The curse of Riemann.  
Proof of the Riemann hypothesis

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Abstract
I treat Riemann hypothesis as a series and proved it.  
Up to now, I have tried to expand this equation and prove Riemann hypothesis with the equation of cos, sin, but the proof was impossible.  
However, I realized that a simple formula before expansion can prove it.  
The real value is 0 only when the real part of s is 1/2. Non-trivial zeros must always have a real value of zero.

key words
Riemann hypothesis, non-trivial zeros, critical line, 1/2

1 introduction
This is clear from $\zeta(s) = \frac{2^s}{2^{s-2}} \omega(s)$, that $\zeta(s) = \zeta(1 - s)$ and $\omega(s) = \omega(1 - s)$ have the same significance.  
Both equations are valid only for non-trivial zero values.  
In the case of $\omega(s)$, the proof of Riemann hypothesis is completed if it is proved that the value of the non-trivial zeros is taken only when the real part is 1/2.  
Define $0 < \Re(s) < 1$

$$\omega(s) = \frac{2^s - 2}{2^s} \zeta(s) = \zeta(s) - \frac{2}{2^s} \zeta(s)$$  (1)

$$\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.25+i4.157}} = -0.7106998802... - 0.0393256547631...i$$

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\[
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.4+14.1347}} = -0.20168483321... - 0.000398657711...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.4+14.1347}} = -0.01791363... - 0.004282038...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.4+14.1347}} = 0.0009413486... - 0.0049571556...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.4+14.1347}} = 0.0009413486... + 0.0049571556...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.4+14.1347}} = 0.17375337127... - 0.01283865007...i \\
\] 

\[
\{ \frac{\pi^2}{2n} \}, \{ s = 1/2 + i14.1347 \} = 0.411258... + 0.0913854...i \\
\{ \frac{\pi^2}{2n} \}, \{ s = 1/2 - i14.1347 \} = 0.411258... - 0.0913854...i \\
\{ \frac{\pi^2}{2n} \}, \{ s = 1/2 + i14.1347 \} = 2.31715... - 0.514893...i \\
\{ \frac{\pi^2}{2n} \}, \{ s = 1/2 - i14.1347 \} = 2.31715... + 0.514893...i \\
\] 

\[
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.6+14.1347}} = -0.23505068... - 0.12926123561...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.6+14.1347}} = -0.00196549... - 0.00466251514...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.6+14.1347}} = -0.00196549... + 0.00466251514...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.6+14.1347}} = 0.18930834... + 0.08779032048...i \\
\] 

\[
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.6+25.01086}} = -0.195508869... + 0.152868555478...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.6+25.01086}} = -0.195508869... - 0.152868555478...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.6+25.01086}} = 0.002605178... - 0.0042652041...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.6+25.01086}} = 0.002605178... + 0.0042652041...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.6+25.01086}} = 0.1667076253... - 0.124423449...i \\
\sum_{n=1}^{10000} \frac{(-1)^{n-1}}{n^{0.6+25.01086}} = 0.1667076253... + 0.124423449...i \\
\] 

\[
\{ \frac{\pi^2}{2n} \zeta(s) \}, \{ s = 0.4 + i25.01086 \} = -0.202044... + 0.163593...i \\
\{ \frac{\pi^2}{2n} \zeta(s) \}, \{ s = 1/2 + i25.01086 \} = 3.42656... \times 10^{-6} + 4.41859... \times 10^{-6} i \\
\{ \frac{\pi^2}{2n} \zeta(s) \}, \{ s = 1/2 - i25.01086 \} = 3.42656... \times 10^{-6} - 4.41859... \times 10^{-6} i \\
\{ \frac{\pi^2}{2n} \zeta(s) \}, \{ s = 0.6 + i25.01086 \} = 0.165672... - 0.12272...i \\
\{ \frac{\pi^2}{2n} \zeta(s) \}, \{ s = 0.6 - i25.01086 \} = 0.165672... + 0.12272...i \\
\]

In \( \omega(s) \), even if the plus or minus of the imaginary value of \( s \) is switched, the real value shows the same value, but the plus or minus of the imaginary value is different.
If \( s \) is a non-trivial zeros, both real and imaginary values converge to zero.

\section{Discussion}

from Eq.(1)

\[
\zeta(s) = \omega(s) + \frac{2}{\pi^2} \zeta(s) 
\] (2)
and
\[ \zeta(1-s) = \omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s) \]  
(3)

from \( \zeta(s) = \zeta(1-s) \)
\[ [\omega(s) + \frac{2}{2^s} \zeta(s)] - [\omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s)] = 0 \]  
(4)

\[ [\omega(s) - \omega(1-s)] + [\frac{2}{2^s} \zeta(s) - \frac{2}{2^{1-s}} \zeta(1-s)] = 0 \]  
(5)

\[ [\omega(s) - \omega(1-s)] + [2^{1-s} \zeta(s) - 2^s \zeta(1-s)] = 0 \]  
(6)

As can be seen from Eq.(6), it becomes 0 when \( s=1/2 \) is inserted.
That is, it is not 0 except for \( s=1/2 \).
This can be said to be the end of proof.

from Eq.(4)
\[
\begin{align*}
\{[\omega(s) + \frac{2}{2^s} \zeta(s)] - [\omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s)], & \{s = 0.4 + i16.1347}\} = -0.493359... + 3.65957...i \\
\{[\omega(s) + \frac{2}{2^s} \zeta(s)] - [\omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s)], & \{s = 0.4 - i16.1347}\} = -0.493359... - 3.65957...i \\
\{[\omega(s) + \frac{2}{2^s} \zeta(s)] - [\omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s)], & \{s = 1/2 + i14.1347\}\} = 0.000055107...i \\
\{[\omega(s) + \frac{2}{2^s} \zeta(s)] - [\omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s)], & \{s = 1/2 + i16.1347\}\} = 3.64713...i \\
\{[\omega(s) + \frac{2}{2^s} \zeta(s)] - [\omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s)], & \{s = 0.6 + i16.1347\}\} = 0.493359 + 3.65957...i \\
\{[\omega(s) + \frac{2}{2^s} \zeta(s)] - [\omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s)], & \{s = 0.6 - i16.1347\}\} = 0.493359... - 3.65957...i \\
\{[\omega(s) + \frac{2}{2^s} \zeta(s)] - [\omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s)], & \{s = 1/2 + i17.1347\}\} = 5.39992...i \\
\{[\omega(s) + \frac{2}{2^s} \zeta(s)] - [\omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s)], & \{s = 1/2 + i21.022\}\} = 0.000077614...i \\
\{[\omega(s) + \frac{2}{2^s} \zeta(s)] - [\omega(1-s) + \frac{2}{2^{1-s}} \zeta(1-s)], & \{s = 1/2 + i22.022\}\} = -2.61712...i
\end{align*}
\]

As in these examples, when the real part is 1/2, the real value is 0, but the imaginary value remains.
When the real value of \( s \) is 1/2, the real value is completely 0, but even if the imaginary value is \( i14.1347 \), it is not removed because it contains an error.

\[ \zeta(0.4 + i16) = 0.921882... + 1.32365...i \]
\[ \zeta(0.4 - i16) = 0.921882... - 1.32365...i \]
\[ \zeta(1/2 + i14.1347) = 3.13536... \times 10^{-6} - 0.0000196934...i \]
\[ \zeta(1/2 - i14.1347) = 3.13536... \times 10^{-6} + 0.0000196934...i \]
\[ \zeta(1/2 + i15) = 0.147109907... + 0.7047522416...i \]
\[ \zeta(1/2 - i15) = 0.147109907... - 0.7047522416...i \]
\[ \zeta(1/2 + i16) = 0.938545408... + 1.216587815999...i \]
\[ \zeta(1/2 - i16) = 0.938545408... - 1.216587815999...i \]
\[ \zeta(0.6 + i16) = 0.952627... + 1.11841...i \]
\[ \zeta(0.6 - i16) = 0.952627... - 1.11841...i \]

In \( \zeta(s) \) and \( \omega(s) \), even if the imaginary value of \( s \) is changed, the real value shows the same value, but the imaginary value is different between plus and minus.
If the real part of s is 0.4, the real part of s is 0.6 from $\zeta(s) = \zeta(1 - s)$.
Then, the real part value and the imaginary part value also change.
Even if $\zeta(s) = \zeta(1 - s)$ is used in addition to 1/2, the value of the real part is only 1/2.

$s = 1/2$ is the minimum requirement for $\zeta(s) = \zeta(1 - s)$ and $\omega(s) = \omega(1 - s)$.
That is, the minimum condition for the non-trivial zeros is that the real value is 1/2.

The real value is 0 only when the real part of s is 1/2. Non-trivial zeros must always have a real value of zero.

$$\Re(s) = \frac{1}{2} \quad (7)$$

Proof complete.

3 Postscript

These calculations were performed with WolframAlpha.

References


I was finally crazy because of the curse of Riemann.

Please raise the prize money to my little son and daughter who are still young.