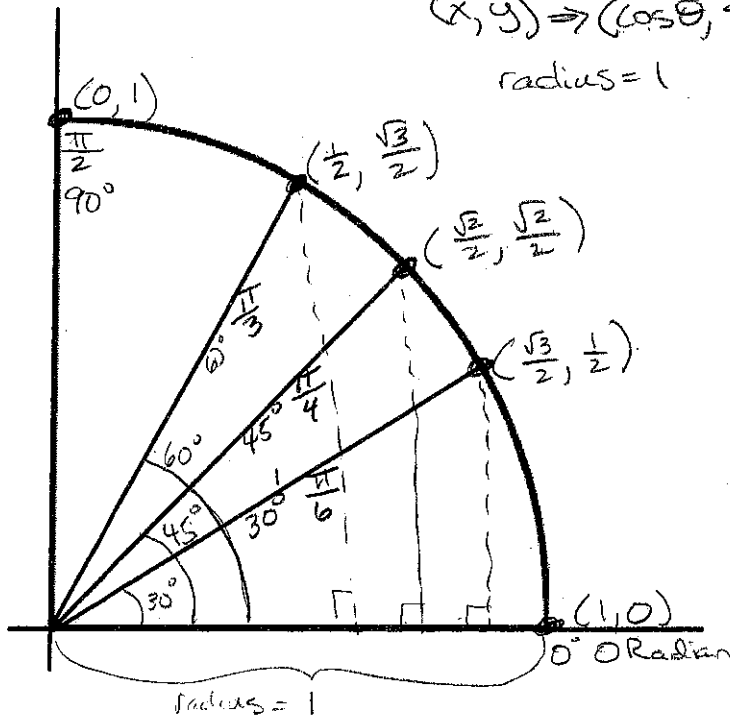


S	A
T	C

## The Unit Circle - Quadrant 1

$$(x, y) \Rightarrow (\cos \theta, \sin \theta)$$

radius = 1



$$\sin \theta = y$$

$$\cos \theta = x$$

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

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

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

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

$$30^\circ, \frac{\pi}{180^\circ} = \frac{\pi}{6}$$

Evaluate each trig function.

1.  $\sin 30^\circ = \underline{\frac{1}{2}}$

6.  $\sin\left(\frac{\pi}{4}\right) = \underline{\frac{\sqrt{2}}{2}}$

2.  $\cos 45^\circ = \underline{\frac{\sqrt{2}}{2}}$

7.  $\cos\left(\frac{\pi}{6}\right) = \underline{\frac{\sqrt{3}}{2}}$

3.  $\csc 90^\circ = \underline{1}$   
 $\frac{1}{\sin 90^\circ} = \frac{1}{1}$

8.  $\csc 0 = \underline{\text{undefined}}$   
 $\frac{1}{\sin 0} = \frac{1}{0}$

4.  $\tan 60^\circ = \underline{\sqrt{3}}$   
 $\frac{\sin 60^\circ}{\cos 60^\circ} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{\sqrt{3}}{2} \cdot \frac{2}{1} = \sqrt{3}$

9.  $\tan\left(\frac{\pi}{4}\right) = \underline{1}$   
 $\frac{\sin \frac{\pi}{4}}{\cos \frac{\pi}{4}} = \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1$

5.  $\sec 45^\circ = \underline{\sqrt{2}}$   
 $\frac{1}{\cos 45^\circ} = \frac{1}{\frac{\sqrt{2}}{2}} = 1 \cdot \frac{2}{\sqrt{2}} = \frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{2\sqrt{2}}{2} = \sqrt{2}$

10.  $\sec\left(\frac{\pi}{2}\right) = \underline{\text{und.}}$   
 $\frac{1}{\cos \frac{\pi}{2}} = \frac{1}{0}$