Original article

Is this Euler's mistake? Or is it just a misprint circling?

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[Abstract]

Euler's formula is generally expressed as follows.
\zeta(1-s)={\frac{2}{(2*pi)^s}\Gamma(s)\cos(\frac{pi*s}{2})\zeta(s))}

$$\zeta(1-s)=\frac{2}{(2\pi)^s}\Gamma(s)\cos(\frac{s\pi}{2})\zeta(s)$$

However, I substitute (-2,-4,-6) in this and do not become zero.
There is not it and approaches only for a zero when I surely substitute Non trivial zero point (0.5+14.1347i, 0.5+21.0220i) for this formula.
It is either whether the formula of the Euler is wrong whether a misprint is sold as for this.　I am convinced misprints are circulating.
I am convinced that it is sold It is make a mistake with cos, and to have printed sin.
The one that is right is as follows.
\zeta(1-s)={\frac{2}{(2*pi)^s}\Gamma(s)\sin(\frac{pi*s}{2})\zeta(s))}

$$\zeta(1-s) = \frac{2}{(2\pi)^s}\Gamma(s)\sin(\frac{s\pi}{2})\zeta(s)$$

[Discussion]

I used wolframalpha.com.

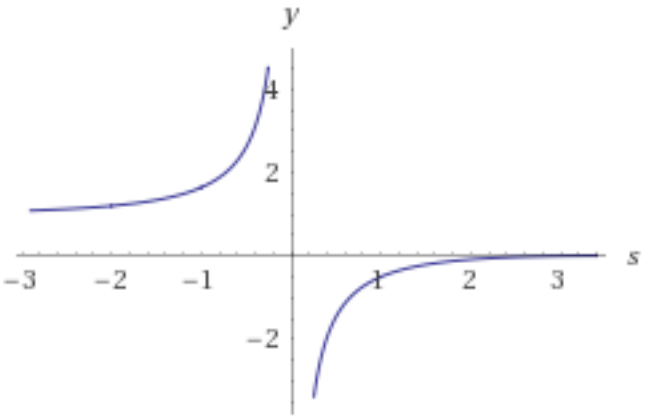
{\frac{2}{(2*pi)^s}\Gamma(s)\cos(\frac{pi*s}{2})\zeta(s))}
Input:

$$\frac{2}{(2\,\pi)^s}\,\Gamma(s)\cos\left(\frac{\pi\,s}{2}\right)\zeta(s)$$

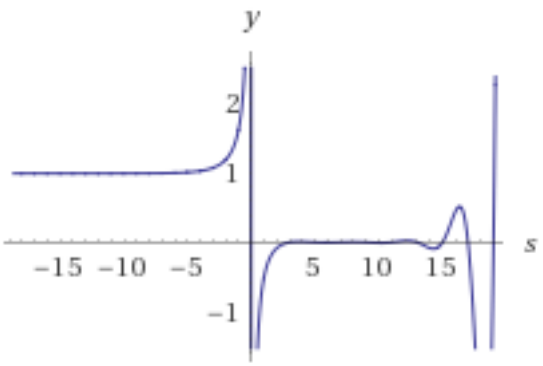
Exact result:

$$2^{1-s}\,\pi^{-s}\,\zeta(s)\cos\left(\frac{\pi\,s}{2}\right)\Gamma(s)$$

Plots:



(*s* from −2.9 to 3.4)



(*s* from −18.6 to 19.1)

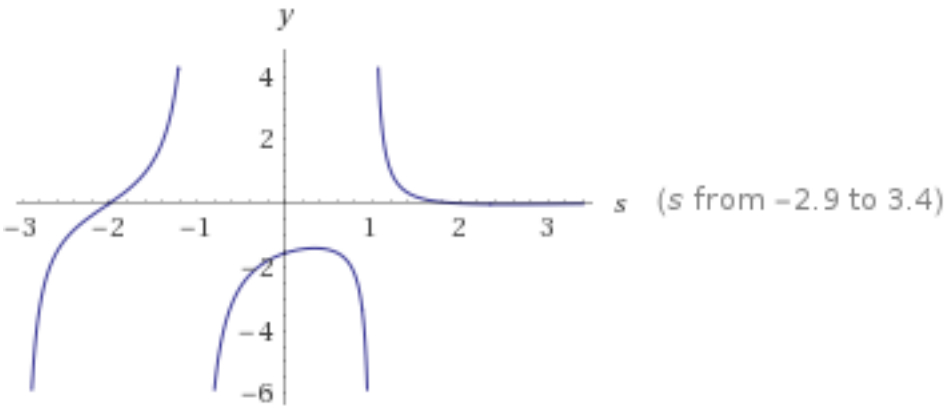
when
{\frac{2}{(2*pi)^s}\Gamma(s)\sin(\frac{pi*s}{2})\zeta(s)}
Input:

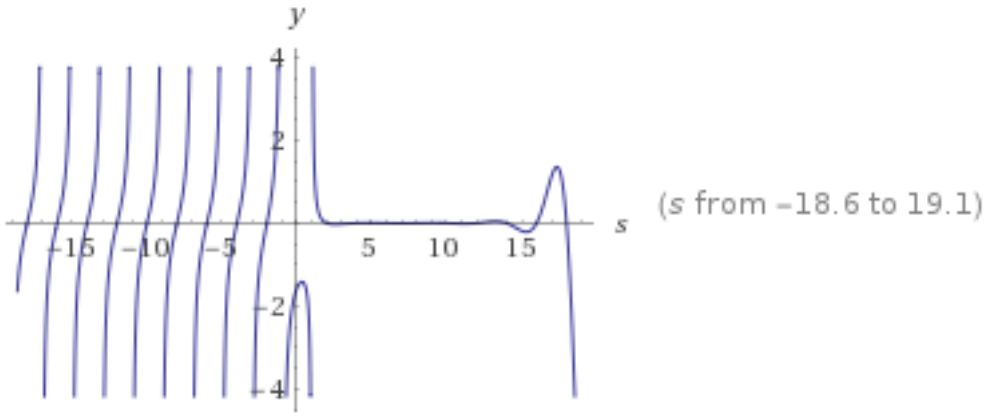
$$\frac{2}{(2\,\pi)^s}\,\Gamma(s)\,\sin\left(\frac{\pi\,s}{2}\right)\zeta(s)$$

Exact result:

$$2^{1-s}\,\pi^{-s}\,\zeta(s)\,\sin\left(\frac{\pi\,s}{2}\right)\Gamma(s)$$

Plots:





I am convinced misprints are circulating.

[References]

1) https://en.wikipedia.org/wiki/Riemann_hypothesis

☃～☃～☃～☃～☃～

I am a psychiatrist now and also a doctor of brain surgery before.

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I would like to receive an email. I will not answer the phone.

Currently 57 years old
Born on November 26, 1961
（I am very poor of English. Almost all document are google-translation.）
When converted to English by Google translation, it becomes cryptic to me.
But, I read letter by google translation.
In my case, if you translate it into English by google translation, I do not know what is written in my paper. For me, foreign languages such as English (actually not good at Japanese) is a demon.
As soon as it is translated into English, it turns into a cipher for me.