

## Prime Number Theorem

$$\lim_{x \rightarrow \infty} \frac{\pi(x)}{\text{li}(x)} = 1$$

$$\lim_{x \rightarrow \infty} \frac{\pi(x)}{\frac{x}{\ln(x)}} = 1$$

Zeta function:

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

$$\zeta(2) = 1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \dots = \frac{\pi^2}{6}$$

$$\zeta(3) = 1.2020\dots = \text{closed form?}$$

$$\zeta(4) = \frac{\pi^4}{90}$$

Domain Coloring:



