

Funciones trigonométricas en función de las otras cinco.

sen	$\frac{\text{sen } \theta}{\sqrt{1 - \cos^2 \theta}}$	$\frac{\text{sen } \theta}{\cos \theta}$	$\frac{\tan \theta}{\sqrt{1 + \tan^2 \theta}}$	$\frac{1}{\sqrt{1 + \cot^2 \theta}}$	$\frac{\sqrt{\sec^2 \theta - 1}}{\sec \theta}$	$\frac{1}{\csc \theta}$
cos	$\frac{\sqrt{1 - \text{sen}^2 \theta}}{\text{sen } \theta}$	$\frac{\cos \theta}{\sqrt{1 - \cos^2 \theta}}$	$\frac{1}{\sqrt{1 + \tan^2 \theta}}$	$\frac{\cot \theta}{\sqrt{1 + \cot^2 \theta}}$	$\frac{1}{\sec \theta}$	$\frac{\sqrt{\csc^2 \theta - 1}}{\csc \theta}$
tan	$\frac{\text{sen } \theta}{\sqrt{1 - \text{sen}^2 \theta}}$	$\frac{\sqrt{1 - \cos^2 \theta}}{\cos \theta}$	$\frac{\tan \theta}{\tan \theta}$	$\frac{1}{\cot \theta}$	$\frac{\sqrt{\sec^2 \theta - 1}}{\sec \theta}$	$\frac{1}{\csc \theta}$
cot	$\frac{\sqrt{1 - \text{sen}^2 \theta}}{\text{sen } \theta}$	$\frac{\cos \theta}{\sqrt{1 - \cos^2 \theta}}$	$\frac{1}{\tan \theta}$	$\frac{\cot \theta}{\cot \theta}$	$\frac{1}{\sec \theta}$	$\frac{\sqrt{\csc^2 \theta - 1}}{\csc \theta}$
sec	$\frac{1}{\sqrt{1 - \text{sen}^2 \theta}}$	$\frac{1}{\cos \theta}$	$\frac{\sqrt{1 + \tan^2 \theta}}{\tan \theta}$	$\frac{\sqrt{1 + \cot^2 \theta}}{\cot \theta}$	$\frac{\sec \theta}{\sec \theta}$	$\frac{\csc \theta}{\csc \theta}$
csc	$\frac{1}{\text{sen } \theta}$	$\frac{1}{\sqrt{1 - \cos^2 \theta}}$	$\frac{\sqrt{1 + \tan^2 \theta}}{\tan \theta}$	$\frac{\sqrt{1 + \cot^2 \theta}}{\cot \theta}$	$\frac{\sec \theta}{\sec \theta}$	$\frac{\csc \theta}{\csc \theta}$

Relación pitagórica $\text{sen}^2 \theta + \cos^2 \theta = 1$

Identidad de la razón $\tan \theta = \frac{\text{sen } \theta}{\cos \theta}$

De las definiciones de las funciones trigonométricas:

$$\begin{aligned} \tan x &= \frac{\text{sen } x}{\cos x} & \cot x &= \frac{1}{\tan x} = \frac{\cos x}{\text{sen } x} \\ \sec x &= \frac{1}{\cos x} & \csc x &= \frac{1}{\text{sen } x} \end{aligned}$$

Son más sencillas de probar en la circunferencia trigonométrica o goniométrica (que tiene radio igual a 1):

$$\begin{aligned} \text{sen}(x) &= \text{sen}(x + 2\pi) & \cos(x) &= \cos(x + 2\pi) & \tan(x) &= \tan(x + \pi) \\ \text{sen}(-x) &= -\text{sen}(x) & \cos(-x) &= \cos(x) & & \\ \tan(-x) &= -\tan(x) & \cot(-x) &= -\cot(x) & & \\ \text{sen}(x) &= \cos\left(\frac{\pi}{2} - x\right) & \cos(x) &= \text{sen}\left(\frac{\pi}{2} - x\right) & \tan(x) &= \cot\left(\frac{\pi}{2} - x\right) \end{aligned}$$