

MATH 242 — 15 April 2026

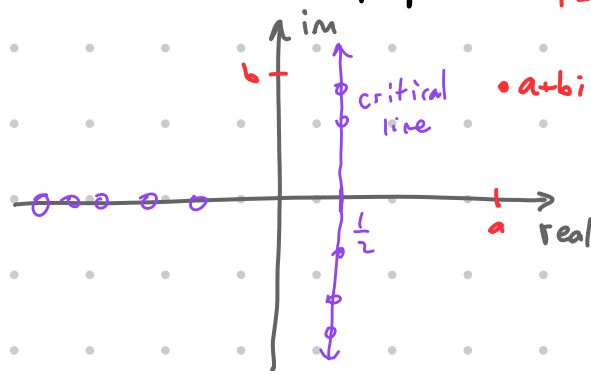
THE RIEMANN ZETA FUNCTION

$$\zeta(s) = \sum_{n=1}^{\infty} \frac{1}{n^s} = \frac{1}{1^s} + \frac{1}{2^s} + \frac{1}{3^s} + \frac{1}{4^s} + \frac{1}{5^s} + \dots$$

GROUP CHAT:

1. What did Riemann hypothesize in his 1859 paper? $i^2 = -1$

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



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

We can construct functions ("waves") that when added, converge to the prime counting function.

