

For any angle in standard position with measure θ and a point P (x, y) on its terminal side and $x^2 + y^2 = r^2$

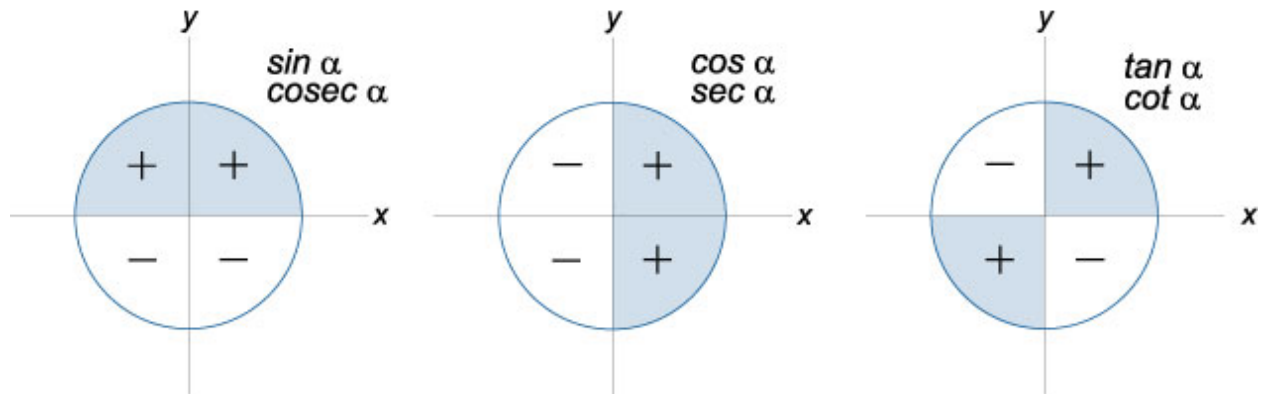
$$\begin{array}{lll} \sin\theta = \frac{y}{r} & \cos\theta = \frac{x}{r} & \tan\theta = \frac{y}{x} \\ \csc\theta = \frac{r}{y} & \sec\theta = \frac{r}{x} & \cot\theta = \frac{x}{y} \end{array}$$

Arc Length and Area of Sectors

A = area, s = arc length, r = radius, θ = angle in radians or degrees

Central Angle	Arc Length	Area
θ in radians	$S = r\theta$	$A = \frac{1}{2} r^2 \cdot \theta$
θ in degrees	$S = \frac{\theta}{360} \cdot 2\pi r$	$A = \frac{\theta}{360} \cdot \pi \cdot r^2$

Signs of the six trig functions



Angular Velocity: How many **degrees** an object travels in a certain time.

Linear Velocity: The **distance** than an object travels in a given time.

Distance formula: Distance = rate \cdot time (d = r \cdot t)