

## Tabla de las razones trigonométricas de los ángulos fundamentales

	$0 \text{ rad}$	$\frac{\pi}{6 \text{ rad}}$	$\frac{\pi}{4 \text{ rad}}$	$\frac{\pi}{3 \text{ rad}}$	$\frac{\pi}{2 \text{ rad}}$	$\frac{2\pi}{3 \text{ rad}}$	$\frac{3\pi}{4 \text{ rad}}$	$\frac{5\pi}{6 \text{ rad}}$	$\pi \text{ rad}$	$\frac{7\pi}{6 \text{ rad}}$	$\frac{5\pi}{4 \text{ rad}}$	$\frac{4\pi}{3 \text{ rad}}$	$\frac{3\pi}{2 \text{ rad}}$	$\frac{5\pi}{3 \text{ rad}}$	$\frac{7\pi}{4 \text{ rad}}$	$\frac{11\pi}{6 \text{ rad}}$
	$0^\circ$	$30^\circ$	$45^\circ$	$60^\circ$	$90^\circ$	$120^\circ$	$135^\circ$	$150^\circ$	$180^\circ$	$210^\circ$	$225^\circ$	$240^\circ$	$270^\circ$	$300^\circ$	$315^\circ$	$330^\circ$
<b>sen</b>	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{1}{2}$
<b>cos</b>	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{1}{2}$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$
<b>tg</b>	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$		$-\sqrt{3}$	-1	$-\frac{\sqrt{3}}{3}$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$		$-\sqrt{3}$	-1	$-\frac{\sqrt{3}}{3}$
<b>cosec</b>		2	$\sqrt{2}$	$\frac{2\sqrt{3}}{3}$	1	$\frac{2\sqrt{3}}{3}$	$\sqrt{2}$	2		-2	$-\sqrt{2}$	$-\frac{2\sqrt{3}}{3}$	-1	$-\frac{2\sqrt{3}}{3}$	$-\sqrt{2}$	-2
<b>sec</b>	1	$\frac{2\sqrt{3}}{3}$	$\sqrt{2}$	2		-2	$-\sqrt{2}$	$-\frac{2\sqrt{3}}{3}$	-1	$-\frac{2\sqrt{3}}{3}$	$-\sqrt{2}$	-2		2	$\sqrt{2}$	$-\frac{2\sqrt{3}}{3}$
<b>cotg</b>		$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0	$-\frac{\sqrt{3}}{3}$	-1	$-\sqrt{3}$		$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0	$-\frac{\sqrt{3}}{3}$	-1	$-\sqrt{3}$

## Fórmulas fundamentales de la trigonometría

$$\operatorname{tg}(\alpha) = \frac{\operatorname{sen}(\alpha)}{\operatorname{cos}(\alpha)} \quad \operatorname{ctg}(\alpha) = \frac{1}{\operatorname{tg}(\alpha)} \quad \operatorname{csec}(\alpha) = \frac{1}{\operatorname{sen}(\alpha)} \quad \operatorname{sec}(\alpha) = \frac{1}{\operatorname{cos}(\alpha)}$$

$$\operatorname{sen}^2 \alpha + \operatorname{cos}^2 \alpha = 1 \quad 1 + \operatorname{tg}^2 \alpha = \operatorname{sec}^2 \alpha$$

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

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

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

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