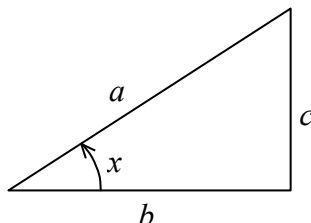


## Definizioni

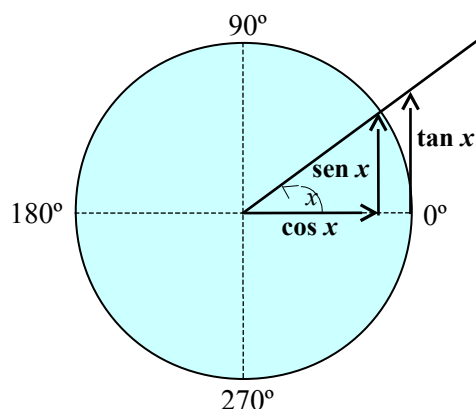
$$\sin x = \frac{\text{cateto opposto}}{\text{ipotenusa}} = \frac{c}{a}$$

$$\cos x = \frac{\text{cateto adiacente}}{\text{ipotenusa}} = \frac{b}{a}$$

$$\tan x = \frac{\text{cateto opposto}}{\text{cateto adiacente}} = \frac{c}{b}$$



## Circonferenza trigonometrica



## Identità fondamentali

$$\sin^2 x + \cos^2 x = 1 \quad \tan x = \frac{\sin x}{\cos x} \quad 1 + \tan^2 x = \frac{1}{\cos^2 x}$$

$$\sec x = \frac{1}{\cos x} \quad \csc x = \frac{1}{\sin x} \quad \cot x = \frac{\cos x}{\sin x} = \frac{1}{\tan x}$$

## Valori delle funzioni seno, coseno e tangente per alcuni angoli notevoli

| °     | 0° | 30°                  | 45°                  | 60°                  | 90°      | 120°                 | 135°                  | 150°                  | 180°  | 210°                  | 225°                  | 240°                  | 270°     | 300°                  | 315°                  | 330°                  | 360°   |
|-------|----|----------------------|----------------------|----------------------|----------|----------------------|-----------------------|-----------------------|-------|-----------------------|-----------------------|-----------------------|----------|-----------------------|-----------------------|-----------------------|--------|
| Rad   | 0  | $\pi/6$              | $\pi/4$              | $\pi/3$              | $\pi/2$  | $2\pi/3$             | $3\pi/4$              | $5\pi/6$              | $\pi$ | $7\pi/6$              | $5\pi/4$              | $4\pi/3$              | $3\pi/2$ | $5\pi/3$              | $7\pi/4$              | $11\pi/6$             | $2\pi$ |
| sen x | 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       | $-\frac{\sqrt{3}}{2}$ | $-\frac{\sqrt{2}}{2}$ | $-\frac{1}{2}$        | 0      |
| cos x | 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        | $\frac{1}{2}$         | $\frac{\sqrt{2}}{2}$  | $\frac{\sqrt{3}}{2}$  | 1      |
| tan x | 0  | $\frac{\sqrt{3}}{3}$ | 1                    | $\sqrt{3}$           | $\infty$ | $-\sqrt{3}$          | -1                    | $-\frac{\sqrt{3}}{3}$ | 0     | $\frac{\sqrt{3}}{3}$  | 1                     | $\sqrt{3}$            | $\infty$ | $-\sqrt{3}$           | -1                    | $-\frac{\sqrt{3}}{3}$ | 0      |

## Quadranti e segni

|                      |                  |                  |                  |
|----------------------|------------------|------------------|------------------|
| <b>Quadrante</b><br> | <b>sen x</b><br> | <b>cos x</b><br> | <b>tan x</b><br> |
|----------------------|------------------|------------------|------------------|