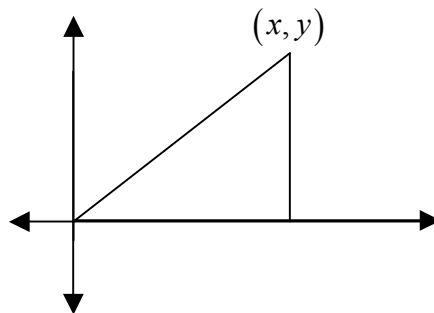


Memorize or PERISH.

Trigonometric Values

$$\begin{aligned} \sin \theta &= \frac{y}{r} & \csc \theta &= \frac{r}{y} \\ \cos \theta &= \frac{x}{r} & \sec \theta &= \frac{r}{x} \\ \tan \theta &= \frac{y}{x} & \cot \theta &= \frac{x}{y} \end{aligned}$$



Reciprocal Identities

$$\begin{aligned} \csc \theta &= \frac{1}{\sin \theta}, \quad \sin \theta \neq 0 \\ \sec \theta &= \frac{1}{\cos \theta}, \quad \cos \theta \neq 0 \\ \cot \theta &= \frac{1}{\tan \theta}, \quad \tan \theta \neq 0 \end{aligned}$$

Pythagorean Identities

$$\begin{aligned} \sin^2 \theta + \cos^2 \theta &= 1 \\ 1 + \cot^2 \theta &= \csc^2 \theta \\ 1 + \tan^2 \theta &= \sec^2 \theta \end{aligned}$$

Ratio Identities

$$\begin{aligned} \tan \theta &= \frac{\sin \theta}{\cos \theta}, \quad \cos \theta \neq 0 \\ \cot \theta &= \frac{\cos \theta}{\sin \theta}, \quad \sin \theta \neq 0 \end{aligned}$$

Odd-Even Identities

$$\begin{aligned} \sin(-\theta) &= -\sin \theta & \csc(-\theta) &= -\csc \theta \\ \cos(-\theta) &= \cos \theta & \sec(-\theta) &= \sec \theta \\ \tan(-\theta) &= -\tan \theta & \cot(-\theta) &= -\cot \theta \end{aligned}$$

Co-function Identities

$$\begin{aligned} \sin\left(\frac{\pi}{2} - \theta\right) &= \cos \theta & \csc\left(\frac{\pi}{2} - \theta\right) &= \sec \theta \\ \cos\left(\frac{\pi}{2} - \theta\right) &= \sin \theta & \sec\left(\frac{\pi}{2} - \theta\right) &= \csc \theta \\ \tan\left(\frac{\pi}{2} - \theta\right) &= \cot \theta & \cot\left(\frac{\pi}{2} - \theta\right) &= \tan \theta \end{aligned}$$

Exact Trigonometric Values of Specific Angles

(This comes from our unit circle, but it would **SAVE YOU TIME** in the long run if you would **MEMORIZE** these so you don't have to always draw a first Quadrant Unit Circle.)

	30° or $\frac{\pi}{6}$	45° or $\frac{\pi}{4}$	60° or $\frac{\pi}{3}$
sin			
cos			
tan			