

# Riemann Zeta Function & Relationship to Prime Numbers

$$\zeta(s)=1/\left(\left(\frac{1}{s}\right)/\log(s)\right)$$

[Ricardo.gil@sbcglobal.net](mailto:Ricardo.gil@sbcglobal.net)

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## Abstract

In the equation below, it is a form of Riemann Zeta Function and it shows an approximate relationship between the Riemann Zeta Function and Prime Numbers.

I.

### Riemann Zeta Function Modified Equation

$$\zeta(s)=1/\left(\left(\frac{1}{2}\right)/\log(2)\right)+1/\left(\left(\frac{1}{3}\right)/\log(3)\right)+1/\left(\left(\frac{1}{4}\right)/\log(4)\right)+1/\left(\left(\frac{1}{5}\right)/\log(5)\right)$$

II.

### Relationship between (S) & Prime Number

S=2

$$s=1/\left(\left(\frac{1}{S}\right)/\mathit{math.log}(S)\right)$$

print (s) 1.3862943611198906 Actual 2

S=3

$$s=1/\left(\left(\frac{1}{S}\right)/\mathit{math.log}(S)\right)$$

print (s) 3.2958368660043296 Actual 3

S=4

$$s=1/\left(\left(\frac{1}{S}\right)/\mathit{math.log}(S)\right)$$

print (s) 5.545177444479562 Actual 5

S=5

$$s=1/\left(\left(\frac{1}{S}\right)/\mathit{math.log}(S)\right)$$

print (s) 8.0471895621705 Actual 7

S=6

$$s=1/\left(\left(\frac{1}{S}\right)/\mathit{math.log}(S)\right)$$

print (s) 10.750556815368329 Actual 11

S=7

$$s=1/\left(\left(\frac{1}{S}\right)/\mathit{math.log}(S)\right)$$

print (s) 13.621371043387194 Actual 13

S=8

$$s=1/\left(\left(\frac{1}{S}\right)/\mathit{math.log}(S)\right)$$

print (s) 16.635532333438686 Actual 17

S=9

$$s=1/\left(\left(\frac{1}{S}\right)/\mathit{math.log}(S)\right)$$

print (s) 19.775021196025975 Actual 19

S=10

$$s=1/\left(\left(\frac{1}{S}\right)/\mathit{math.log}(S)\right)$$

print (s) 23.025850929940457 Actual 23

S=11  
s=1/(((1/(S))/math.log(S)))  
print (s) 26.37684800078208 Actual 29

S=12  
s=1/(((1/(S))/math.log(S)))  
print (s) 29.81887979745601 Actual 31

S=13  
s=1/(((1/(S))/math.log(S)))  
print (s) 33.34434164699997 Actual 37

S=14  
s=1/(((1/(S))/math.log(S)))  
print (s) 36.94680261461362 Actual 39

S=15  
s=1/(((1/(S))/math.log(S)))  
print (s) 40.62075301653315 Actual 41

S=16  
s=1/((1/(S))/math.log(S))  
print (s) 44.3614195558365 Actual 43

S=17  
s=1/(1/(S))/math.log(S))  
print (s) 48.16462684895568 Actual 47

S=18  
s=1/(1/(S))/math.log(S))  
print (s) 52.02669164213096 Actual 51

S=19  
s=1/(((1/(S))/math.log(S)))  
print (s) 55.94434060416236 Actual 53

S=20  
s=1/(((1/(S))/math.log(S)))  
print (s) 59.91464547107982 Actual 57