Misiec´s zeta complex numbers and a few porperties

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It follows some properties of the misiec´s complex zeta function expressed in terms of the sum , remembering that all of the misiec´s numbers have the property of respecting the sin x =x theorem when x tends to zero and violates current known values for the squeeze theorem when applied to the sin x/x=1.

It follows the realtions encountered over the given so called misiec´s numbers :

$$\sum_{n=1}^{\infty} \frac{1}{n*n^{\frac{1}{2}}+n*n*i} = 2.83 + 4.08i$$

sin (2.83+4.08i)= 9.06885251 - 28.1406579 i

cos (2.83+4.08i)= -28.1567512 - 9.0636691 i

$\frac{sin}{cos} = tan \rightarrow \frac{\sin(Real)}{\cos(Real)} = \frac{9.06}{-28.1} = Cot \rightarrow \frac{\cos(i)}{\sin(i)} = \frac{-9.06i}{-28.1}$

$\frac{tan}{cot} = tan * tan = -1 = Tan^2 = -1\ tan = i$

tan $\frac{n^2}{2} * i = \frac{1}{2}\ imaginary\ for\ any\ Real\ number$ while $\frac{n^2}{2} * i = \frac{d}{dn}(i * \int n\, dn) = n^2 i$

$\frac{i\left(e^{n^2} - e^{-n^2}\right)}{2\left(e^{-n^2} + e^{n^2}\right)}$ as shown in the graphic of the Wolfram alpha page below

$$A = \begin{bmatrix} 9.06\,real & -28.1i \\ -28.1real & -9.06\,i \end{bmatrix} \rightarrow -A = \begin{bmatrix} -9.06\,real & 28.1i \\ 28.1real & 9.06\,i \end{bmatrix} \rightarrow A^T$$

$$= \begin{bmatrix} 9.06\,real & -28.1i \\ -28.1real & 9.06\,i \end{bmatrix} = A^2 = \begin{bmatrix} 9.06\,real^2 & -28.1i^2 \\ -28.1real^2 & -9.06\,i^2 \end{bmatrix} = A^H$$
$$= \begin{bmatrix} 9.06\,real^2 & 28.1^2 \\ 28.1real^2 & 9.06^{\,2} \end{bmatrix}$$

$work\ as\ self\ adjoint\ operator$ of an unbounded function tan = i which is undefined in terms of a previous function like f(n) </= Real (not a product of the function but defined to be imaginary in terms of n, so it is unbounded, but sstill gives eigenvalues that correspond to the initial function f=$\frac{1}{n*n^{\frac{1}{2}}+n*n*i}$. While

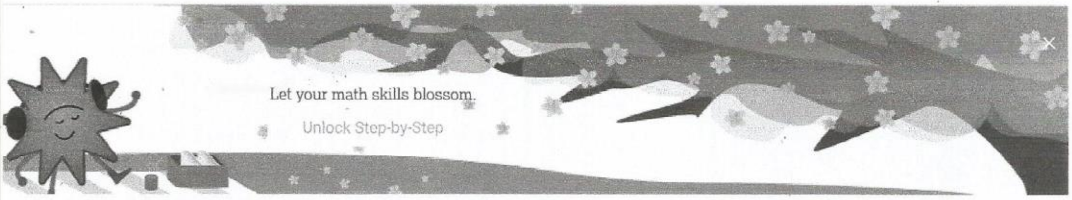
$\sum_{n=1}^{\infty}(\frac{1}{n*n^{\frac{1}{2}}+n*n*i})^{\wedge}-1=\infty.$ So the product of $\sum_{n=1}^{\infty}\frac{1}{n*n^{\frac{1}{2}}+n*n*i}*$ $\sum_{n=1}^{\infty}\left(\frac{1}{n*n^{\frac{1}{2}}+n*n*i}\right)^{-1} = \infty * 2.83+4.08i = 1\ such\ when\ a^{-1}*a =$ $1\ or\ i*\infty = 1$

$a^{-1}*a = 1 => \frac{n*n^{\frac{1}{2}}*n^{n^2 i}}{n*n^{\frac{1}{2}}*n^{n^2 i}} = 1\ and\ a^{-1}+a = \frac{1}{n*n^{\frac{1}{2}}*n^{n^2 i}} + n*n^{\frac{1}{2}}*n^{n^2 i} =$ $n^2*n^1*n^{4i}$ $\therefore\ a^{-1}+a = n^{3+4i}$ $\quad the\ exponent \approx 2.83+4.08i \pm = 3+4i$ for a =$\sum_{n=1}^{\infty}\frac{1}{n*n^{\frac{1}{2}}+n*n*i}$ so the sum is equal to the exponent of the sum, allowing me to use the exponents to calculate the derivative to find the value of the tangent for the sum of the misiec´s zeta xomplex function to be equal to ½ i as shown before in “tan$\frac{n^2}{2}*i =$ $\frac{1}{2}\ imaginary\ for\ any\ Real\ number$ while $\frac{n^2}{2}*i$=$\frac{d}{dn}(i*\int n\,dn) = \frac{n^3 i}{n} =$ $n^2 i\ like\ the\ exponent\ of$ $\frac{1}{n*n^{\frac{1}{2}}+n*n*i}$ which is$(n^2*n^1*n^{4i})^{\wedge}1/2$ for $a =$ $\frac{1}{n^1*n^{\frac{1}{2}}*n^{n^2 i}}$. If I consider the expression. of the derivative to be $\frac{n^3 i}{n}+c =$ $n^2 i\ \ then\ c = n^{-1}$ and -1=0 meaning that the values of negative integers will be counted at the zero point. And if consideering n-> infinity c becomes the value of the derviative of a constant wich is zero meaning tht the derivative of the initial expression to infinity will equal zero or the tangent will assume a value of zero wich is equal to i so that as the function assumes values that go to infinity there will be many zeros for every number on the critical line ½ . or in other terms the tangent of zero will be zero or i expressed as an orthogonal line of value of a 90 degrees angle which is also equal to the infinity that will correspond to a^-1, when in the denominator will equal the value o i = 0 as explained in the lines below. To infinity then every value of n will equal the value of i in critical strip between 1 and zero tending to the value of zero at the half point when the 0+1/2 equal the real value ½ of the real axis that coincides at the point of the circle to the 90 degrees angle of the polar plot.

In relative terms then the denominator n being real is disatatched from the n associated with i in in^2 and will Always have a value of ½ proportional to any infinit value of ni and can be represented as a real variable constant c being equal ½ . So the circular graph at the end of this pages has a real componente of 1/2i to be =1/2 and an imaginary "y" axis to have the values from 0 to 1 referring 1 to be equivalent in a polar coordinate to infinity. Plus , the expnent needed to bring the value of the exponent of the sum of a +a^-1 can be used to be considered as the total value of the sum as it was the case for $2.83+4.08i\pm=3+4i$ when $a^{-1}+a=\frac{1}{n*n^{\frac{1}{2}}*n^{n^2 i}}+n*n^{\frac{1}{2}}*n^{n^2 i}=n^2*n^1*n^{4i}$ needs to normalized to the original value of "a"= $n*n^{\frac{1}{2}}*n^{n^2 i}$ as the exponent. Then the exponent ½ is the point where $a^{-1}+a=a^{2^{\frac{1}{2}}}$ $making\ a^{-1}=0\ and\ making\ a^{-1}*i=1\ since\ a=i\ \ and\ as\ a^{-1}=\frac{1}{i}\ and\ a^{-1}=0\ what\ leads\ to\ conclude\ that\ a^{-1}\ being\ a\ divergent\ series\ to\ infinity$ Makes $i=\frac{1}{a^{-1}}=\frac{1}{\infty}=0\ when\ considering\ infinit\ numbers$ what proves that there are infinit zeros at the point of ½ real when used as an exponent . So far we have that the 1 at polar plot means infinity and the zero means the value of i to infinity both at the value of ½ when

$when\ considering\ an\ analytical\ continuation\ analysis$ as the value of a^-1= divergence series. Explaining then that there are inifnit zeros associated with the value of the exponent = ½ real. In between the points of 1 and zero both associated with the infnit representation theres is a factor that divides the correlation that is 0 + 1 /2 =1/2 when considered expressed in the imaginary y line of the graph relates to the pinto f ½ real of the x axis and it represents na intermediate point where the two functions a and a^-1 = 0 for na exponent of ½ real and that repeats it self for every cycle arround that point.

which is represented in the last circular graph as the value of 1 in the imaginary "y" axis. But if i consider n^2/x* i = i*1/2 then it can be considered that n^2/2 is equal 1/2 real.



WolframAlpha computational intelligence.

tan(n^2*sqrt(-1))/2 from -100 to 100

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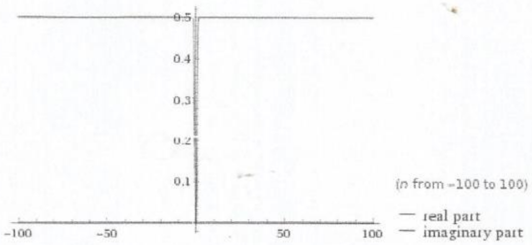
Input interpretation:

plot	$\frac{1}{2}\tan\left(n^2\sqrt{-1}\right)$	$n = -100$ to 100

Plot:



Arc length of curve: More digits Enlarge Customize

$$\int_{-100}^{100}\sqrt{1-n^2\,\mathrm{sech}^4(n^2)}\,dn \approx 199.784\ldots$$

sech(x) is the hyperbolic secant function

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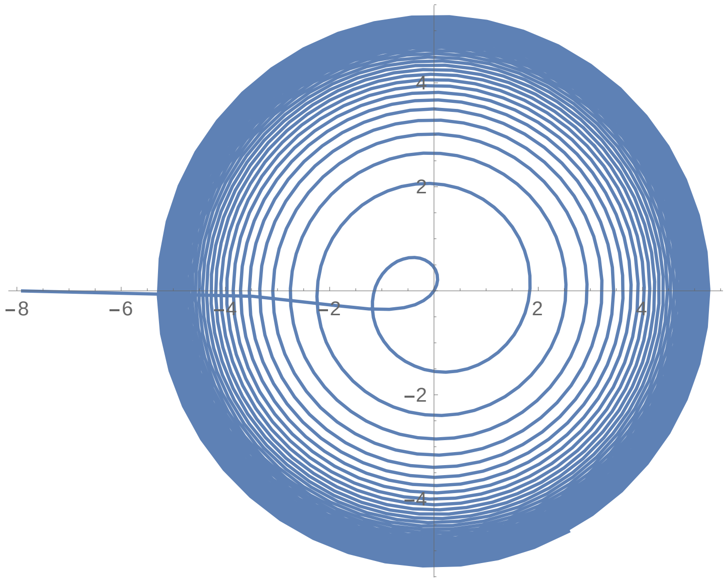
Related Queries:

```
sq=Table[j,{j,1000}]
n=Select[sq,PrimeQ,(100)]
r=Table[k1,{k1,100}]
sq2=Table[k,{k,100}]
n3=sq2*-1
f=(((Pi+1)*r)*Sqrt[(-2*Pi*r)/((Pi+1)*r)])/((Sqrt[(2*Pi*r)^2+2*Pi*r/n]))
bb=Im[f]
s1c1=1/n*n^((1/2)+n*n*Sqrt[-1])
s1c=ReIm[s1c1]
z=Sin[s1c]
v=z-s1c
PolarPlot[Log[v],{v,-200,200}]
```




```
sq=Table[j,{j,1000}]
n=Select[sq,PrimeQ,(100)]
r=Table[k1,{k1,100}]
sq2=Table[k,{k,100}]
n3=sq2*-1
f=(((Pi+1)*r)*Sqrt[(-2*Pi*r)/((Pi+1)*r)])/((Sqrt[(2*Pi*r)^2+2*Pi*r/n]))
bb=Im[f]
s1c1=1/n*n^((1/2)+n*n*Sqrt[-1])
s1c=ReIm[s1c1]
z=Sin[s1c]
v=z-s1c
PolarPlot[Sin[s1c],{s1c,-200,200}]
```

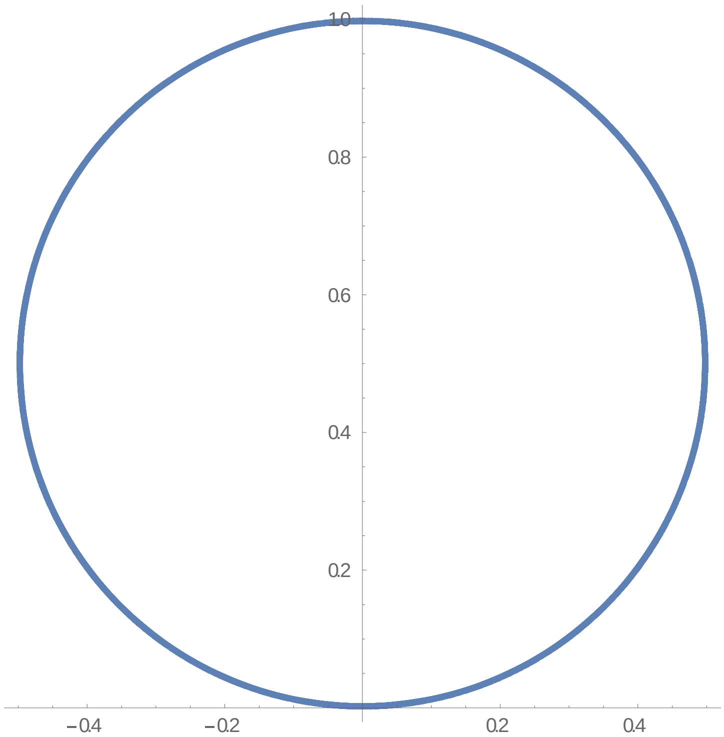
Or

```
sq=Table[j,{j,1000}]
n=Select[sq,PrimeQ,(100)]
r=Table[k1,{k1,100}]
sq2=Table[k,{k,100}]
n3=sq2*-1
f=(((Pi+1)*r)*Sqrt[(-2*Pi*r)/((Pi+1)*r)])/((Sqrt[(2*Pi*r)^2+2*Pi*r/n]))
bb=Im[f]
s1c1=1/n*n^((1/2)+bb*n*Sqrt[-1])
s1c=ReIm[s1c1]
z=Sin[s1c]
v=z-s1c
PolarPlot[Sin[s1c],{s1c,-200,200}]
```

Or the inverse of the misiec’s function :

```
sq=Table[j,{j,1000}]
n=Select[sq,PrimeQ,(100)]
r=Table[k1,{k1,100}]
sq2=Table[k,{k,100}]
n3=sq2*-1
f=(((Pi+1)*r)*Sqrt[(-2*Pi*r)/((Pi+1)*r)])/((Sqrt[(2*Pi*r)^2+2*Pi*r/n]))
bb=Im[f]
s1c1=1/n*n^((1/2)+n*n*Sqrt[-1])
s1c=ReIm[s1c1^-1]
z=Sin[s1c]
v=z-s1c
PolarPlot[Sin[s1c],{s1c,-200,200}]
```

Gives the graph:



The value of the imaginary axis “y” ato ne is equal to the limit of the product of the 2 funtions of the sum of the misiec zeta function where the value of “f” is equal to the sin of the value gives a continous infinit relation to the value of infinity times i here represented by 1 and to the value of the tangent of the imaginary exponent of the zeta function while a^-1 +a = a^2 +1 that when represented as a^2=-1 is equal to the value of $\sqrt{-1}$ or “i” when “a” is $(\sum_{n=1}^{\infty}(\frac{1}{n*n^{\frac{1}{2}+n*n*i}}))$. And ½ over the “x” axis is the value of the

$(\sum_{n=1}^{\infty}(\frac{1}{n*n^{\frac{1}{2}+n*n*i}}))$ *that would leave for the denominator* $n*n^{\frac{1}{2}}*\frac{1}{2}$ *which leaves as the sum to real infinity* $+\frac{1}{2}$ *for every complex number* $a+bi$ *with realpart* $\frac{1}{2}$ *along an infnit possible circular path.*

$\mathrm{Re}[2^{\frac{1}{2}-4i}], \mathrm{Im}[2^{\frac{1}{2}-4i}]\}, \{\mathrm{Re}[3^{\frac{1}{2}-9i}], \mathrm{Im}[3^{\frac{1}{2}-9i}]\}, \{\mathrm{Re}[5^{\frac{1}{2}-25i}], \mathrm{Im}[5^{\frac{1}{2}-25i}]$

$\mathrm{Re}[5^{\frac{1}{2}-25i}], \mathrm{Im}[5^{\frac{1}{2}-25i}]\}, \{\mathrm{Re}[7^{\frac{1}{2}-49i}], \mathrm{Im}[7^{\frac{1}{2}-49i}]$

$\mathrm{Re}[11^{\frac{1}{2}-121i}], \mathrm{Im}[11^{\frac{1}{2}-121i}]\}, \{\mathrm{Re}[13^{\frac{1}{2}-169i}], \mathrm{Im}[13^{\frac{1}{2}-169i}]$

� �

40 , $\{\mathrm{Re}[211^{\frac{1}{2}-44521i}], \mathrm{Im}[211^{\frac{1}{2}-44521i}]\}, \{\mathrm{Re}[223^{\frac{1}{2}-49729i}]\ \mathrm{Im}[223^{\frac{1}{2}-49729i}]$

$\mathrm{Re}[227^{\frac{1}{2}-51529i}], \mathrm{Im}[227^{\frac{1}{2}-51529i}]\}, \{\mathrm{Re}[229^{\frac{1}{2}-52441i}], \mathrm{Im}[229^{\frac{1}{2}-52441i}]...$

(227^1/2)/227^-51529i = -111.380863 - 21.8301011 i

-21.8301011 i+0.8118i=21.0182 non trivial zero = 21.0220396

(223^1/2)/223^-49729i = -41.6253458 - 103.438777 i

- 103.438777 i non trivial zero=103.725

(211^1/2)/211^-44521i = 67.4421223 - 81.1283559 i

- 81.1283559 i -0.8118i =-81.93i non trivial zero= 82.910 =/- 1

(227^1/2)/227-51529i =0.5-51529i

223^1/2/223-49729i=0.5-49729i

$$\zeta(0) = \theta + it$$

For simplicity of writing $\zeta(0) = S \to S = t + it => -t = it => i = \frac{-t}{t} \to i = -1$

$\sqrt{-1} = -1$

$-1^{1/2} = -1^1$

$\frac{1}{2} = 1$ “exponentes” ; 1=2

S= $\theta + it$; $\theta = \frac{1}{2}$; $t = \frac{1}{2}$ (a)

$0 = \frac{1}{2} + \frac{i}{2}$

$-\frac{1}{2} = \frac{i}{2}$

$i = -1$; 1=2 “exponents”

Making t different from theta it is possible to deduce that it is equal the condition of $\theta\ having\ the\ same\ value\ as\ the\ number\ t\ being\ \theta\ the\ real\ part\ of\ the\ zeta\ function\ equals\ half\ it$

Resembles and mimic the values of the real part being equal to the imaginary term of $s=\theta+it$ whcih is the case for the square of the sine and cosine of the summation of $\sum_{n=1}^{\infty}\frac{1}{n*n^{\frac{1}{2}+n*n*i}}=$ 2.83 + 4.08i that is shown in the last line as it also shows that the greater value for the exponent that it is raised the closer ande equal becomes the real to the imaginary part of the zeta function thus proving that it is a necessary condition to have the theta with a value of ½ .

$0=\frac{1}{2}+it$

$-\frac{1}{2}=it\ ;\ -1=2it$

$i=\frac{-1}{2t}\rightarrow i=-1*10^{-n}$

$-1^{1/2}=-2t^{-1}\quad\div 2\rightarrow\ \frac{-1^{1/2}}{2}=-t^{-1}\rightarrow\ \ \sqrt{-1}*2^{-1}=-t^{-1}\rightarrow$

$-1^{1/2}*2^{-1}=-t^{-1}\rightarrow$

$-2^{-1/2}=-t^{-1}\ \therefore\ \ exponents\ \frac{1}{2}=1$ -> 1=2

$(i)^{-1}=\left(\frac{-1}{2t}\right)^{-1}\rightarrow\frac{1}{i}=-2t\rightarrow$

$-1^{-1/2}=-2t\rightarrow\frac{-1}{\sqrt{1}}=-2t\rightarrow\frac{-\sqrt{1}}{1}=-2t$

1=2t $\therefore t=\frac{1}{2}$ (a)   → i=-1 and 1=2

If I consider that the number when $\theta=1\ and\ 0\ must\ be\ contained\ in\ between\ the\ critical\ strip\ 0\ and\ 1\ then\ the\ sum\ of\ the\ zeta\ function$

for those numbers must fall with in the limits of the summation when i consider $\theta=1/2$ and as a fact the summation gives the following results : for $\theta=\frac{1^2}{2}=$

$1\ then\ i\ can\ cosider\ the\ value\ of\ \left(\sum_{n=1}^{\infty}\frac{1}{n*n^{\frac{1}{2}+n*n*i}}\right)^{2} = \sum_{n=1}^{\infty}\frac{1}{n*n^{\frac{1}{1}+(n*n*i)^{\wedge}2}} =$

$$\sum_{n=1}^{\infty} n^{-3-2\,i\,n^2} \approx 1.12393 + 0.0535117\,i$$

when 1.12393+0.0535117i < 2.83+4.08i

and when $\theta = 0 \rightarrow$ $\sum_{n=1}^{\infty} n^{-1-i\,n^2} \approx 0.447613 - 0.905577\,i$

$tha\ is\ even\ lower\ than\ the\ summation\ of\ \theta = 1$

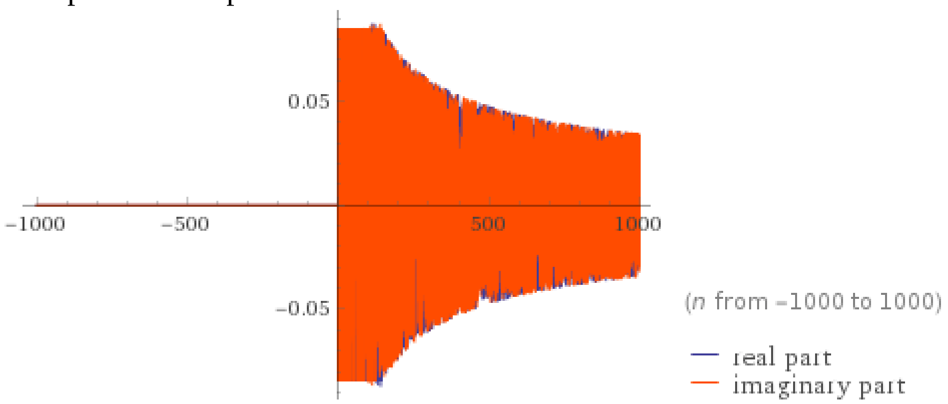
“ sin((2.83+4.08i)^2)= -3.78743747 × 10^9 - 3.77322494 × 10^9 i

cos((2.83+4.08i)^2)= -3.77322494 × 10^9 + 3.78743747 × 10^9 i”

plot	$\frac{1}{n}\, n^{1/2+n\,n\,\sqrt{-1}}$	$n = -1000$ to 1000

Plot:

- Complex-valued plot



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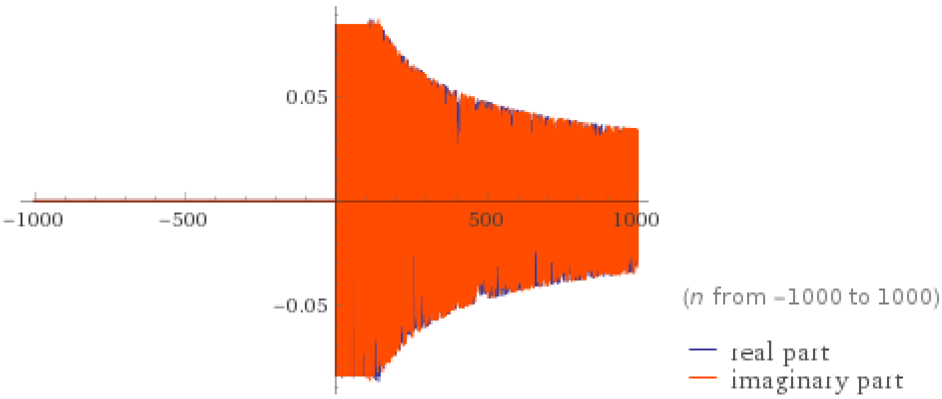
Arc length integral:

$$\int_{-1000}^{1000}\sqrt{1-\frac{1}{4}\,n^{-3+2\,i\,n^2}\left(i+2\,n^2+4\,n^2\log(n)\right)^2}\;dn$$

plot	$\sin\left(\frac{1}{n}\, n^{1/2+n\,n\,\sqrt{-1}}\right)$	$n = -1000$ to 1000

Plot:



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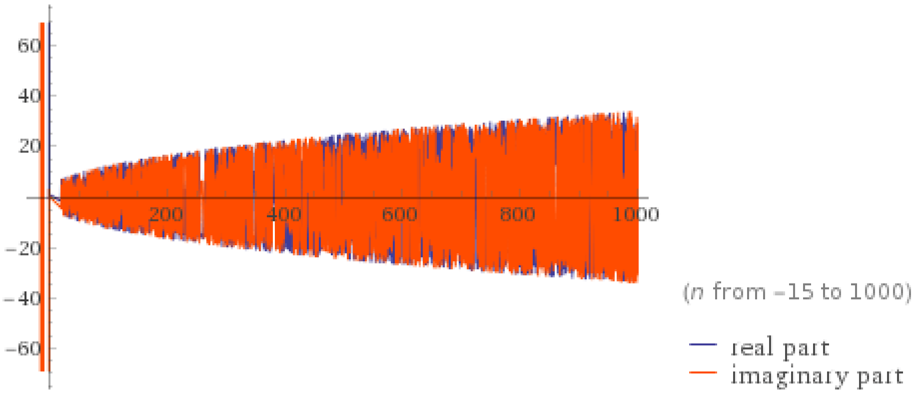
Arc length integral:

$$\int_{-1000}^{1000}\sqrt{1-\frac{1}{4}\,n^{-3+2\,i\,n^2}\cos^2\left(n^{-1/2+i\,n^2}\right)\left(i+2\,n^2+4\,n^2\log(n)\right)^2}\;dn$$

plot	$\dfrac{1}{\frac{1}{n}\, n^{1/2+n\,n\,\sqrt{-1}}}$	$n = -1000$ to 1000

Plot:



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Arc length integral:

$$\int_{-1000}^{1000}\sqrt{1-\frac{1}{4}\,n^{-1-2\,i\,n^2}\left(i+2\,n^2+4\,n^2\log(n)\right)^2}\;dn$$

[78284141062 − 103302933873i; 2 + i, −2 + i, −1 − i, −2, −2 − i, −3, −4 , ...]

(using the Hurwitz expansion)

Since n is a natural integer n it will be prime if only if n ^ (3/2) = n√n without other representations. Even if I arbitrarily establish a relationship between a radical and the factorial expression of that number, I can list its exponents and verify a list of inequalities that are not repeated except for prime numbers such as:

$\sqrt{n}(radical) = n\ (factorization\ product)$ where $n^{\frac{1}{2}} = n^1\ making\ the\ inequality\ \frac{1}{2} = 1\ \ for\ 1 = 1\ \ whcih\ does\ not\ stand\ for\ any\ other\ non\ prime\ number\ as\ in\ \sqrt{28} = 2\sqrt{7}\ \rightarrow 28^{\frac{1}{2}} = 2^1 * 7^{\frac{1}{2}} \therefore 14^{\frac{1}{2}} = 7^{\frac{1}{2}}\ \ where\ the\ exponents\ will\ be\ \frac{1}{2} = \frac{1}{2}\ for\ 2 = 1$ but if i relate $\frac{1}{2} = 1\ for\ Sin\ \frac{n^{\frac{1}{2}}}{n^1}\ then\ Sin\ \frac{n^{\frac{1}{2}}}{n^1} = 1\ and\ if\ \sqrt{n}$=n then $Sin\ \frac{\sqrt{n}}{n} = Sin\sqrt{n}\ \ as\ it\ happens\ for\ the\ inverse\ of\ the\ misiec's\ numbers\ shown\ in\ the\ last\ 2\ graphs$

Which then proves the relation of the misiec´s numbers to prime numbers factoring and radicals.

Since Sin (x)/x =1 for x tending to zero, and it is true for x= $\frac{1}{n*n^{\frac{1}{2}+n*n*i}}$ then by making $\sqrt{n} = n\ then\ Sin\ \sqrt{n}$=n or $Sin\ \sqrt{n} = \sqrt{n}\ a\ still\ proportional\ relation\ valid\ for\ the\ above\ squeeze\ theorem\ statement$

As it happens in $Sin\ n^{\frac{1}{2}} * n^{-1} = Sin\frac{1}{\sqrt{n}} = Sin\ \sqrt{n}\ or\ Sin\ n \therefore Sin\ \frac{\sqrt{n}}{n} = 1$ where the solution is according to Wolfram alpha na integer value of zero the same value for Sin n=n that is valid for the case of the inverse of the misiec´s numbers shown in the last graph of this paper

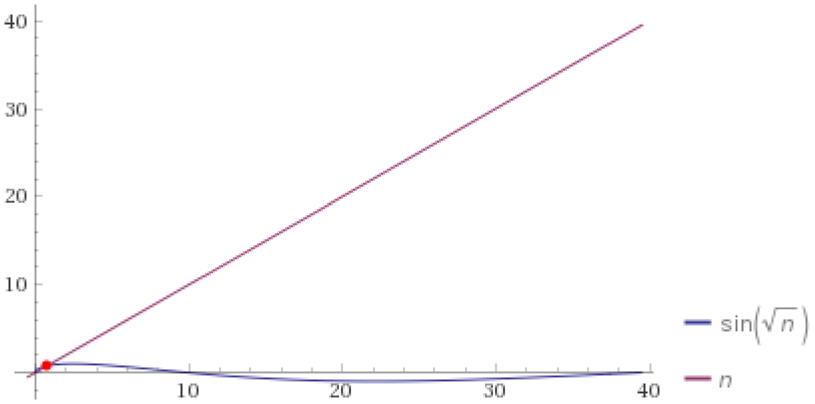
Input interpretation:

solve	$\sin(\sqrt{n}) = n$

Solution over the integers:

$n = 0$

Plot:



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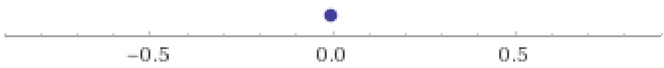
Number line:

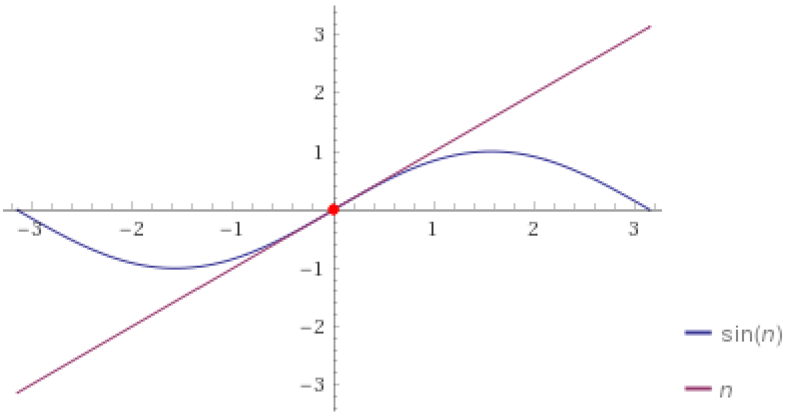


solve	$\sin(n) = n$

Solution over the integers:

$n = 0$

Plot:



This will be true for every number that respect the usual relation of the sinx =x for x tending to zero theorem by since it has been found emprirically that it is valid for any misiec´s complex number then it can be applied to $\frac{1}{n{*}n^{\frac{1}{2}+n{*}n{*}i}}$ and its inverse as proven by the ploting of the graph below

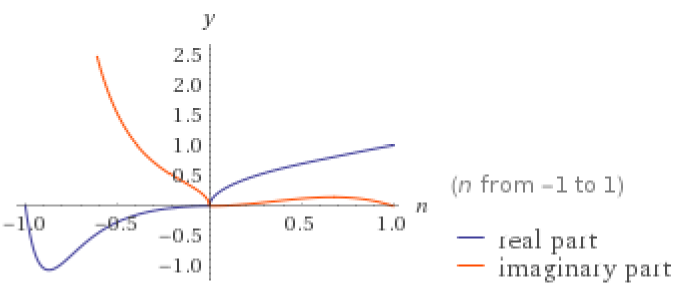
Input:

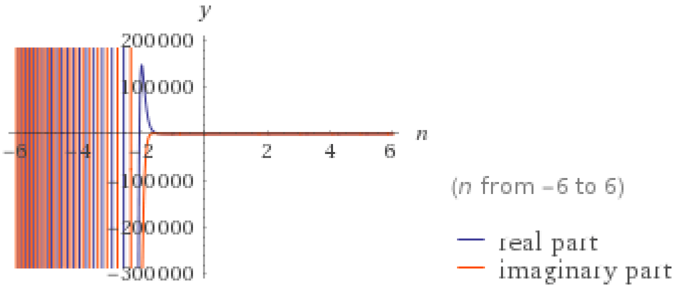
$$\frac{1}{\frac{1}{n}\, n^{1/2+n\, n\, \sqrt{-1}}}$$

Result:

$$n^{1/2-i\, n^2}$$

Plots:





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Roots:

- Step-by-step solution

(no roots exist)

Series expansion at n = 0:

$$\sqrt{n} - i\, n^{5/2} \log(n) + O\left(n^{7/2}\right)$$

(generalized Puiseux series)

log(x) is the natural logarithm
Big-O notation »

Derivative:

- Step-by-step solution

$$\frac{d}{dn}\left(\frac{1}{\frac{n^{1/2+n\,n\,\sqrt{-1}}}{n}}\right) = \frac{1}{2}\, n^{-1/2-i\,n^2}\left(-2\,i\,n^2 - 4\,i\,n^2 \log(n) + 1\right)$$

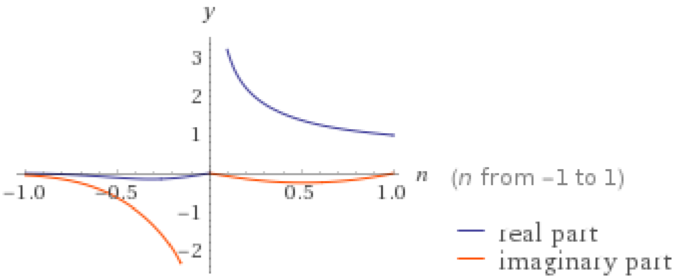
Input:

$$\frac{1}{n}\, n^{1/2+n\,n\,\sqrt{-1}}$$

Result:

$$n^{-1/2+i\,n^2}$$

Plots:



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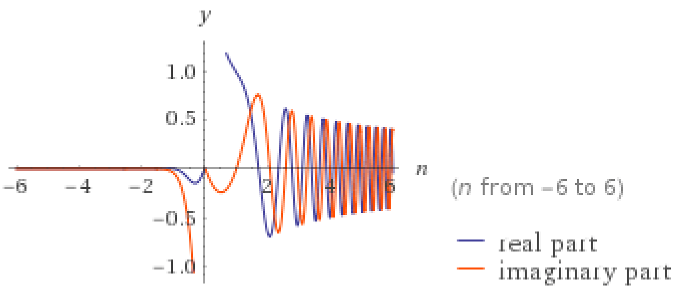


Roots:

- Step-by-step solution

(no roots exist)

Series expansion at n = 0:

$$\frac{1}{\sqrt{n}} + i\, n^{3/2} \log(n) + O\left(n^{7/2}\right)$$

(generalized Puiseux series)

$\log(x)$ is the natural logarithm
Big-O notation »

Derivative:

- Step-by-step solution

$$\frac{d}{dn}\left(\frac{n^{1/2+n\, n \sqrt{-1}}}{n}\right) = \frac{1}{2}\, i\, n^{-3/2+i\, n^2} \left(2\, n^2 + 4\, n^2 \log(n) + i\right)$$

Series representations:

- More

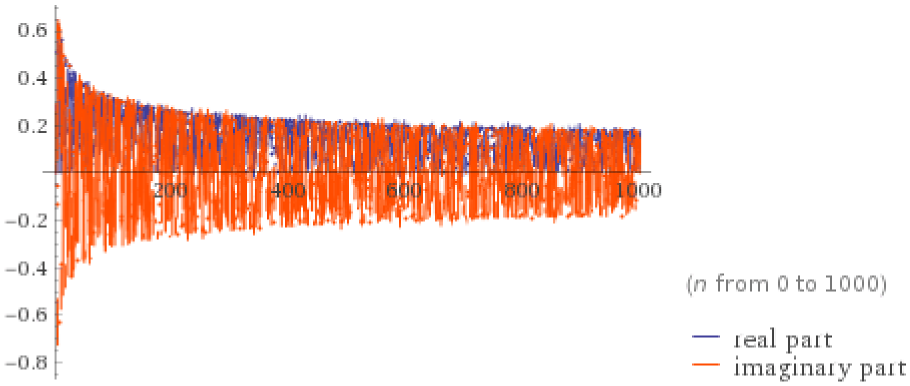
$$\frac{n^{1/2+n\, n \sqrt{-1}}}{n} = n^{-1/2+n^2 \sqrt{-2}\, \sum_{k=0}^{\infty} (-2)^{-k} \binom{1/2}{k}}$$

$$\frac{n^{1/2+n\, n \sqrt{-1}}}{n} = n^{-1/2+n^2 \sqrt{-2}\, \sum_{k=0}^{\infty} \left(2^{-k} \left(-\frac{1}{2}\right)_k\right)/k!}$$

$$\frac{n^{1/2+n\, n \sqrt{-1}}}{n} = n^{1/2 \left(-1+\left(n^2 \sum_{j=0}^{\infty} \operatorname{Res}_{s=-\frac{1}{2}+j} (-2)^{-s}\, \Gamma\left(-\frac{1}{2}-s\right) \Gamma(s)\right)\Big/\sqrt{\pi}\right)}$$

plot	$\sqrt{\frac{1}{n}\, n^{1/2+n\, n \sqrt{-1}}}$	$n = 1$ to 1000

Plot:



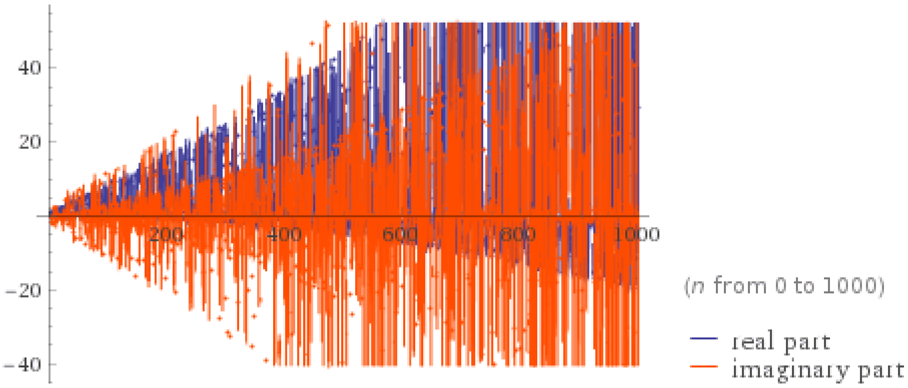
- Enlarge
- Customize

Arc length integral:

$$\int_1^{1000} \sqrt{1 - \frac{1}{16}\, n^{-5/2+i n^2} \left(i + 2 n^2 + 4 n^2 \log(n)\right)^2}\, dn$$

plot	$\sin\left(\frac{\sqrt{\frac{1}{n}\, n^{1/2+n\, n \sqrt{-1}}}}{\frac{1}{n}\, n^{1/2+n\, n \sqrt{-1}}}\right)$	$n = 1$ to 1000

Plot:



- Enlarge
- Customize

Arc length integral:

$$\int_1^{1000} \sqrt{1 - \frac{1}{16}\, n^{-3/2-i n^2} \cos^2\left(\frac{1}{\sqrt{n^{-1/2+i n^2}}}\right) \left(i + 2 n^2 + 4 n^2 \log(n)\right)^2}\, dn$$

$\log(x)$ is the natural logarithm

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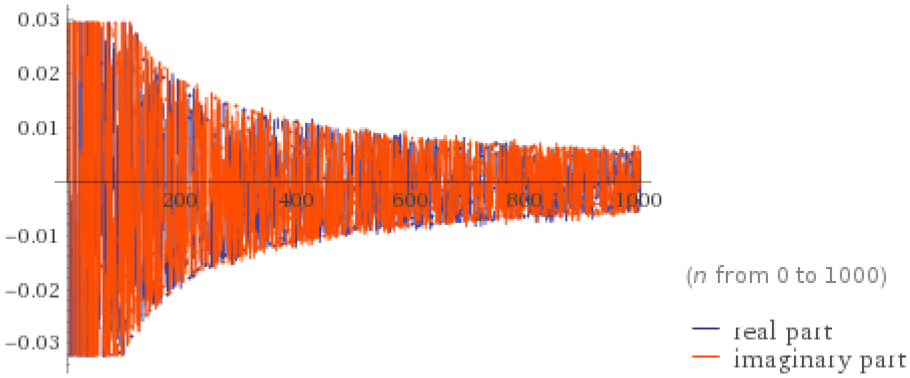
plot	$\sin\left(\sqrt{\frac{1}{n}\, n^{1/2+n\, n \sqrt{-1}}}\left(\frac{1}{n}\, n^{1/2+n\, n \sqrt{-1}}\right)\right)$	$n = 1$ to 1000

Plot:



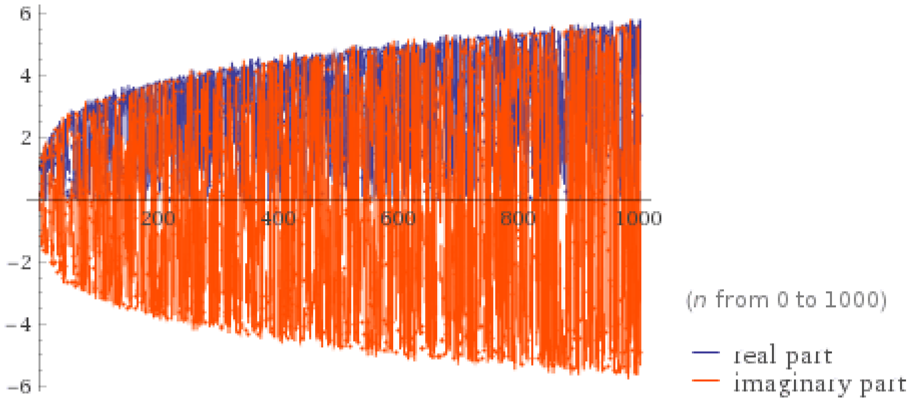
- Enlarge
- Customize

Arc length integral:

$$\int_1^{1000} \sqrt{1 - \frac{9}{16}\, n^{-7/2+3\, i\, n^2} \cos^2\left(\left(n^{-1/2+i\, n^2}\right)^{3/2}\right) \left(i + 2\, n^2 + 4\, n^2 \log(n)\right)^2}\, dn$$

plot	$\sqrt{\frac{1}{\frac{1}{n}\, n^{1/2+n\, n\, \sqrt{-1}}}}$	$n = 1$ to 1000

Plot:



- Enlarge
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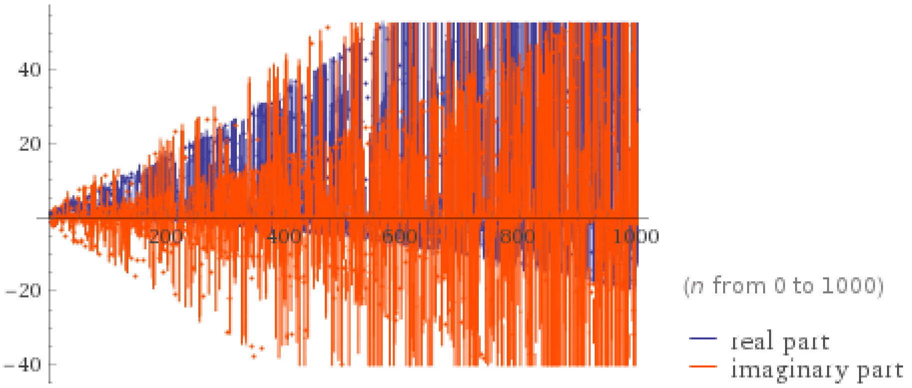
Arc length integral:

$$\int_1^{1000} \sqrt{1 - \frac{1}{16}\, n^{-3/2-i\, n^2} \left(i + 2\, n^2 + 4\, n^2 \log(n)\right)^2}\, dn$$

Input interpretation:

plot	$\sin\left(\sqrt{\frac{1}{\frac{1}{n}\, n^{1/2+n\, n\, \sqrt{-1}}}}\right)$	$n = 1$ to 1000

Plot:



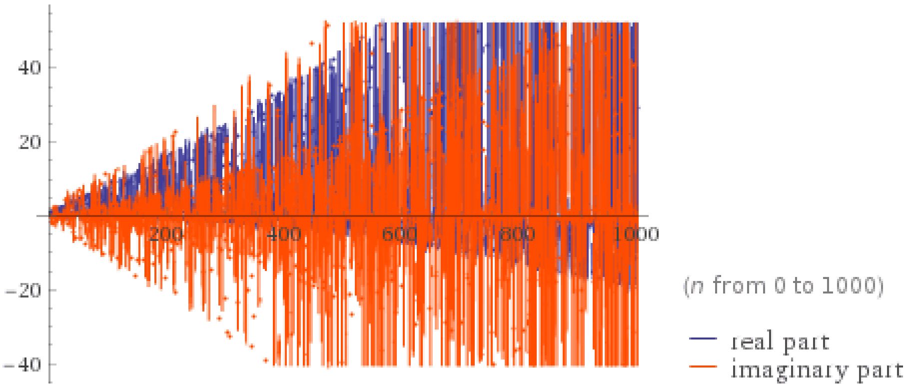
- Enlarge
- Customize

Arc length integral:

$$\int_1^{1000} \sqrt{1 - \frac{1}{16} n^{-3/2 - i n^2} \cos^2\left(\sqrt{n^{1/2 - i n^2}}\right)\left(i + 2 n^2 + 4 n^2 \log(n)\right)^2} \, dn$$

plot	$\sin\left(\frac{\sqrt{\frac{1}{n} n^{1/2 + n n \sqrt{-1}}}}{\frac{1}{n} n^{1/2 + n n \sqrt{-1}}}\right)$	$n = 1$ to 1000

Plot:



- Enlarge
- Customize

Arc length integral:

$$\int_1^{1000} \sqrt{1 - \frac{1}{16} n^{-3/2 - i n^2} \cos^2\left(\frac{1}{\sqrt{n^{-1/2 + i n^2}}}\right)\left(i + 2 n^2 + 4 n^2 \log(n)\right)^2} \, dn$$

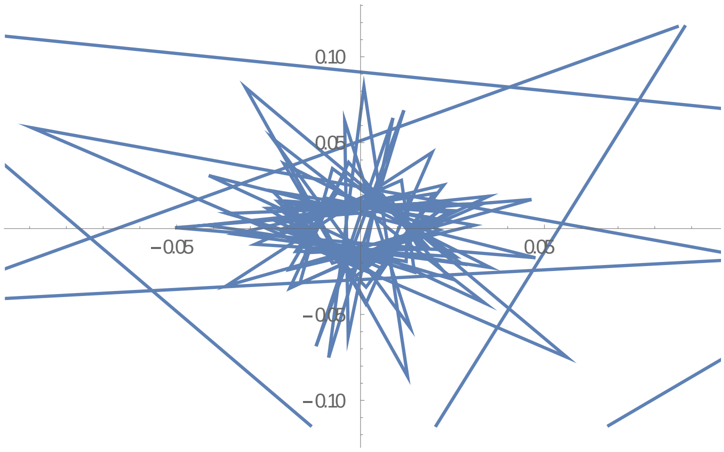
sq=Table[j,{j,1000}]

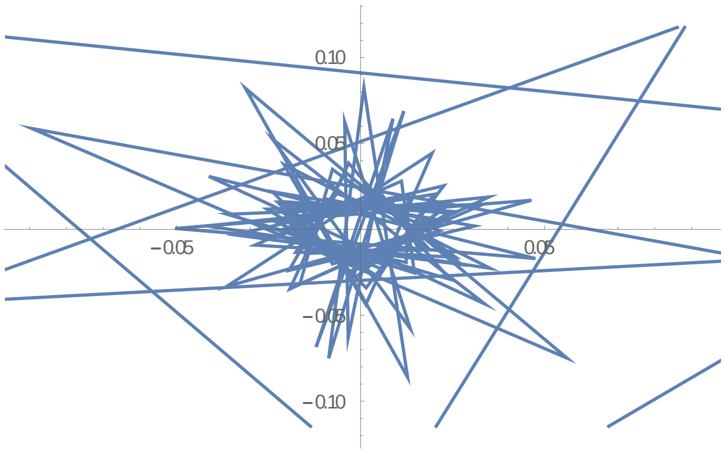
```
n=Select[sq,PrimeQ,(100)]
sq2=Table[k,{k,100}]
n3=sq2*-1
r=Table[k1,{k1,100}]
f=(((Pi+1)*r)*Sqrt[(-2*Pi*r)/((Pi+1)*r)])/((Sqrt[(2*Pi*r)^2+2*Pi*r/n]))
```

$\mathrm{bb} = \mathrm{Im}[f]$

$\mathrm{s1c} = ((1/2) + \mathrm{bb} * r * \mathrm{Sqrt}[-1])$

```
zz=-n3
zx=n
x1c1=(1/zz^s1c)^-1
x1c=ReIm[x1c1]
ListLinePlot[x1c/n]
ListLinePlot[Sin[x1c/n]]
```






```
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]))

$\mathrm{bb} = \mathrm{Im}[f]$

$\mathrm{s1c} = ((1/2) + \mathrm{bb} * r * \mathrm{Sqrt}[-1])$

zz=-n3

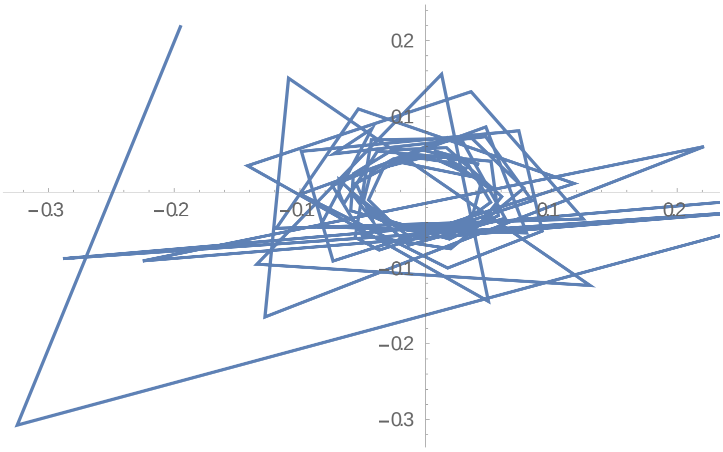
zx=n

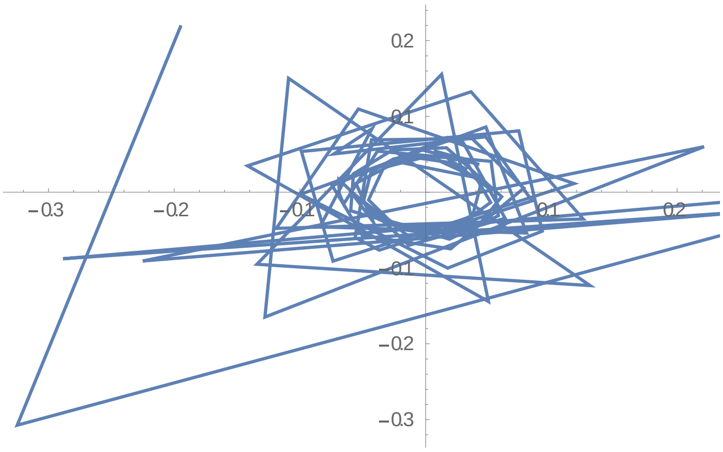
x1c1=(1/zx^s1c)^-1

x1c=ReIm[x1c1]

ListLinePlot[x1c/n]

ListLinePlot[Sin[x1c/n]]





When considering prime numbers for n in the inverse of the misiec´s zeta complex number the graph behavior spares the centers and repeats itself for the sin of the value corroborating for the supracited relations between the prime numbers and its radical correspondent that allows for one to verify by the behavior of the graph if it constitutes a graph of pure prime numbers from a graph of natural integers non primes.

If one think of aplications for these numbers, one can think of the formation of hurricanes, that need to have an emptyness in the center, so one might relate the formation of a hurricane to be intimately related to the arrangement with which the prime numbers relate to them selves in a series of primes applied to the form of the misiec´s zeta complex numbers derived from the study of the Riemann zeta function that after generalized gives inumerous aplications in terms of applied mathmatics and might even play a role in the understanding of turbulance and spiral geometries in nature and it has been shown in Riemann Hypothesis Solution by the same author in Fighsare.

If the signs of the product of the real and imaginary part are considered then there is a random distribution similar to prime numbers and non prime numbers that confers a similarity of random distribution for the misiec´s zeta complex numbers:

1/2*2^(1/2+2*2*i)= -0.659509357 + 0.255043934 i -

1/3*3^(1/2+3*3*i)= -0.516633808 - 0.257726292 i +

1/5*5^(1/2+5*5*i) = -0.367895998 + 0.254268626 i -

1/7*7^(1/2+7*7*i) = 0.170830655 + 0.337155795 i +

1/11*11^(1/2+11*11*i)= 0.131687722 + 0.271233174 i +

1/13*13^(1/2+13*13*i)= 0.276793842 - 0.0175569353 i -

1/17*17^(1/2+17*17*i)= -0.0975148897 + 0.222068403 i -

1/19*19^(1/2+19*19*i) = 0.107288598 + 0.202782484 i +

1/23*23^(1/2+23*23*i)= 0.207770771 - 0.0175945327 i -

1/29*29^(1/2+29*29*i)= -0.0459389178 - 0.179923246 i +

1/31*31^(1/2+31*31*i)= 0.0323983193 + 0.176659032 i +

1/37*37^(1/2+37*37*i)= 0.00831208182 - 0.164188722 i -

1/41*41^(1/2+41*41*i)= -0.153921385 - 0.0264282235 i +

1/43*43^(1/2+43*43*i)= 0.0788851864 - 0.130510311 i -

1/47*47^(1/2+47*47*i)= -0.112984719 - 0.0922553474 i +

1/53*53^(1/2+53*53*i)= 0.136619313 - 0.0142508907 i -

1/59*59^(1/2+59*59*i)= 0.127790832 + 0.0248727931 i +

1/61*61^(1/2+61*61*i)= -0.126655652 - 0.018756022 i +

1/67*67^(1/2+67*67*i) = 0.120271331 + 0.0214518086 i +

1/71*71^(1/2+71*71*i) = 0.112484747 - 0.0378376625 i -

1/73*73^(1/2+73*73*i) = 0.0929637129 - 0.0711082148 i -

1/79*79^(1/2+79*79*i) = 0.0860649426 + 0.0724641532 i +

1/83*83^(1/2+83*83*i) = 0.0880502189 - 0.0655389329 i -

1/89*89^(1/2+89*89*i)= -0.0495278912 - 0.0937173572 i +

1/97*97^(1/2+97*97*i)= -0.0893641659 - 0.0482008735 i +

-1.83947999 + 1.27134313 i

1/1*1^(1/2+1*1*i)=1
1/2*2^(1/2+2*2*i)= -0.659509357 + 0.255043934 i -

1/3*3^(1/2+3*3*i)= -0.516633808 - 0.257726292 i +

1/4*4^(1/2+4*4*i)= -0.491043506 - 0.094213988 i +
1/5*5^(1/2+5*5*i) = -0.367895998 + 0.254268626 i -

1/6*6^(1/2+6*6*i)= -0.0410377027 + 0.406180469 i -
1/7*7^(1/2+7*7*i) = 0.170830655 + 0.337155795 i +

1/8*8^(1/2+8*8*i)= 0.148487223 + 0.320860631 i +

1/9*9^(1/2+9*9*i)= -0.152507162 + 0.296399522 i -
1/10*10^(1/2+10*10*i)= -0.191011702 - 0.252020891 i +
1/11*11^(1/2+11*11*i)= 0.131687722 + 0.271233174 i +

1/12*12^(1/2+12*12*i)= 0.274470831 - 0.0894376674 i -
1/13*13^(1/2+13*13*i)= 0.276793842 - 0.0175569353 i -

1/14*14^(1/2+14*14*i)= -0.119426631 + 0.239093813 i -
1/15*15^(1/2+15*15*i)= 0.254995756 - 0.0405441884 i -
1/16*16^(1/2+16*16*i)= 0.244124722 - 0.0538806115 i -