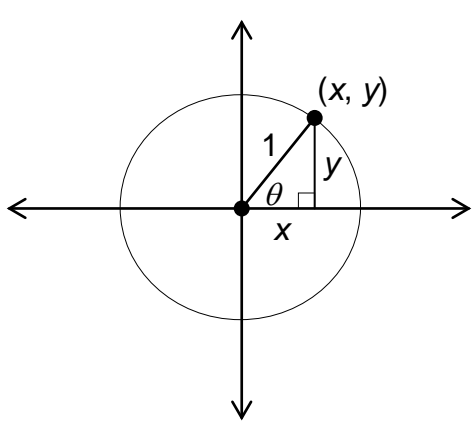
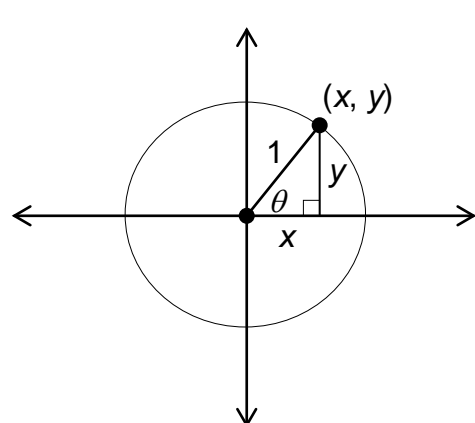
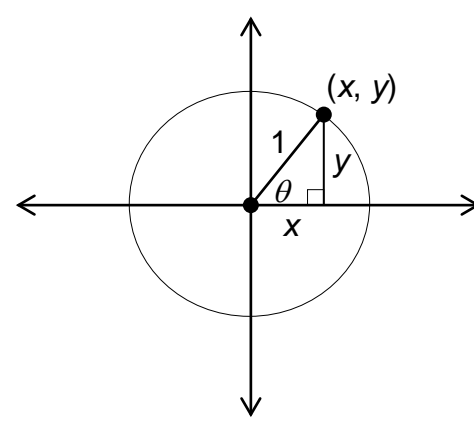


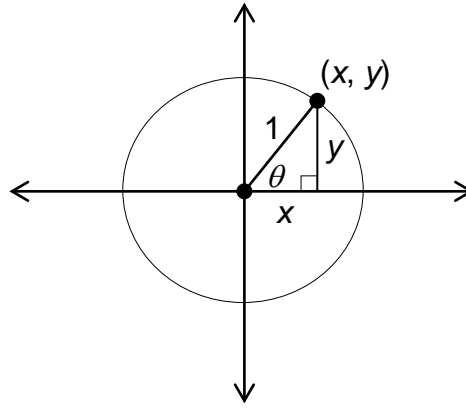
Finding the Trig Function of Any Angle
Module 3, Unit 6, Lesson 5

Trigonometric FunctionsFor a point (x, y) on the unit circle:

Sine	Cosine
$\sin \theta = \frac{\text{opp}}{\text{hyp}}$ $\sin \theta = \frac{y}{1} = y$ <div style="text-align: center; margin-top: 20px;">  </div>	$\cos \theta = \frac{\text{adj}}{\text{hyp}}$ $\cos \theta = \frac{x}{1} = x$ <div style="text-align: center; margin-top: 20px;">  </div>
Tangent	
$\tan \theta = \frac{\text{opp}}{\text{adj}}$ $\tan \theta = \frac{y}{x}$ <div style="text-align: center; margin-top: 20px;">  </div>	

Reciprocal Trigonometric Functions

Cosecant	Secant	Cotangent
$\frac{1}{\sin x} = \csc x$	$\frac{1}{\cos x} = \sec x$	$\frac{1}{\tan x} = \cot x$



If θ is a real number and $P = (x, y)$ is a point on the unit circle that corresponds to θ , then:

$$\sin \theta = y$$

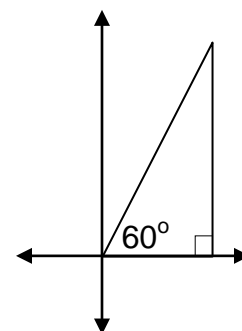
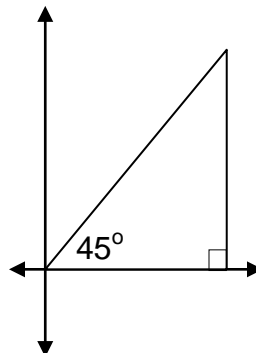
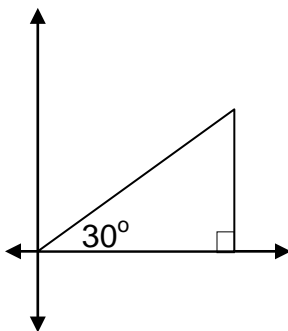
$$\cos \theta = x$$

$$\tan \theta = \frac{y}{x}$$

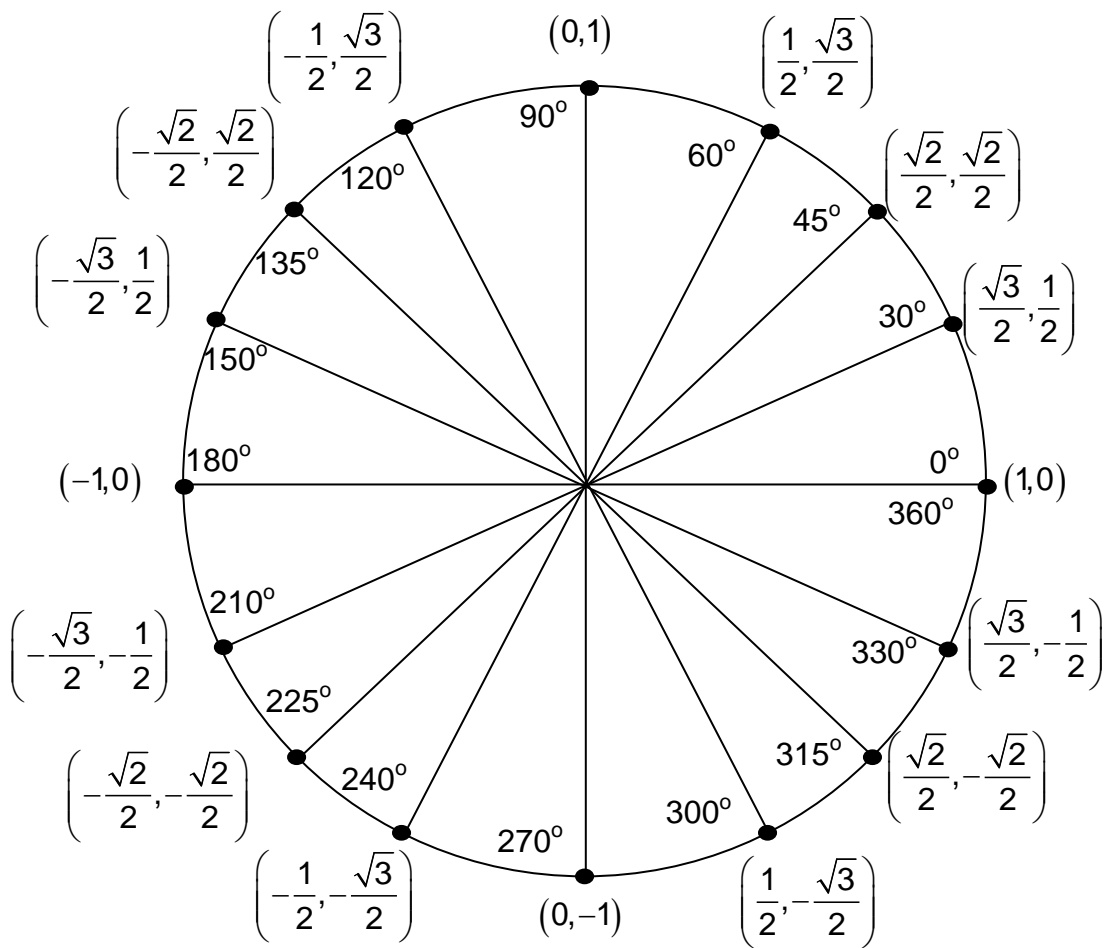
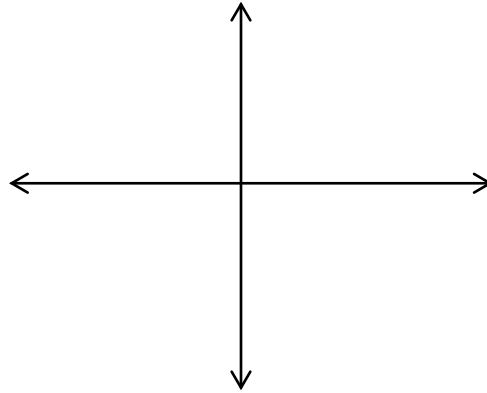
$$\csc \theta = \frac{1}{y}, \quad y \neq 0$$

$$\sec \theta = \frac{1}{x}, \quad x \neq 0$$

$$\cot \theta = \frac{x}{y}, \quad y \neq 0$$



Quadrantal Angles



Example 1:

Find the value of the trigonometric function.

a. $\sin 150^\circ =$

b. $\cos 120^\circ =$

c. $\cos 225^\circ =$

d. $\csc 300^\circ =$

e. $\tan -135^\circ =$

f. $\sec 900^\circ =$

g. $\cot -540^\circ =$

h. $\csc 810^\circ =$

Example 2: Use the unit circle to evaluate the following trigonometric functions.

a. $\sin \frac{3\pi}{4} =$

b. $\cos \frac{\pi}{6} =$

c. $\tan \frac{4\pi}{3} =$

d. $\sec \frac{2\pi}{3} =$

e. $\csc \frac{3\pi}{2} =$

f. $\cot \pi =$

g. $\csc \frac{3\pi}{2} =$

h. $\tan \frac{\pi}{4} =$

i. $\sec \frac{5\pi}{3} =$

j. $\sin \frac{13\pi}{3} =$

k. $\csc -\frac{11\pi}{4} =$

l. $\cot -\frac{5\pi}{6} =$