

# Named Constants

## Pi

$\pi \approx 3.14159265358979 \dots$

$$\pi = \int_{-\infty}^{+\infty} \frac{1}{x^2 + 1} dx$$

$$\frac{\pi^2}{6} = \sum_{k=1}^{\infty} \frac{1}{k^2}$$

## e

$e \approx 2.71828182845905 \dots$

## Golden Ratio

$\phi \approx 1.61803398874989 \dots$

$$\frac{1}{\phi} = 1 - \phi$$

$$\phi = \frac{1 + \sqrt{5}}{2}$$

$$\begin{aligned} \phi &= \lim_{n \rightarrow \infty} \frac{u_n}{u_{n-1}} \\ &= \lim \left\{ \frac{1}{1}, \frac{2}{1}, \frac{3}{2}, \frac{5}{3}, \frac{8}{5}, \frac{13}{8}, \dots \right\} \end{aligned}$$