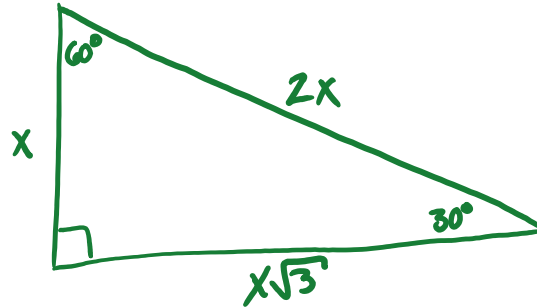
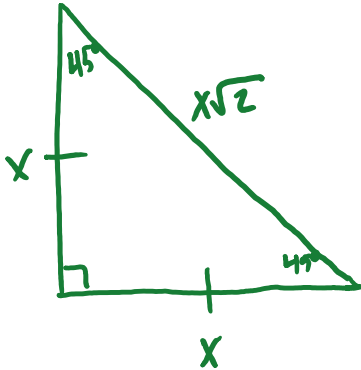


WARM UP

Draw both special right triangles.



ESSENTIAL QUESTION

How does the unit circle correlate to sine and cosine?

NEEDED VOCAB:

► **Unit Circle**

GOAL: "I CAN. . .

Find the coordinates of the unit circle for special triangle angle measures."

Using your drawings from the warm up, find the exact values for the following:

Let $x=1$

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

$$\cos(30^\circ) = \frac{\sqrt{3}}{2}$$

$$\sin(45^\circ) = \frac{\sqrt{2}}{2}$$

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

$$\sin(60^\circ) = \frac{\sqrt{3}}{2}$$

$$\cos(60^\circ) = \frac{1}{2}$$

$$\sin(60^\circ) = \frac{\sqrt{3}}{2}$$

$$\cos(60^\circ) = \frac{1}{2}$$

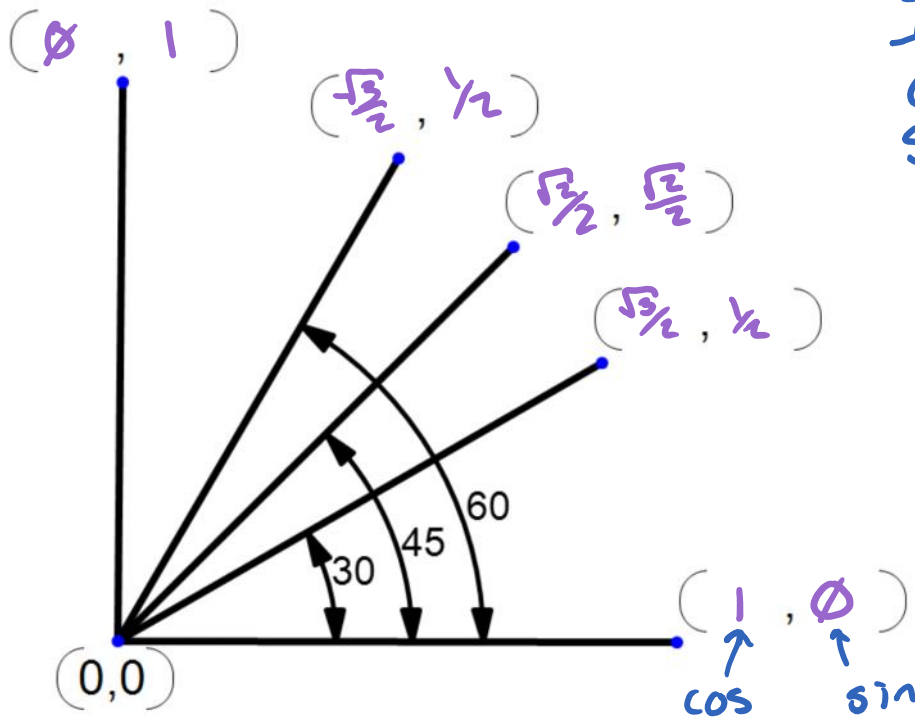
Use a calculator to find the following:

$$\sin(0^\circ) = 0$$

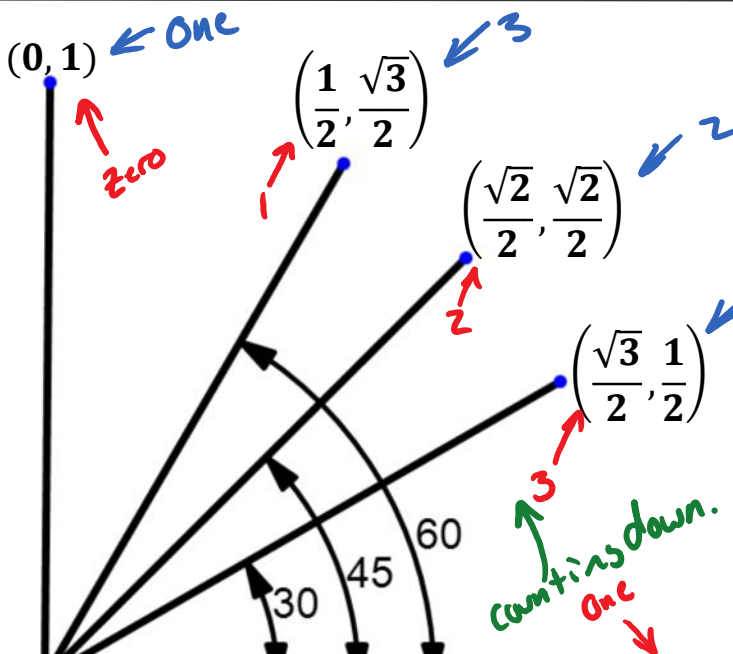
$$\cos(0^\circ) = 1$$

$$\sin(90^\circ) = 1$$

$$\cos(90^\circ) = 0$$



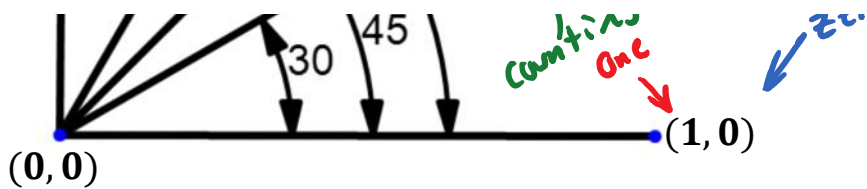
In the coordinate plane
 $\cos(\theta)$ is x and
 $\sin(\theta)$ is y.
 (cos, sin)



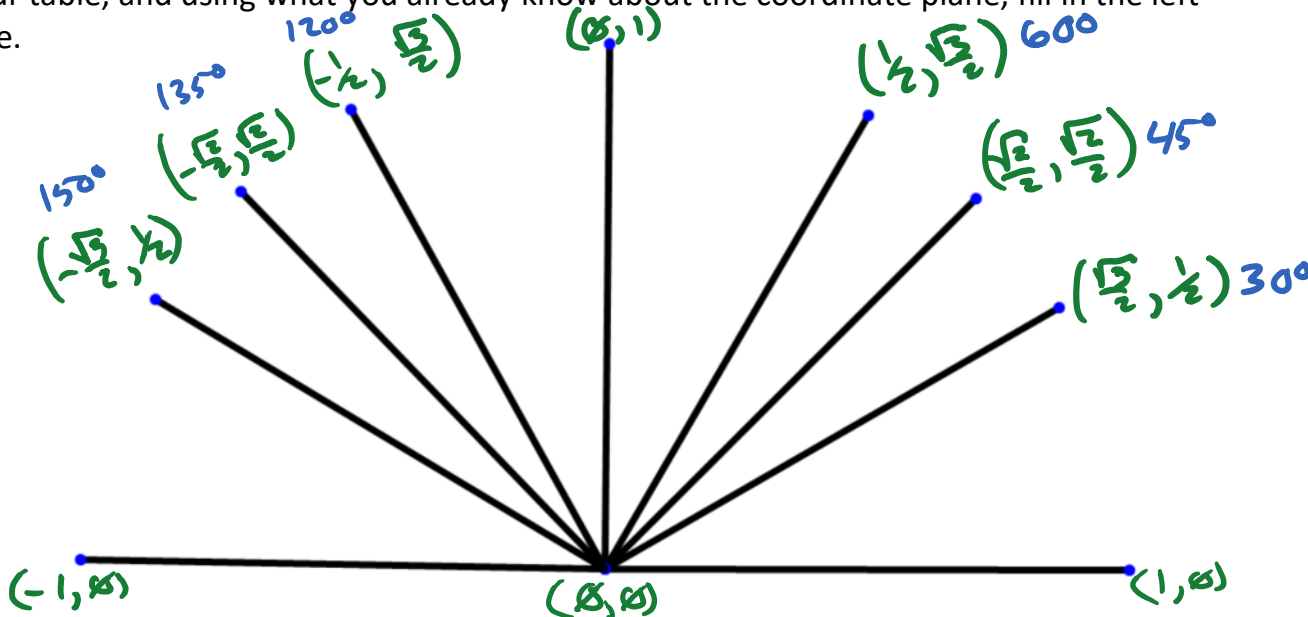
What patterns do we notice?

- @ 45° they are the same value.
- options are either $\frac{1}{2}$, $\frac{\sqrt{2}}{2}$, or $\frac{\sqrt{3}}{2}$
- $\frac{1}{2}$ is smallest, $\frac{\sqrt{3}}{2}$ is largest

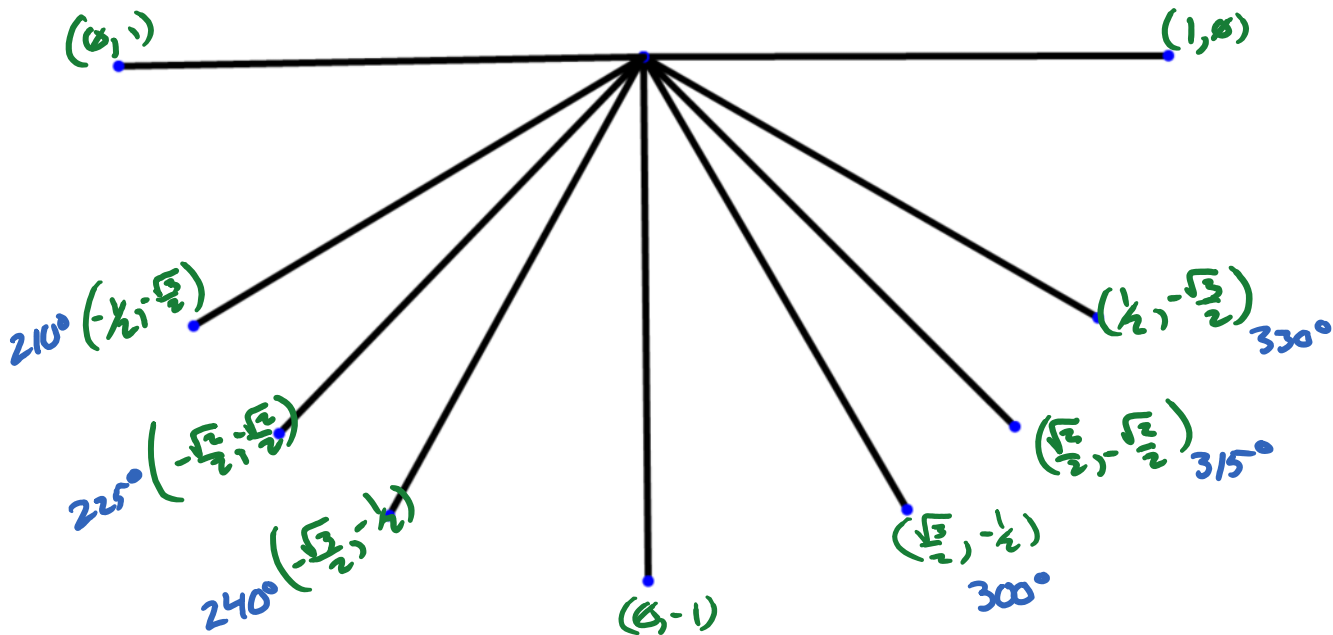
counting up.
 zero



Using what we just did, fill in the right side of this coordinate plane. Then, working with your table, and using what you already know about the coordinate plane, fill in the left side.



Now fill in the bottom half of the unit circle.



<https://tinyurl.com/snb6uvt>



HOMework

PRACTICE AND MEMORIZE THE
COORDINATES FOR THE FIRST
QUADRANT.