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THE RIEMANN ZETA FUNCTION

$$\zeta(s) = \sum_{n=1}^{\infty} \frac{1}{n^s} = \frac{1}{1^s} + \frac{1}{2^s} + \frac{1}{3^s} + \frac{1}{4^s} + \dots$$

1. What did Riemann hypothesize in his 1859 paper?

All "nontrivial zeros" of the Riemann zeta function have real part exactly equal to $\frac{1}{2}$.

2. How do the zeta zeros relate to the prime numbers?

If you know the values of the nontrivial zeros, then you can create a sequence of functions that converges to the prime counting function!

$$S = \textcircled{a} + \textcircled{b}i$$

— real part
— imaginary part

$$i^2 = -1$$



