Coming Full Circle (Part 2)
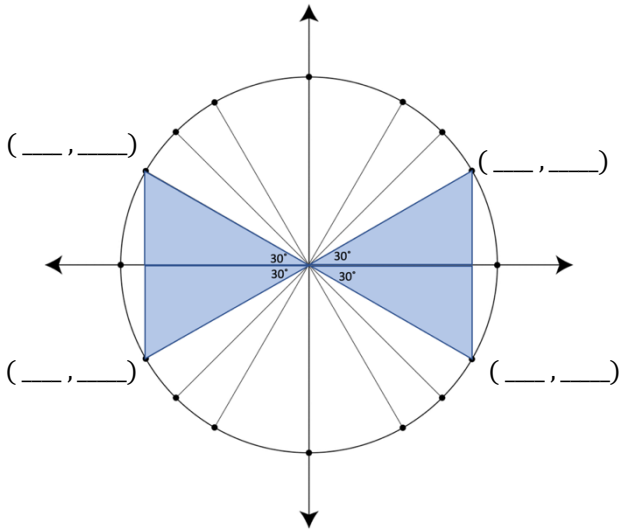
Name:_____

Yesterday we learned how special right triangles in the unit circle could help us evaluate the sine, cosine, and tangent of angles in the first quadrant. Now let's see if we can extend this idea to angles in other quadrants!

(___,___) (___,___)

30° 30°
30° 30°

(___,___) (___,___)

1. Label the ordered pairs on each unit circle.

2. Explain the relationship between the ordered pairs at $\theta = 30°, 150°, 210°,$ and $330°$.

3. In which quadrants is the $\sin\theta$ negative? In which quadrants is the $\cos\theta$ negative?

(___,___) (___,___)

45° 45°
45° 45°

(___,___) (___,___)

4. a. List the angles that are 60° away from the x-axis.

b. What do you notice about the ordered pairs at those angles?

(___,___) (___,___)

60° 60°
60° 60°

(___,___) (___,___)

5. Is it possible to evaluate the trig functions at angles greater than 360° or 2π radians? Explain.

CALC MEDIC
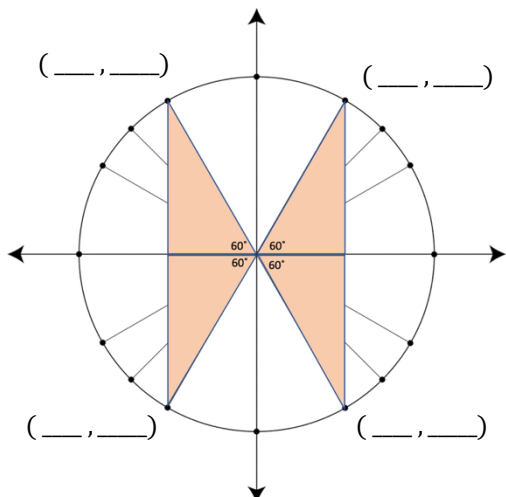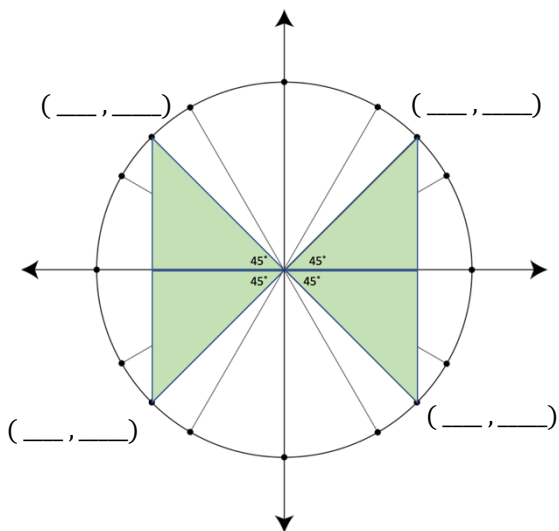
Section 4.3 Day 2—The Unit Circle

Important Ideas:

Check Your Understanding!

1. At which angles are the x and y coordinate on the unit circle *exactly* the same? Give your answer in radians and degrees.

2. Evaluate.

   a. $\cos\left(\frac{4\pi}{3}\right)$

   b. $\sin(315°)$

   c. $\tan\left(\frac{5\pi}{6}\right)$

   d. $\cos(7\pi)$

3. Which one doesn't belong? Give a convincing argument for each answer choice.

$\sin\left(\frac{2\pi}{3}\right)$	$\cos\left(\frac{5\pi}{6}\right)$
$\sin(240°)$	$\sin\left(\frac{11\pi}{6}\right)$

CALC MEDIC