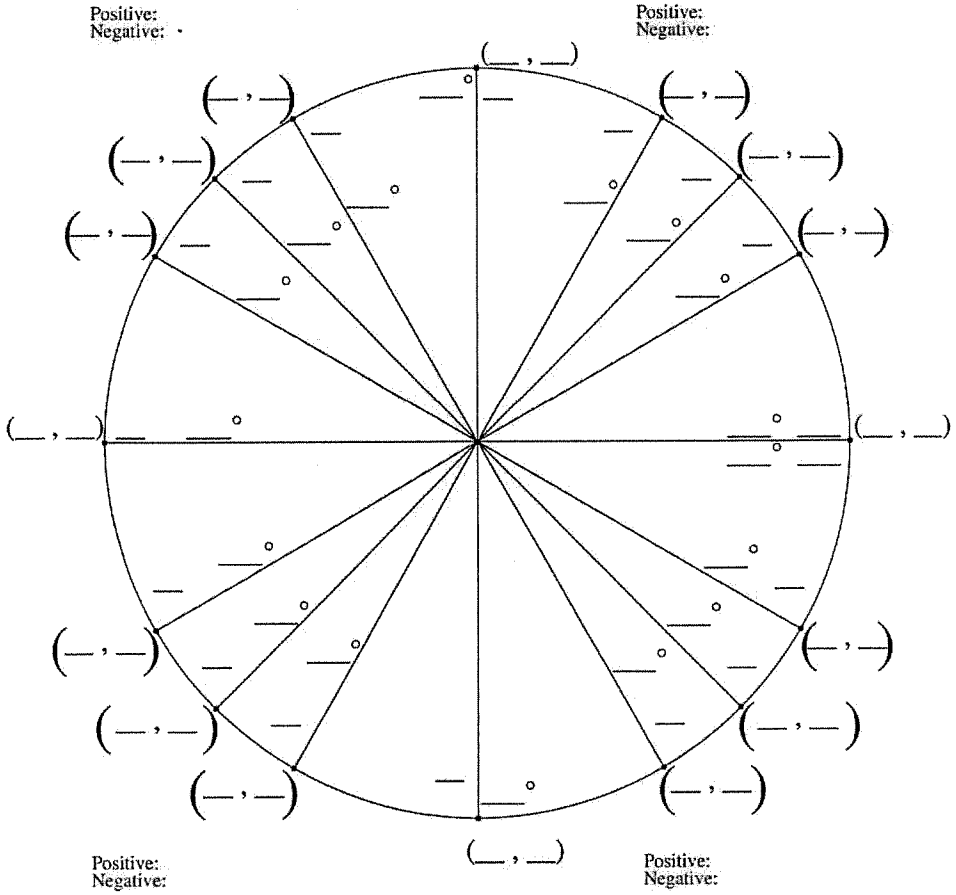
The Unit Circle

Below is the unit circle with angles given in degrees.

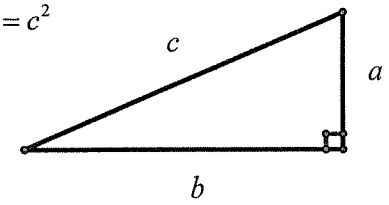
Write in:

1. Each angle's radian measure.
2. The x and y coordinates on the unit circle at each given angle (ie. 0°, 30°, 45°, … 360°).
3. Fill in the following table:

θ (in degrees)	cos(θ)	sin(θ)	tan(θ)
0			
30			
45			
60			
90			

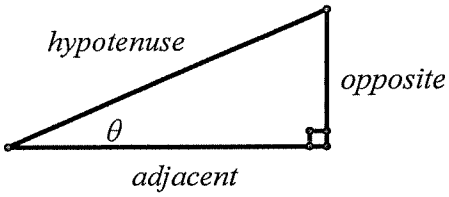


Pythagorean Theorem: For the right triangle $a^2 + b^2 = c^2$



Trig Functions:

SOHCAHTOA

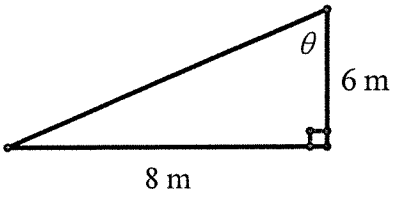


$\sin\theta = \frac{opp}{hyp}$ $\cos\theta = \frac{adj}{hyp}$ $\tan\theta = \frac{opp}{adj}$

Reciprocal Trig Functions:

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

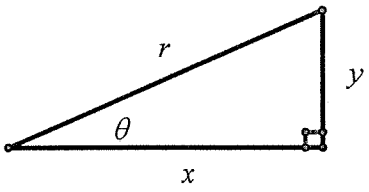
For the triangle drawn below find the following:



$\sin\theta =$ $\cos\theta =$ $\tan\theta =$

$\csc\theta =$ $\sec\theta =$ $\cot\theta =$

Inverse Trig Functions:

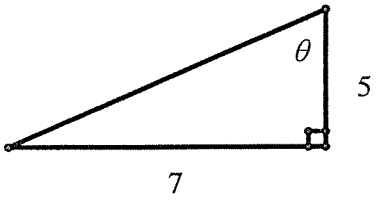


$\arccos\left(\frac{x}{r}\right)=\cos^{-1}\left(\frac{x}{r}\right)$ $\arcsin\left(\frac{y}{r}\right)=\sin^{-1}\left(\frac{y}{r}\right)$ $\arctan\left(\frac{y}{x}\right)=\tan^{-1}\left(\frac{y}{x}\right)$

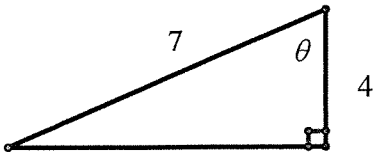
$\cos^{-1}\left(\frac{x}{r}\right)=\theta$ $\sin^{-1}\left(\frac{y}{r}\right)=\theta$ $\tan^{-1}\left(\frac{y}{x}\right)=\theta$

Solve for the angle:

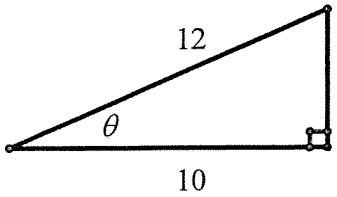
1. Find θ:



2. Find θ:



3. Find θ:



Angles and Radians of a Unit Circle