TOPIC: DEFINING THE UNIT CIRCLE

Introduction to the Unit Circle

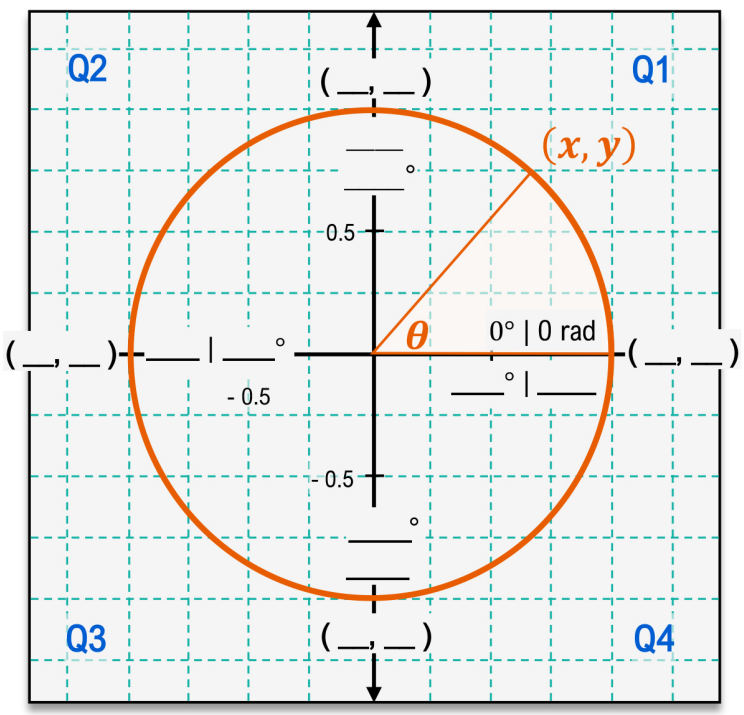
◆ **Unit Circle**: Circle of radius 1 relating angles from 0 to 360° (or ___ radians) to x & y values. Centered at (_____ ,_____).

Recall **Circle**

$$(x-h)^2+(y-k)^2=r^2$$

New **Unit Circle**

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



EXAMPLE Identify which points are on the unit circle and label them on the graph.

(*A*) $(1,1)$ **[ON | NOT ON]** unit circle

(*B*) $\left(\frac{1}{2},\frac{\sqrt{3}}{2}\right)$ **[ON | NOT ON]** unit circle

PRACTICE Identify the quadrant that the given angle is located in.

(*A*)	(*B*)	(*C*)	(*D*)
$\frac{7\pi}{4}$ radians	$\frac{\pi}{7}$ radians	$\frac{2\pi}{3}$ radians	$\frac{6\pi}{5}$ radians
Quadrant: _____	Quadrant: _____	Quadrant: _____	Quadrant: _____

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PRACTICE Test whether the point is on the unit circle by plugging it into the equation.

$$\left(\frac{-\sqrt{2}}{2}, \frac{-\sqrt{2}}{2}\right)$$

New **Unit Circle**

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