

DEFINITION: The prime counting function $\pi(x)$ gives the number of primes less than or equal to x . not 3.14...

$$\pi: \mathbb{R} \rightarrow \mathbb{Z}^{\geq 0}$$

function from the real numbers to non-negative integers

examples: $\pi(10) = 4$

$$\pi(17) = 7$$

$$\pi(18.2) = 7$$

primes: 2, 3, 5, 7

11, 13, 17

primes: [2, 3, 5, 7, 11, 13, 17, 19, 23, 29, ...]

prime counts: $\pi(x)$ [0, 0, 1, 2, 2, 3, 3, 4, ...,]

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 $\pi(0)$ $\pi(1)$ $\pi(2)$ $\pi(3)$ $\pi(4)$ $\pi(5)$ $\pi(6)$ $\pi(7)$ $\pi(n_{\max})$