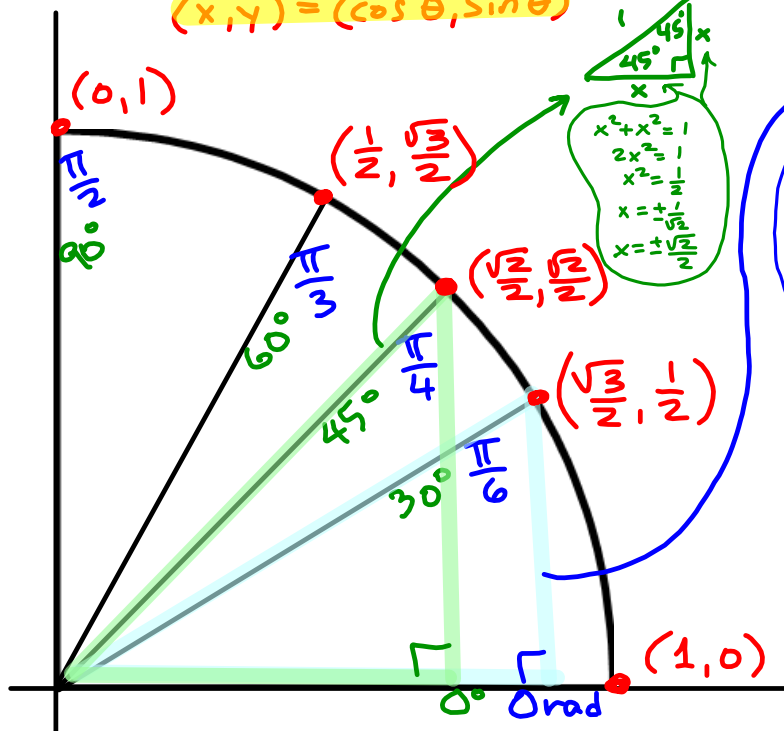


# The Unit Circle - Quadrant 1

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



$$\begin{aligned} \sin \theta &= y \\ \cos \theta &= x \\ \tan \theta &= \frac{y}{x} \\ \csc \theta &= \frac{1}{y} \\ \sec \theta &= \frac{1}{x} \\ \cot \theta &= \frac{x}{y} \end{aligned}$$

## Evaluate each trig function.

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

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

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

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

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

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

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

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

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

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