad ; \quad \frac{x}{x} = 1 = 2 \; => \; \frac{1}{2} = 1$$

$$1 = 2 * (n) = n = 2n => \frac{n}{2} = n => \frac{n}{2} - n = 0 => -\frac{n}{2} = 0$$

$$\frac{n}{2} + 0 = \frac{n}{2} - \frac{n}{2} = \frac{n}{2} = 0 \;\therefore\; \frac{n}{2} \div n = 0 \div n = 0 = \frac{1}{2}$$

23760.359396648 non trivial zero

6893.527777*(sqrt(1+(0.98844448495/0.29966375468)^2)

$$6893.527777\sqrt{1+\left(\frac{0.98844448495}{0.29966375468}\right)^2}$$

=23760.36259 = x value for arc length integral n = 6893.527772

2376.0359 / 689.3527= 3,44676 7253884807761491

plot	$n\times\frac{0.98844448495}{0.29966375468}$	$n=-1000$ to 1000

$$\int_{-1000}^{1000} 3.4467638860\,dn = 6893.527772$$

Y=2n=689,32659

$$\int_{-1000}^{1000}\frac{n\sin A}{\sin B}dn = y = 2n; \quad x=\frac{y\sin A}{\sin B} \quad ; \quad \frac{x}{y}=\frac{\sin A}{\sin B}$$

23760,362 / 689,3527772=3,44676 7774663742181062795204772

23760,362 / 2=1.185,1795 ≅ 1185.155842847 non trivial zero

n*0.98844448495/0.29966375468 from -100000 to 100000

$$\int_{-100000}^{100000} 3.4467638860\,dn = 689\,352.7772$$

prime	nearest to 689 352

=689357

n*0.98844448495/0.15158331094 from -100000 to 100000

$$\int_{-100000}^{100000} 6.597032310\, dn = 1.3194064621 \times 10^6$$

prime nearest to 1319406 =1319407

689357/1319407= 0,5224738517507 -0.5= 0,02247 * 2 related primes gives the percentage of primes in 1000000000 numbers the ratio remains the same to numbers higher than 1*10^20.

Considering 689357 to be related to n and 1319407 to 2n then there is a observed 0.02247 error with in 100000 numbers it is possible to consider that there is 3n numbers related to 0.02247 so it can be raised to 0.02247 times 3 which is equal to 0.06741 close to the observed x/logx which would be arround 0.072382 with in 8 % error, in this case an error of 14 % in between 16 % (1000) and 8% (1000000) to the known numbers of primes that is a considerable margin of confidence, that is related to the chosen precision of the angles involved in the original first calculus and that remain to be investigated to find if it persists to increasing values of the n value for the non trivial zeros. Plus , since the value is given in integers, there is 6.7 percent lesser numbers than the expected total numbers of the non trivial numbers.

$$\int_{-100}^{100} 6.597032310\, dn = 1319.4064621$$

1319.4064 / 2 = 659.703105 ≅
659.663845973 *a known non trivial zero*

$$\int_{-100}^{100} 3.4467638860\, dn = 689.3527772$$

689.3527772 / 2 = 344.676≅ 344.661702940 *a known non trivial zero*

1319406462084237873281738222307077081437628155155270435303178836581927406641129461308407727783097139 2/ ln (1319406462084237873281738222307077081437628155155270435303178836581927406641129461308407727783097139 2)=

5.7232199e+97

5.7232199e+97/1319406462084237873281738222307077081437628155155270435303178836581927406641129461308407727783097139 2=0.004377231

6893527772008532263647700583534709298426442350440100348770351324650006698146518395024497343998197760 / ln(6893527772008532263647700583534709298426442350440100348770351324650006698146518395024497343998197760) =

2.9986657e+97

2.9986657e+97/6893527772008532263647700583534709298426442350440100348770351324650006698146518395024497343998197760=0.00434997261

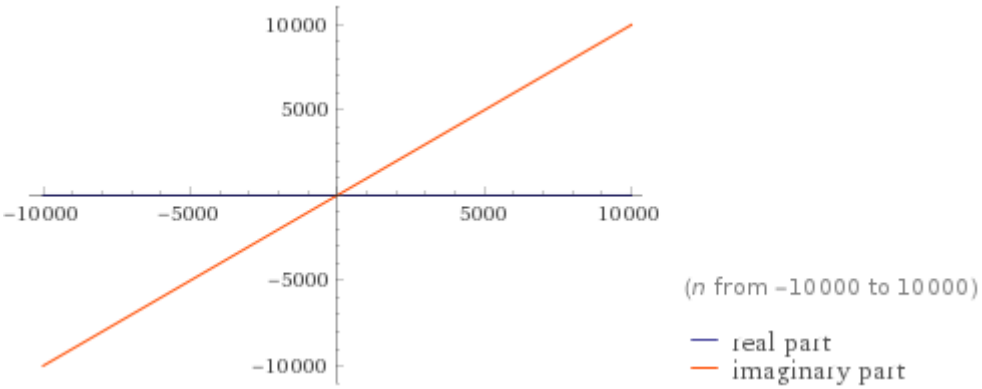
Now 5.7232/2.9986=1.9086240-2=0.0913759 *0.3(the ratio of the linear graph for the numbers of the arc length integral) = 0.027412 / 0.02247 (the amount of the percentage of the relation between the numbers related to two angles)=0.00494279 – 0.004399 =0.000054379 which is a fair precision within the distribution of primes for the given amount of numbers.

But if i relate the proprotion of x/y being x the value of the initial numbers related to the arc integral the relation of numbers to the non trivial zeros related to the half of the value of the arc length integra it becomes 3 times the ratio of 0.02247 which is astonishing 0.06666 agaisnt 0.06594 ratio of non trivial zeros found in a total of 2001052 numbers by Andrew Odlyzko. Comparing the ratio of both linear graphics of both angles there is a correlation of exact twice or if considered the inverse relation of 0.2 , so the the relation of x to y for the comparison of both graphics which aplied to 0.02247 gives 0.004494 closely related to the values of 0.00494279 and 0.004399 , the given percentages of prime numbers contained in the amount given by the arc length integral of the given graphs.

Input interpretation:

plot	$\frac{1}{2} + \sqrt{-1}\, n$	$n = -10\,000$ to $10\,000$

Plot:



- Enlarge
- Customize

Arc length of curve:

- Step-by-step solution

$$\int_{-10000}^{10000} 0 \, dn = 0$$

Download Page

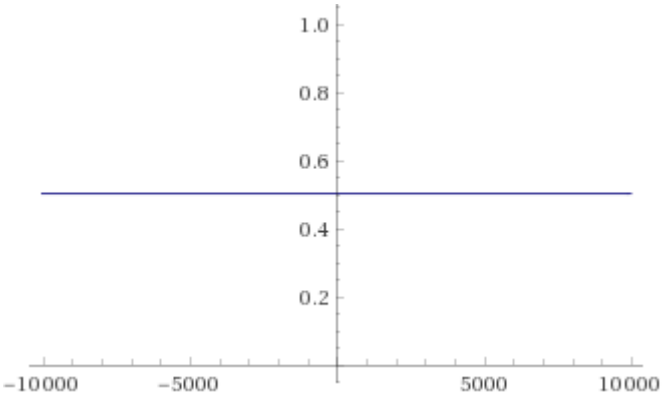
POWERED BY THE **WOLFRAM LANGUAGE**

Input interpretation:

plot	$\mathrm{Re}\left(\frac{1}{2}+\sqrt{-1}\ n\right)$	$n = -10\,000$ to $10\,000$

$\mathrm{Re}(z)$ is the real part of z

Plot:



- Enlarge
- Customize

Arc length integral:

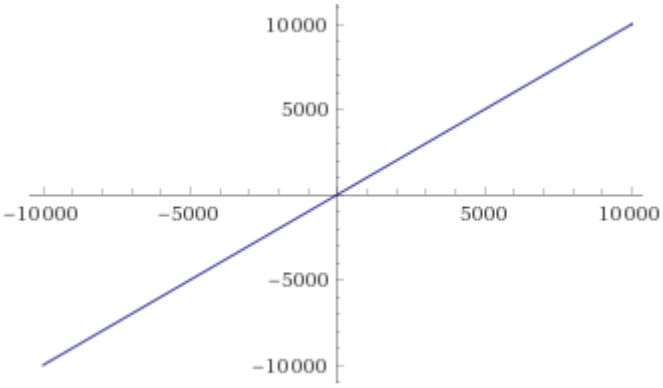
$$\int_{-10000}^{10000} \sqrt{1+\mathrm{Im}'(n)^2}\ dn$$

Input interpretation:

plot	$\mathrm{Im}\left(\frac{1}{2}+\sqrt{-1}\ n\right)$	$n = -10\,000$ to $10\,000$

$\mathrm{Im}(z)$ is the imaginary part of z

Plot:



- Enlarge
- Customize

Arc length integral:

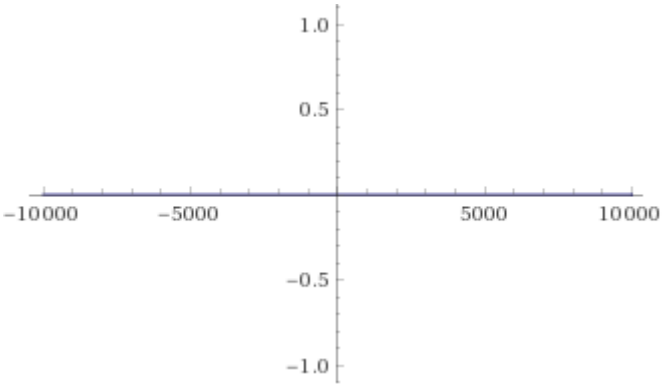
$$\int_{-10000}^{10000} \sqrt{1+\mathrm{Re}'(n)^2}\ dn$$

Input interpretation:

plot	$\frac{\mathrm{Im}(1)}{n^{1/2+\sqrt{-1}\,n}}$	$n = -10\,000$ to $10\,000$

$\mathrm{Im}(z)$ is the imaginary part of z

Plot:



- Enlarge
- Customize

Arc length of curve:

- Step-by-step solution

$$\int_{-10000}^{10000} 1\, dn = 20\,000$$

Download Page

POWERED BY THE **WOLFRAM LANGUAGE**

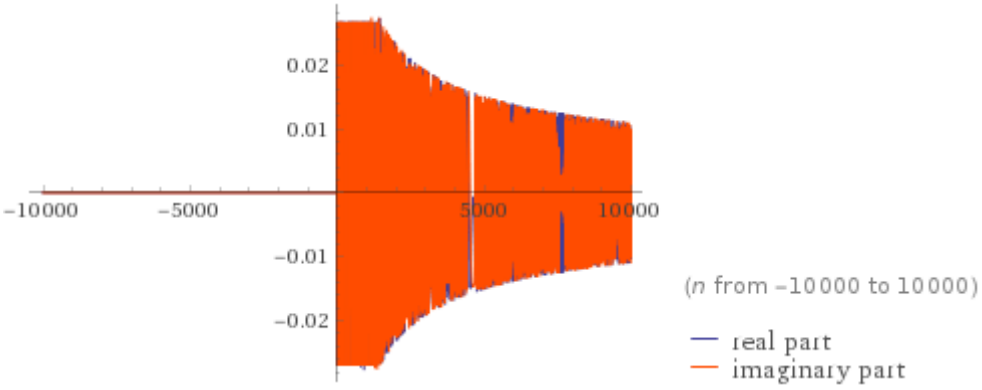
Input interpretation:

plot	$\frac{\mathrm{Re}(1)}{n^{1/2+\sqrt{-1}\,n}}$	$n = -10\,000$ to $10\,000$

$\mathrm{Re}(z)$ is the real part of z

Plot:

- Complex-valued plot



- Enlarge
- Customize

Arc length integral:

$$\int_{-10000}^{10000} \sqrt{1 - \frac{1}{4} n^{-3-2in} (-i + 2n + 2n \log(n))^2} \, dn$$

arc length	$y = \int \left(\frac{1}{2} + \sqrt{-1}\, n\right) dn$	$n = -10\,000$ to $10\,000$

$$\int_{-10000}^{10000} \sqrt{1 + \left(\frac{1}{2} + i n\right)^2} \, dn =$$
$$\frac{1}{8}\left((20\,000 + i)\sqrt{-399\,999\,995 - 40\,000\, i} + (20\,000 - i)\sqrt{-399\,999\,995 + 40\,000\, i} + 4 \sin^{-1}\left(10\,000 + \frac{i}{2}\right) - 4 i \sinh^{-1}\left(\frac{1}{2} + 10\,000\, i\right)\right) \approx 10\,002. + 0. \times 10^{-10}\, i$$

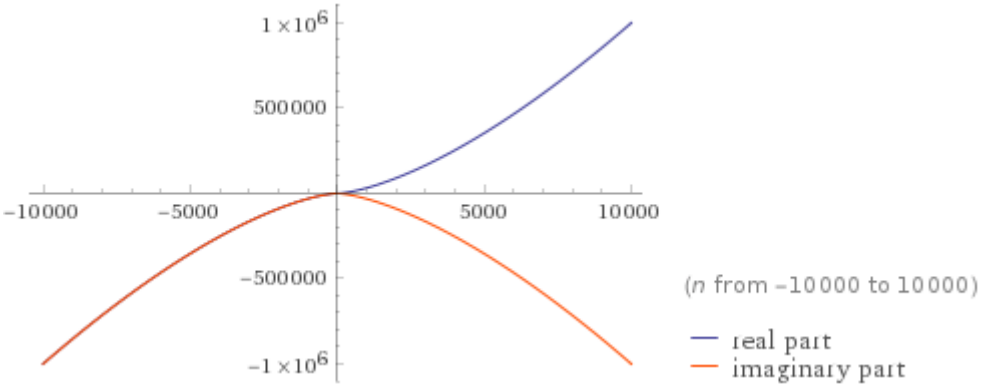
arc length	$y = \int \left(\frac{1}{2} + \sqrt{-1}\, n\right) dn$	$n = -10\,000$ to $10\,000$	=
arc length	$y = \frac{1}{2}(1 + i n) n + \text{constant}$	$n = -10\,000$ to $10\,000$	

arc length	$y = \int \frac{1}{n^{1/2+\sqrt{-1}\, n}} \, dn$	$n = -10\,000$ to $10\,000$

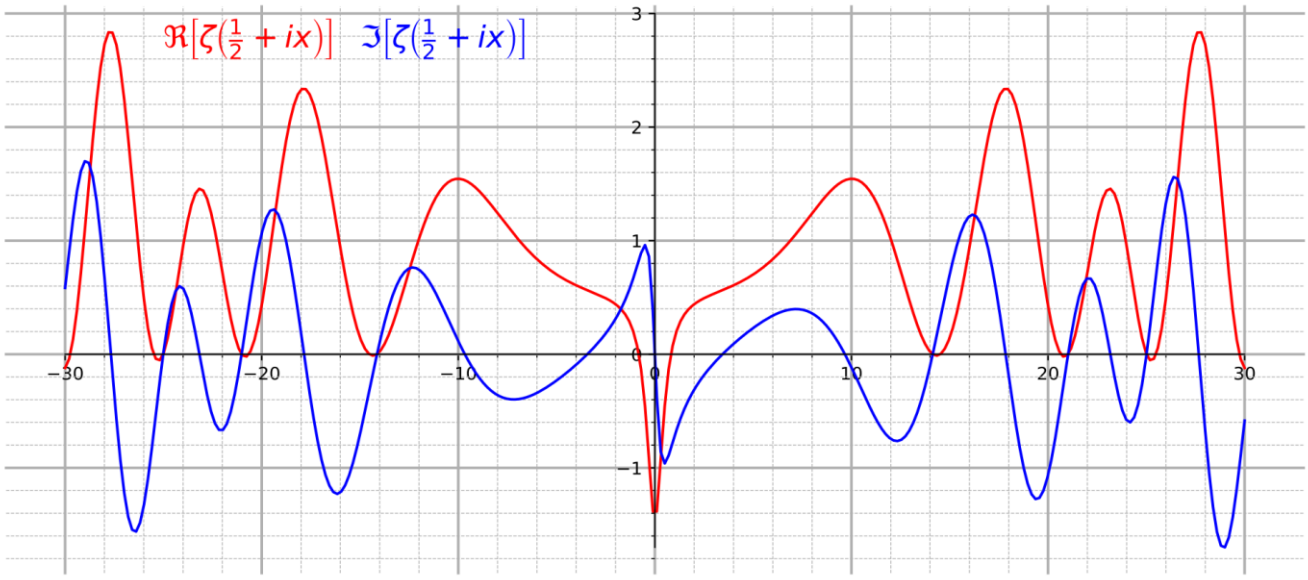
$$\int_{-10000}^{10000} \sqrt{1 + n^{-1-2in}} \, dn$$

plot	$n \sqrt{1 + \frac{1}{n} - 2n\sqrt{-1}}$	$n = -10\,000$ to $10\,000$

Plot:



Further more consider the graph of the expression of zeta function for the reals and the imaginary numbers when they meet at the zero non trivial point.



If I enlarge the figure and draw a square, I can then establish a proportion between the sides so that a derivable relationship is obtained for the sides of that square.

Observe the yellow lines of the square in the figure below and verify that along the angle of the blue imaginary line representative of the imaginary values of the zeta function it is possible to draw a line inscribed in that yellow square that represents the distortion of the square's proportions when I consider the numbers imaginary which allows me to establish a relationship by defining the derivative between X0 and the same green side "xi" then:

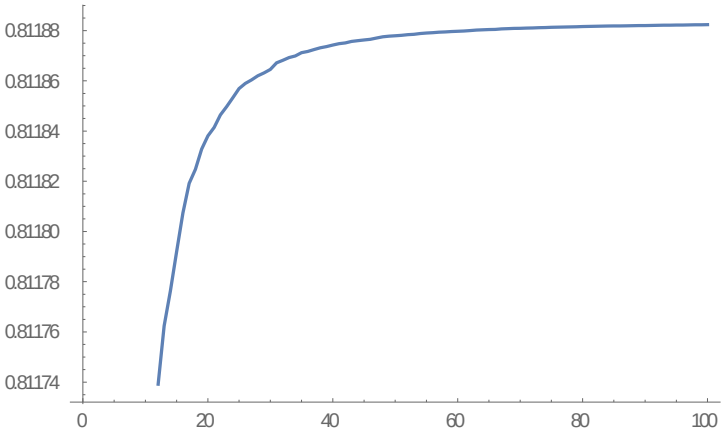
$$\lim_{x\to i}\frac{f(xi+\Delta xi)-f(x_i)}{\Delta x_0}=\frac{0{,}7+3{,}1-0{,}7}{3{,}8}=0{,}81\ldots$$

Note that the definition of the derivative to the limit has been slightly modified but preserving its proportions since I can both treat Δxi and Δx0 which otherwise considered would simply give me a value of 1 for the derivative which would correspond to the 90-degree sine, thus a rule of three can be established between the value of the derivative and the angle that would directly give me an angle of 81 degrees for the green line referring to the angle of the rise of the blue line that represents the imaginary zeta function of the Riemann equation.

Otherwise, it can be verified that all lines of the graph for both the function of real and imaginary numbers are equal and parallel, there must be a constant derivative that has a value equivalent to the angle of this line that is repeated ad infinitum.

At the beginning of the work, a derivative of x was proposed, tending to the imaginary $\lim_{x\to i}\frac{\sqrt{\frac{-2\pi}{\pi+1}}}{\sqrt{2\pi^2+2\pi}}=\frac{(\pi+1)*\sqrt{\frac{-2\pi}{\pi+1}}}{\sqrt{2\pi^2+2\pi}*n}$ which when computed gives the expected value of 0.8118 for any number considered. Represented below in computer language: $f = (((\mathrm{Pi}+1)*r)*\mathrm{Sqrt}[(-2*\mathrm{Pi}*r)/((\mathrm{Pi}+1)*r)])/((\mathrm{Sqrt}[(2*\mathrm{Pi}*r)\text{^}2+2*\mathrm{Pi}*r/n]))$

Graph of the limit of x tending to the imaginary:



Given the fact of being a horizontal asymptote to the value of n, it is noticed that it does not change when n goes to infinity, applying to any number, therefore for all numbers as long as x tends to the imaginary.

By a simple rule of three:Sin (90 ^{0})=1

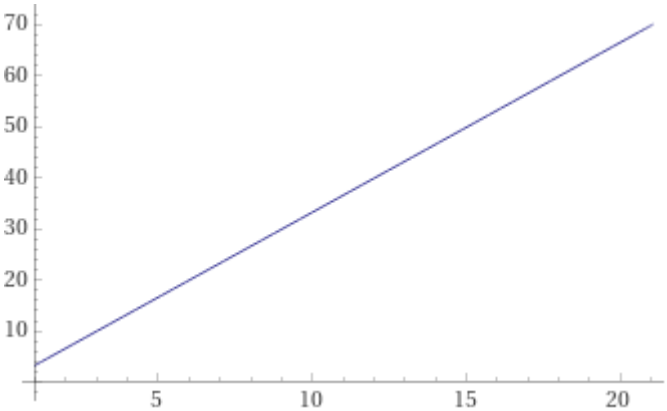
Sin(0.8118i)=0,9039 -> 0.9039 * 90 = 81 ^{0}

Which is the angle that forms between the green line and the absciss of the graph for every number when the imaginary part and the real part find each other at the point of the non trivial zeros.

To finally show that the fundamental trigonometric relation stablished by the angle that is preserved along the graph of the Riemann Function is related to the arc length integer of the number from 1 to n then it should, by considering n to be a non trivial zero , to be able to reach another non trvial zero , that if the angle is truly preserved along all the non trivial zeros, as it is shown in the graph below:

plot	$n \times \frac{0.9886399220}{0.29719183431}$	$n = 1$ to 21.02203963877

Plot:



- Enlarge
- Customize

Arc length of curve:

- Step-by-step solution

$$\int_{1}^{21.02203963877} 3.47366\, dn = 69.5497$$

```
21.02203963877
```

Is a known non trivial zero

And

```
69.54640171117
```

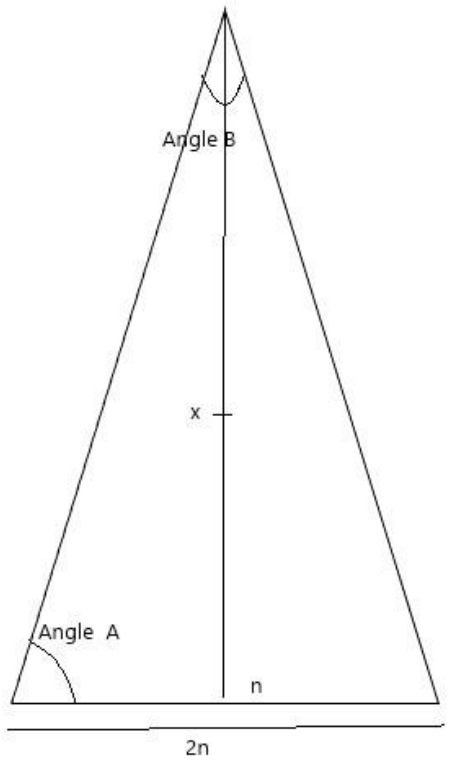
Is another non trial zero wich is reached within a 0.0037 accuracy.

Sin(17,298) =0,297341546457581003673490220117 0

Sin (81,351) =0,98862813516065091177705445818109

Sin(8,649) = 0,15038088431969587397686817407374

If I consider



If it is considered the sides of the isosceles triangle above and a pythagorean relation to the hypothenuse it is possible to get the number relative to the height of the triangle that when considered the side n to be equal to a non trivial zero distance to the origin zero, a number is obtained that is closely related to another far to the right non trivial number such that if that number N is considered in the prime distribution formula, the decimals reached are within the distance of the value of the height to the corresponding obtained non trivial zero:

H is the hypotenuse and 14,134 is the first non trivial zero, and 0.148595 is the sin of the angle 8.65 that is the half of the angle B. From the hypothenuse by pythagoras formula it is obtained the height, that when considered it to be corrected by the prime distribution function for the related height gives a number that is closest to a non trivial zero within a decimal distance.

H=14.134/0.148595

H=95.117

H^2-n^2=height^2 -> height=$\sqrt{H^2 - n^2} = \sqrt{95.117^2 - 14.134^2} = Height = 94.06 \rightarrow$

Log(94.06)*94.06=185.619 taking only the decimal places 0.619 + 94.06=94.679 vs 94.6513 it is equal to 1 decimal place

H=21.022/0.148595

H=141.471

H^2-n^2=height^2 -> height=$\sqrt{H^2 - n^2} = \sqrt{141.471^2 - 21.022^2} = Height = 139.9 \rightarrow$

Log(139.9)*139.9=300.2 taking only the decimal places -0.2 + 139.9=139.7 vs 139.7 it is equal to 1 decimal place

H=25.01/0.148595

H=168.309

H^2-n^2=height^2 -> height=$\sqrt{H^2 - n^2} = \sqrt{168.309^2 - 25.01^2} = Height = 166.44 \rightarrow$

Log(166.44)*166.44=369.7 taking only the decimal places 0.7 + 166.44=167.14 vs 167.18 it is equal to 1 decimal place

H=1306643440879598221999,740450535/0.148595 largest known non trivial zero (Hiary and Odlyzko computed 5 billion zeros near the 10^{231023}rd zero. The last had imaginary part approximately)(http://www.dtc.umn.edu/~odlyzko/doc/zeta.moments.pdf)

H=8.793.320.373.361.137.467.611,5646592079

H^2-n^2=height^2 -> height=$\sqrt{H^2 - n^2} =$
$\sqrt{8.793.320.373.361.137.467.611,5646592079^2 - 1306643440879598221999,7404505355^2} =$
$Height = 8.695.698.137.986.068.450.041,8017187731 \rightarrow$

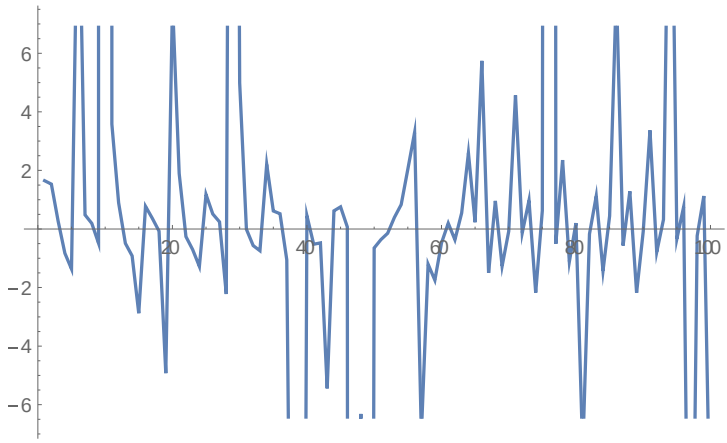
Log(8.695.698.137.986.068.450.041,8017187731)*
8.695.698.137.986.068.450.041,8017187731=19.077.756.890.034.686.660.104,685192678taking only the decimal places 0.685192678 +
8.695.698.137.986.068.450.041,8017187731=8.695.698.137.986.068.450.042,4869114511
it is equal to 1 decimal place probable non trivial zero

N*log(N)= 166.441*Log(166.441)=369.7087 now consider just the decimal places it is within the difference of the value of the hypothenuse and the non trivial zero, and it Works as far as the 3 proposed values above, but it extends generating circles of radius equals the height of the triangle as long as there is a previous non trivial zero Always encountering the origin of the graph at zero.

```
sq=Table[j,{j,1000}]
n=Select[sq,PrimeQ,(100)]
sq2=Table[k,{k,100}]
n3=sq2*-1
r=Table[k1,{k1,100}]
f=(((Pi+1)*r)*Sqrt[(-2*Pi*r)/((Pi+1)*r)])/((Sqrt[(2*Pi*r)^2+2*Pi*r/n]))
bb=Im[f]
s1cc=(((1)+bb*r*Sqrt[-1])+((0)+bb*r*Sqrt[-1]))/2
zz=-n3
zx=n
aa=59.34
a=aa-50
b=aa+50
x1c1c=Sum[1/zx*zx^s1cc,{zx,a,b}]
x1cc1=Re[x1c1c]
x1cc2=Im[x1c1c]
```

$\text{proof} = (\text{x1cc1} - \text{x1cc2})/(\text{x1cc1} + \text{x1cc2})$

$\text{ListLinePlot[proof]}$



The values of the graphic correspond to a corrected value as:

$\frac{59{,}34(non\ trivial\ zero)*0.5042}{0.5} = 59.83 + decimal\ value\ of(\log\ \ (59.83) * 59.83)(0.31) = grphic\ plot\ of\ \ 60.14 = 50{,}14\ in\ the\ graph\ the\ other\ values\ follow\ that\ relation$

Next non trivial zero(60.83 * 0.5042)/0.5+log(61.34)*61.34 just the decimal part=62

Rule of 3:

60,14--------50.14

62----------51,69

51.69 * 0.5042/0.5=52.12(point in the graph...corresponding to 60.83 a known non trivial zero

All the other values can be obtained following the above rule, where there will be a point in the graph related to either a spike, a crossing at the x axis, or a peak down.

Now doing the reverse way,considering a known value of a certain coordinate from the graph. Let´s suppose 71,19

62----------52.12

x----------71.19

x=84.68 (non trivial zero at 84.73)

62-------52.12

x----------56 x=66.615

852178417522634708,1108252173221 a non trivial zero related to 12805105890681411,415 a known non trivial zero

In the case that the number candidate for a non trivial zero does not correspond to a specific point in the graph, it is possible to find the correct decimal places so it fits the crossing of a line of the graph in the x axis by considering the following:

$$x * logx = n$$

$$H^2 = n^2 + height^2 \rightarrow height^2 = H^2 - n^2 \rightarrow \frac{n^2}{0.148595^2} - n^2 = height^2$$

$$n^2 - 0.148595^2 n^2 = 0.148595^2 height^2 \rightarrow 0.9779195n^2 = 0.148595^2 height^2 \rightarrow n = \sqrt{\frac{0.148595^2 height^2}{0.9779195}} =$$

$$n\ then\ divide\ by\ the \log n\ to\ obtain\ the\ decimal\ places\ to\ be\ subtracted\ from\ the\ value\ of\ n$$

Now applying that principle to prime numbers:

For instance: $11\frac{11}{0.148595} = 74.0267169 => 74.0267169^2 - 11^2 = 5.358{,}95481722 \rightarrow \sqrt{5.358{,}95481722} = 73.2048\ considering\ only\ the\ integer\ part\ is\ a\ prime\ number$

Conjecture : there is another prime number related to first prime number that obeys the trigononmetric fundamental relation of the non trivial zeros

As it is conjectured it can also be proven by a computational of the first 100 primes. If it can be shown that it will generate 100 trueQ (prime verification function) out of the first 100 primes , even if considered small deviations from the original proposed method, after a small correction of the rule it is possible to verify that there is zero intersection for all the integers generated from the rule, that are candidates for prime numbers, that there are corresponding 100 true results.

```
sq=Table[j,{j,1000}]
n=Select[sq,PrimeQ,(100)]
a=n/0.148595
b=Sqrt[a^2-n^2]
c=Log[b]
c1=IntegerPart[c]
c2=1
d=FractionalPart[c]
dd=b*c
d2=FractionalPart[dd]
d1=d2+c2+d
e=b+d1
ft=IntegerPart[e]
v=Select[ft,EvenQ]
vv=v+1
vv2=v-1
PrimeQ[vv2]
PrimeQ[vv]
p=PrimeQ[ft]
g=b-d1
h=IntegerPart[g]
```

```
pp=PrimeQ[h]
sq=Table[j,{j,1000}]
n=Select[sq,PrimeQ,(100)]
a=n/0.148595
b=Sqrt[a^2-n^2]
c=Log[b]*b
e=FractionalPart[c]
f=b+e
g=Log[b]-1
hh=IntegerPart[g]
fg=b+e+hh
fgh=IntegerPart[fg]
PrimeQ[fgh]
jj=IntegerPart[b]
ppp=PrimeQ[jj]
Intersection[f,h,hh,vv2,vv]
sq=Table[j,{j,1000}]
n=Select[sq,PrimeQ,(100)]
a=n/0.148595
b=Sqrt[a^2-n^2]
c=Log[b]
c1=IntegerPart[c]
c2=c1-1
d=FractionalPart[c]
dd=b*c
d2=FractionalPart[dd]
d1=d2+c2+d
e=b+d1
e3=e-d1
```

```
f2=IntegerPart[e]
ff2=IntegerPart[e3]
PrimeQ[f2]
PrimeQ[ff2]
Intersection[ft,h,fgh,vv2,vv,f2,ff2]
Q=Select[ft,PrimeQ]
Q1=Select[h,PrimeQ]
Q2=Select[fgh,PrimeQ]
Q3=Select[vv2,PrimeQ]
Q4=Select[vv,PrimeQ]
Q5=Select[f2,PrimeQ]
Q6=Select[ff2,PrimeQ]
m=Union[Q1,Q2,Q3,Q4,Q5,Q,Q6]
misiec=Sort[m]
Length[misiec]
```

Results of the PrimeQ functions of the above program lines:

```
PrimeQ[vv2]
```

{False,True,False,False,True,False,False,False,False,True,False,False,False,False,False,False,False,True,False,False,False,False,False,False,True,False,False,False,False,False,True,False,True,True,False,False,False,False,False,False,True,False,False,True,False,False,False,False,False,False}

```
PrimeQ[vv]
```

{True,False,True,False,False,False,False,False,False,False,False,False,False,False,False,False,False,True,True,False,False,False,False,False,False,True,False,False,False,False,True,False,False,False,False,False,False,False,True,False,False,True,False,False,False,True,False,True,True,False,False}

```
p=PrimeQ[f]
```

{False,True,False,False,True,True,True,False,False,True,False,False,False,False,False,False,False,True,False,False,False,False,False,False,False,False,False,False,False,False,False,Fal

se,False,False,False,False,False,False,False,False,False,False,False,False,False,False,True,False,False,True,False,True,False,False,False,False,True,False,False,True,False,False,True,False,False,False,False,False,False,False,False,True,False,False,False,False,False,False,True,False,False}

pp=PrimeQ[h]

{True,True,True,True,True,False,False,False,True,True,False,False,False,True,False,True,False,False,True,False,False,True,False,False,True,False,True,False,False,False,False,False,False,False,False,False,False,False,False,True,False,False,False,False,False,False,False,False,False,False,False,False,False,True,False,False,False,False,False,False,False,False,False,False,False,False,False,False,False,False,False,True,False,False,False,False,False,False,False,False,True,False,False,False,True,False,False,False,False,False,False,False,False,False,False,False,False,False,False,True,False,False,False,False,False}

PrimeQ[fgh]

{False,False,False,False,False,False,False,False,True,True,False,True,True,False,False,False,False,False,False,False,False,False,False,False,False,False,False,True,False,False,False,True,False,True,False,False,False,False,False,False,True,False,False,False,True,True,False,False,False,False,False,False,False,False,False,False,False,False,False,False,False,False,False,True,False,False,False,True,False,True,False,False,False,False,False,False,False,False,False,False,False,False,False,False,False,True}

ppp=PrimeQ[jj]

{True,True,False,False,True,False,True,False,True,False,True,False,False,False,False,True,False,False,False,False,False,False,False,False,False,True,False,False,False,False,False,False,False,False,False,False,False,False,False,False,False,True,False,True,True,False,False,False,True,False,False,True,False,False,False,False,False,False,False,False,False,True,False,False,False,False,False,True,True,False,False,False,False,False,False,False,True,False,True,False,False}

PrimeQ[f2]

{False,False,False,False,False,False,False,True,True,True,True,True,True,False,True,False,True,False,False,False,True,False,False,False,False,True,True,False,False,False,False,False,False,False,True,False,True,True,True,False,False,False,True,True,False,False,False,False,False,False,False,True,False,False,False,False,False,False,False,True,True,False,False,False,False,False,False,False,False,False,False,False,False,False,True,False}

PrimeQ[ff2]

{True,True,False,False,True,False,True,False,True,False,True,False,False,False,False,True,False,False,False,False,False,False,False,False,False,True,False,False,False,False,False,False,False,False,False,False,False,False,True,False,True,True,False,False,False,True,False,False,False,False,False,False,False,False,False,False,True,False,False,False,False,True,True,False,False,True,False,False,False,True,False,True,False,False}

Intersection[ft,h,fgh,vv2,vv,f2,ff2]

{}

Q=Select[ft,PrimeQ]

Q1=Select[h,PrimeQ]

Q2=Select[fgh,PrimeQ]

Q3=Select[vv2,PrimeQ]

Q4=Select[vv,PrimeQ]

Q5=Select[f2,PrimeQ]

Q6=Select[ff2,PrimeQ]

m=Union[Q1,Q2,Q3,Q4,Q5,Q,Q6]

misiec=Sort[m]

{11,13,17,19,23,31,43,71,73,89,113,131,151,157,191,193,197,211,251,277,283,313,317,349,397,443,487,491,523,593,643,647,673,677,683,691,727,757,877,911,991,997,1051,1087,1091,1109,1117,1151,1153,1193,1277,1291,1511,1523,1553,1597,1601,1801,1871,1873,1877,1889,1949,1951,2069,2083,2089,2111,2203,2309,2311,2347,2351,2389,2551,2591,2671,2719,2729,2789,2791,2801,2803,2879,2887,3041,3067,3083,3109,3187,3319,3323,3347,3389,3467,3469,3607}

97 new primes generated from 100 known primes using the fundamental trigonometric relations of the non trivial zeros

Even more incredible is the fact that it gives prime numbers from 7 to 104 considering integers for the value of n be it prime or composite

sq=Table[j,{j,10000}]

```
n=Select[sq,IntegerQ,(100)]
a=n/0.148595
b=Sqrt[a^2-n^2]
c=Log[b]
c1=IntegerPart[c]
c2=1
d=FractionalPart[c]
dd=b*c
d2=FractionalPart[dd]
d1=d2+c2+d
e=b+d1
ft=IntegerPart[e]
v=Select[ft,EvenQ]
vv=v+1
vv2=v-1
PrimeQ[vv2]
PrimeQ[vv]
p=PrimeQ[ft]
g=b-d1
h=IntegerPart[g]
pp=PrimeQ[h]
sq=Table[j,{j,10000}]
n=Select[sq,IntegerQ,(100)]
a=n/0.148595
b=Sqrt[a^2-n^2]
c=Log[b]*b
e=FractionalPart[c]
f=b+e
g=Log[b]-1
hh=IntegerPart[g]
fg=b+e+hh
```

```
fgh=IntegerPart[fg]
PrimeQ[fgh]
jj=IntegerPart[b]
ppp=PrimeQ[jj]
Intersection[f,h,hh,vv2,vv]
sq=Table[j,{j,10000}]
n=Select[sq,IntegerQ,(100)]
a=n/0.148595
b=Sqrt[a^2-n^2]
c=Log[b]
c1=IntegerPart[c]
c2=c1-1
d=FractionalPart[c]
dd=b*c
d2=FractionalPart[dd]
d1=d2+c2+d
e=b+d1
e3=e-d1
f2=IntegerPart[e]
ff2=IntegerPart[e3]
PrimeQ[f2]
PrimeQ[ff2]
Intersection[ft,h,fgh,vv2,vv,f2,ff2]
Q=Select[ft,PrimeQ]
Q1=Select[h,PrimeQ]
Q2=Select[fgh,PrimeQ]
Q3=Select[vv2,PrimeQ]
Q4=Select[vv,PrimeQ]
Q5=Select[f2,PrimeQ]
Q6=Select[ff2,PrimeQ]
m=Union[Q1,Q2,Q3,Q4,Q5,Q,Q6]
```

```
misiec=Sort[m]

Length[misiec]
```

misiec=Sort[m]

{7,11,13,17,19,23,29,31,41,43,53,59,61,67,71,73,79,83,89,97,101,103,107,109,113,131,137,139,149,151,157,167,173,179,181,191,193,197,199,211,223,227,229,233,239,241,251,257,269,271,277,281,283,293,307,311,313,317,331,337,347,349,359,367,379,383,389,397,401,419,421,431,433,439,443,457,461,467,479,487,491,499,521,523,541,547,557,571,577,587,593,599,601,607,613,617,619,631,641,643,647,653,659,661}