# Disproof of the Riemann hypothesis

subtitle : infinite world

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**Abstract**

In my previous paper "Consideration of the Riemann hypothesis" c=0.5 and x is non-trivial zero value, and it was described that it converges to almost 0, but a serious proof in mathematical expression could not be obtained.
It is impossible to make c = 0.5 exactly like this. c can only be 0.5 and its edge. It is considered that "when the imaginary value increases to infinity, the denominator of the number becomes infinity and shifts from 0.5 to 0".

## introduction

$$\zeta(s) = \sum_{n=1}^{\infty} \frac{1}{n^s} \qquad s = a + ib \tag{1}$$

a=0.5 b is non-tribial zero value.

$$\zeta(s) = 0 \tag{2}$$

$$\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{n^{2c}} = \sum_{n=1}^{\infty} [\frac{1}{(2n-1)^{2c}} - \frac{1}{(2n)^{2c}}] = \sum_{n=1}^{\infty} \frac{1}{(2n-1)^{2c}} - \sum_{n=1}^{\infty} \frac{1}{(2n)^{2c}} \tag{3}$$

$$0 \leq c \leq 1 \tag{4}$$

$$\frac{1}{(2n-1)^{2c}} = \frac{(2n-1)^{ix}}{(2n-1)^c} = \frac{\cos(x\ln(2n-1)) + i\sin(x\ln(2n-1))}{(2n-1)^c} \tag{5}$$

$$\frac{1}{(2n)^{2c}} = \frac{(2n)^{ix}}{(2n)^c} = \frac{\cos(x\ln(2n)) + i\sin(x\ln(2n))}{(2n)^c} \tag{6}$$

$$\sum_{n=1}^{\infty}\left[\frac{\cos(x\ln(2n-1))+i\sin(x\ln(2n-1))}{(2n-1)^c}-\frac{\cos(x\ln(2n))+i\sin(x\ln(2n))}{(2n)^c}\right] \tag{7}$$

Although x is treated as a real number, x is a non-trivial zero values.

From equation (7), it is estimated that cos is a real value and sin is an imaginary value. When this real value and the imaginary value reach zero simultaneously, they become non-trivial zero values.

c is complex number but treated as a real number.

$$\sum_{n=1}^{\infty}\left[\frac{\cos(x\ln(2n-1))}{(2n-1)^c}-\frac{\cos(x\ln(2n))}{(2n)^c}\right] \tag{8}$$

$$\sum_{n=1}^{\infty}\left[\frac{\sin(x\ln(2n-1))}{(2n-1)^c}-\frac{\sin(x\ln(2n))}{(2n)^c}\right] \tag{9}$$

And, from [5](it is my previous paper "Consideration of the Riemann hypothesis")
In the paper, equation (8) is calculated as x= non-trivial zero value.
(What is not written in the paper is also added.)

If c shifts to 0.00001, it converges around -1.69.
If c shifts to 0.1, it converge around -1.04.
If c shifts to 0.2, it converge around -0.462.
If c shifts to 0.3, it converge around -0.745.
If c shifts to 0.4, it converge around -0.200.
If c shifts to 0.49, it converge around -0.02.
If c shifts to 0.499, it converge around -0.009.
If c shifts to 0.4999, it converge around -0.0002.
If c shifts to 0.49999, it converge around -0.00003.
If c shifts to 0.499999, it converge around -0.000016.
If c shifts to 0.4999999, it converge around -0.0000077.
If c shifts to 0.5000001, it converge around 0.0000089.
If c shifts to 0.500001, it converge around 0.000017.
If c shifts to 0.50001, it converge around 0.00003.
If c shifts to 0.5001, it converge around 0.0002.
If c shifts to 0.501, it converge around 0.009.
If c shifts to 0.51, it converge around 0.02.
If c shifts to 0.6, it converge around 0.199.

If c shifts to 0.7, it converge around 0.349.
If c shifts to 0.8, it converge around 0.477.
If c shifts to 0.9, it converge around 0.583.
If c shifts to 0.99999, it converge around 0.67.

From the above, it can be seen that deviates from 0.5, the converging value deviates from zero.

## Discussion

If c=0.5 and x is non-trivial zeros, the equations (10) to (15) must hold.

$$\sum_{n=1}^{\infty}\frac{(-1)^{n-1}}{n^{2c}}=\sum_{n=1}^{\infty}[\frac{1}{(2n-1)^{2c}}-\frac{1}{(2n)^{2c}}]=\sum_{n=1}^{\infty}\frac{1}{(2n-1)^{2c}}-\sum_{n=1}^{\infty}\frac{1}{(2n)^{2c}}=0 \tag{10}$$

$$\frac{1}{(2n-1)^{2c}}=\frac{(2n-1)^{ix}}{(2n-1)^{c}}=\frac{\cos(x\ln(2n-1))+i\sin(x\ln(2n-1))}{(2n-1)^{c}}=0 \tag{11}$$

$$\frac{1}{(2n)^{2c}}=\frac{(2n)^{ix}}{(2n)^{c}}=\frac{\cos(x\ln(2n))+i\sin(x\ln(2n))}{(2n)^{c}}=0 \tag{12}$$

$$\sum_{n=1}^{\infty}[\frac{\cos(x\ln(2n-1))+i\sin(x\ln(2n-1))}{(2n-1)^{c}}-\frac{\cos(x\ln(2n))+i\sin(x\ln(2n))}{(2n)^{c}}]=0 \tag{13}$$

$$\sum_{n=1}^{\infty}[\frac{\cos(x\ln(2n-1))}{(2n-1)^{c}}-\frac{\cos(x\ln(2n))}{(2n)^{c}}]=0 \tag{14}$$

$$\sum_{n=1}^{\infty}[\frac{\sin(x\ln(2n-1))}{(2n-1)^{c}}-\frac{\sin(x\ln(2n))}{(2n)^{c}}]=0 \tag{15}$$

**Conclusion**

In infinity, the denominator is considered to be infinitely large and 0.5 shifts toward 0. Therefore, we can not but compromise if we do not show c= 0.5. I can not but say that Riemann hypothesis is wrong.

# References


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**key words**

Riemann hypothesis, infinite series, negative and positive infinity


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