cofunction identities

$\tan(\theta) = \cot(90^\circ - \theta)$

$\cot\left(\frac{\pi}{2} - \theta\right)$

$\cot(\theta) = \tan(90^\circ - \theta)$

$\tan\left(\frac{\pi}{2} - \theta\right)$

$\csc(\theta) = \sec(90^\circ - \theta)$

$\sec\left(\frac{\pi}{2} - \theta\right)$

$\sec(\theta) = \csc(90^\circ - \theta)$

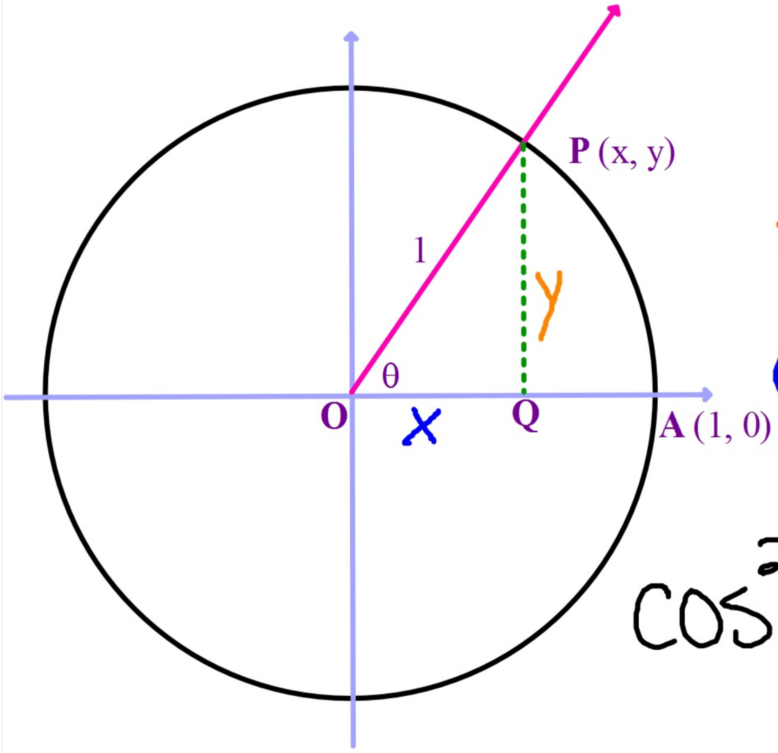
$= \csc\left(\frac{\pi}{2} - \theta\right)$

$\cos(\theta) = \sin(90^\circ - \theta)$

$\sin\left(\frac{\pi}{2} - \theta\right)$

$\sin(\theta) = \cos(90^\circ - \theta)$

$\cos\left(\frac{\pi}{2} - \theta\right)$



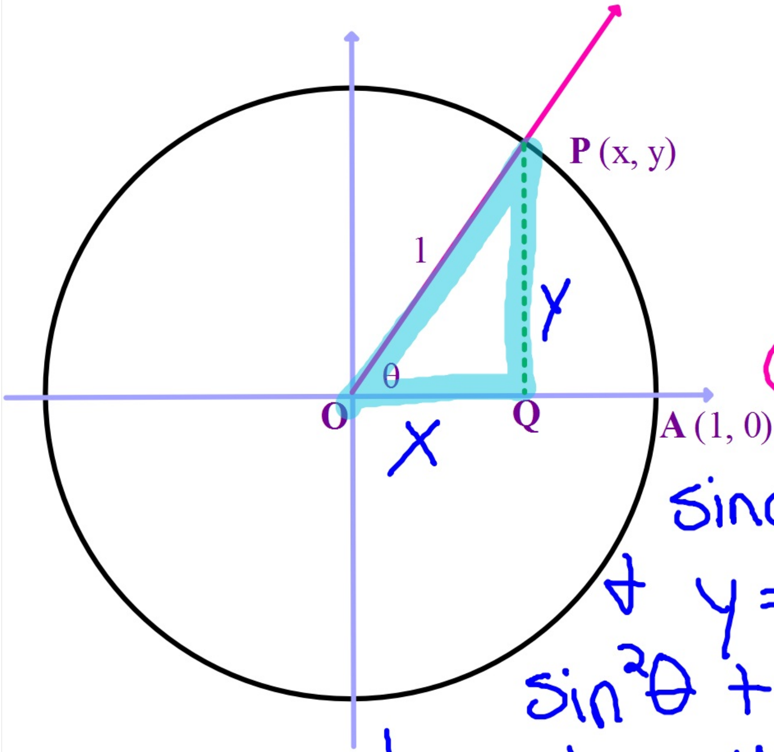
$$\sin\theta = \frac{y}{1} = y$$

$$\cos\theta = \frac{x}{1} = x$$

$$\cos^2\theta = (\cos\theta)^2$$

θ	60^0	225^0	-90^0	570^0	π	$11\pi/6$	-8π	$5\pi/4$
$\cos\theta$	$\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	0	$-\frac{1}{2}$	-1	$\frac{\sqrt{3}}{2}$	1	$-\frac{\sqrt{2}}{2}$
$\sin\theta$	$\sqrt{3}/2$	$-\sqrt{2}/2$	-1	$1/2$	0	$-\sqrt{3}/2$	0	$-\sqrt{2}/2$
$\cos^2\theta$	$\frac{1}{4}$	$\frac{1}{2}$	0	$\frac{3}{4}$	1	$\frac{3}{4}$	1	$\frac{1}{2}$
$\sin^2\theta$	$3/4$	$2/4$	1	$1/4$	0	$1/4$	0	$2/4$
$\sin^2\theta + \cos^2\theta$	1	1	1	1	1	1	1	1

$$\sin^2\theta + \cos^2\theta = 1$$



$$x^2 + y^2 = 1^2$$

$$\cos^2\theta + \sin^2\theta = 1$$

since $x = \cos\theta$

& $y = \sin\theta$

$\sin^2\theta + \cos^2\theta = 1$ is true by the Pythagorean Theorem