

First Order System Frequency Response

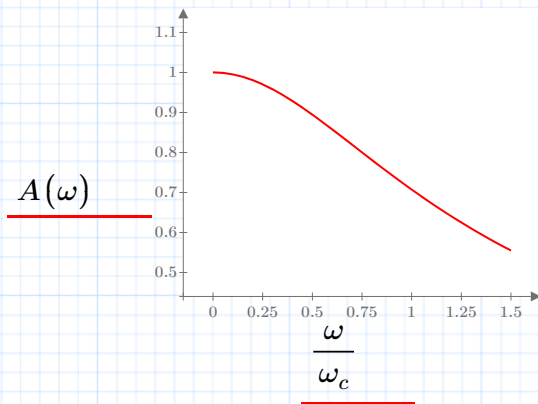
$$K := 1 \quad \tau := 1$$

$$\omega_c := \frac{1}{\tau} \quad \omega_c = 1$$

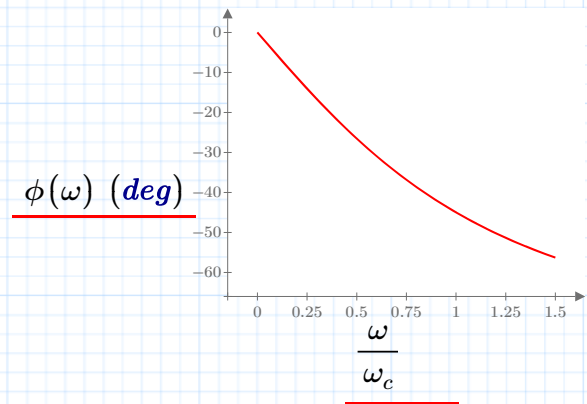
$$\omega := 0, 0.05 \cdot \omega_c \dots 1.5 \cdot \omega_c$$

$$A(\omega) := \frac{K}{\sqrt{1 + (\tau \cdot \omega)^2}}$$

$$\phi(\omega) := -\text{atan}(\tau \cdot \omega)$$



$$A(\omega_c) = 0.707$$



$$\phi(\omega_c) = -45 \text{ deg}$$