

## FORMULÁRIO

## Relações trigonométricas de ângulos agudos

	$\text{sen}(\alpha)$	$\text{cos}(\alpha)$	$\text{tg}(\alpha)$
$\alpha = 0^\circ$	0	1	0
$\alpha = 30^\circ$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$
$\alpha = 45^\circ$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1
$\alpha = 60^\circ$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$
$\alpha = 90^\circ$	1	0	-

## Trigonometria

$$\text{sen}^2(\alpha) + \text{cos}^2(\alpha) = 1$$

$$\text{sen}(\alpha + \beta) = \text{sen}(\alpha) \cdot \text{cos}(\beta) + \text{sen}(\beta) \cdot \text{cos}(\alpha)$$

$$\text{cos}(\alpha + \beta) = \text{cos}(\alpha) \cdot \text{cos}(\beta) - \text{sen}(\alpha) \cdot \text{sen}(\beta)$$

$$\text{tg}(\alpha) = \frac{\text{sen}(\alpha)}{\text{cos}(\alpha)}$$

## Área do Trapézio

$$A = \frac{B + b}{2} \cdot h$$

## Regras de derivação

$$(u + v)' = u' + v'$$

$$(u \cdot v)' = u' \cdot v + u \cdot v'$$

$$\left(\frac{u}{v}\right)' = \frac{u' \cdot v - u \cdot v'}{v^2}$$

$$(u^n)' = n \cdot u^{n-1} \cdot u'$$

$$(\text{sen}(u))' = u' \cdot \text{cos}(u)$$

$$(\text{cos}(u))' = -u' \cdot \text{sen}(u)$$

$$(e^u)' = u' \cdot e^u$$

$$(a^u)' = u' \cdot a^u \cdot \ln(a)$$

$$(\ln(u))' = \frac{u'}{u}$$

$$(\log_a(u))' = \frac{u'}{u \cdot \ln(a)}$$

## Limites notáveis

$$\lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n = e \quad (n \in \mathbb{N})$$

$$\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$$

$$\lim_{x \rightarrow 0} \frac{e^x - 1}{x} = 1$$

$$\lim_{x \rightarrow +\infty} \frac{\ln x}{x} = 0$$

$$\lim_{x \rightarrow +\infty} \frac{e^x}{x^p} = +\infty \quad (p \in \mathbb{R})$$