

# Trigonometria

## BASICS:

FORMULA FUNDAMENTAL

$$\text{Sen}^2 \alpha + \text{cos}^2 \alpha = 1$$

DA TRIGONOMETRIA

$$1 + \text{tg}^2 \alpha = \frac{1}{\text{cos}^2 \alpha}$$

$$\text{Tg} \alpha = \frac{\text{sen} \alpha}{\text{cos} \alpha}$$

## SPECIAL ANGLES:

Radianos	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$
graus	30	45	60
sen $\alpha$	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$
cos $\alpha$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$
Tg $\alpha$	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$

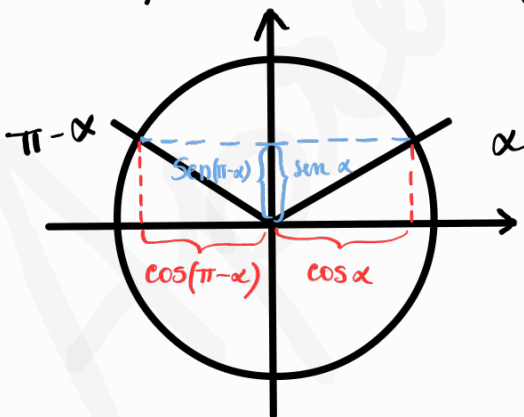
$$\text{sen} \alpha = \frac{\text{e. opo.}}{\text{hip}}$$

$$\text{cos} \alpha = \frac{\text{e. adj.}}{\text{hip}}$$

$$\text{Tg} \alpha = \frac{\text{e. opo.}}{\text{e. adj.}}$$

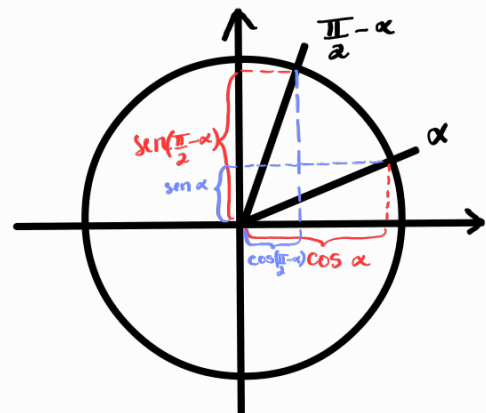
## Reduções ao 1º Quadrante

- Desenha  $\alpha$  no 1º quadrante
- Desenha o ângulo pedido
- compara o sen / cos / Tg do ângulo pedido e  $\alpha$



$$\text{cos}(\pi - \alpha) = -\text{cos} \alpha$$

$$\text{sen}(\pi - \alpha) = \text{sen} \alpha$$



$$\text{sen}\left(\frac{\pi}{2} - \alpha\right) = \text{cos} \alpha$$

$$\text{cos}\left(\frac{\pi}{2} - \alpha\right) = \text{sen} \alpha$$

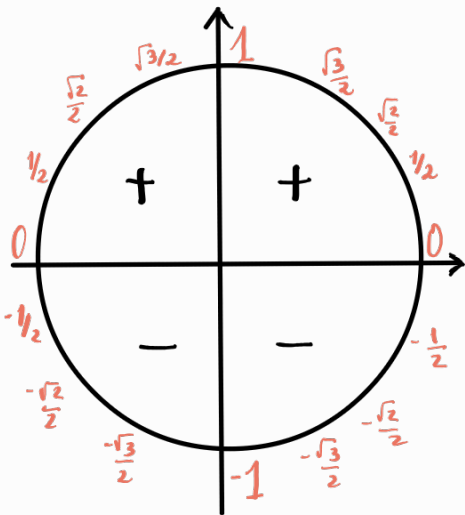
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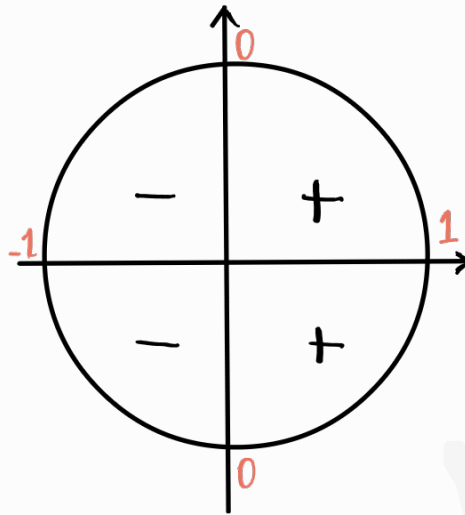
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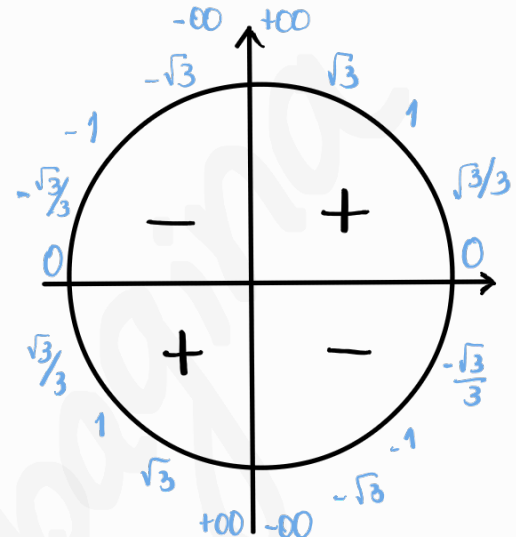
# O Circulo Trigonométrico



$\text{Sen } \alpha$



$\text{cos } \alpha$



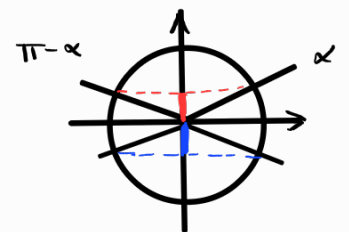
$\text{tg } \alpha$

Seno "lê-x" no y  
 coseno "lê-x" no x  
 tangente "lê-x" em x=1

## Equações Trigonométricas

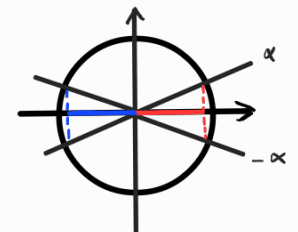
$\therefore \text{Sen}(x) = b$

$x = \alpha + 2K\pi \vee x = \pi - \alpha + 2K\pi, K \in \mathbb{Z}$



$\therefore \text{Cos}(x) = b$

$x = \alpha + 2K\pi \vee x = -\alpha + 2K\pi, K \in \mathbb{Z}$



$\therefore \text{tg}(x) = b$

$x = \alpha + K\pi, K \in \mathbb{Z}$

