

Trig Ratios:

$$\begin{aligned} \sin\theta &= \frac{\text{opp}}{\text{hyp}} & \cos\theta &= \frac{\text{adj}}{\text{hyp}} & \tan\theta &= \frac{\text{opp}}{\text{adj}} \\ \csc\theta &= \frac{\text{hyp}}{\text{opp}} & \sec\theta &= \frac{\text{hyp}}{\text{adj}} & \cot\theta &= \frac{\text{adj}}{\text{opp}} \end{aligned}$$

Trig Functions:

$$\sin\theta = \frac{b}{r} \quad \cos\theta = \frac{a}{r} \quad \tan\theta = \frac{b}{a} \quad \csc\theta = \frac{r}{b} \quad \sec\theta = \frac{r}{a} \quad \cot\theta = \frac{a}{b}$$

Circular Functions:

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

Trig Identities:

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

$$\sin(-x) = -\sin(x) = -\frac{b}{r} \quad \cos(-x) = \cos(x) = \frac{a}{r}$$

$$\tan(-x) = -\tan(x) = -\frac{b}{a} \quad \cos^2 x + \sin^2 x = 1$$