Geometry – DAY 3
Unit Circle Coordinates

Name: Key
Date: _____

Warm-Up: $\frac{\pi}{180}$ $\frac{180}{\pi}$
Convert degrees to radians or radians to degrees!

D → R
1. $135° \cdot \frac{\pi}{180} = \frac{135\pi}{180} = \frac{3\pi}{4}$

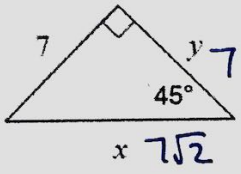
R → D
2. $\frac{5\pi}{3} \cdot \frac{180}{\pi} = 300°$

R → D
3. $\frac{8\pi}{5} \cdot \frac{180}{\pi} = 288°$

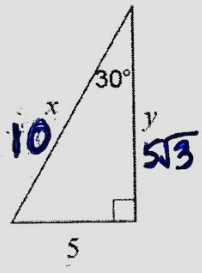
D → R
4. $196° \cdot \frac{\pi}{180} = \frac{49\pi}{45}$

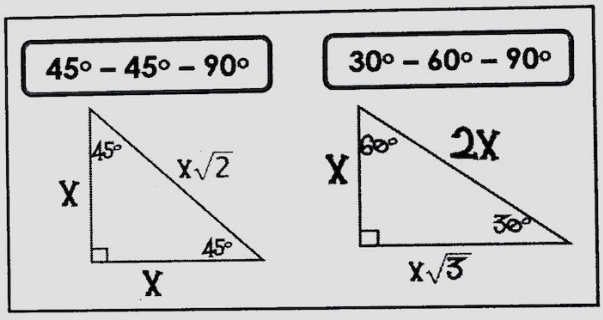
Special Right Triangles!

5.



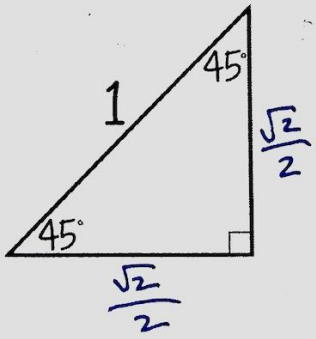
6.





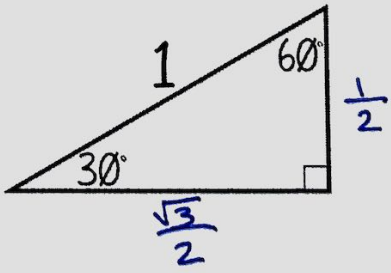
Now solve for the missing sides when there is a hypotenuse of 1!

7.



$x\sqrt{2} = 1$
$x = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$
$x = \frac{\sqrt{2}}{2}$

8.



$2x = 1$
$x = \frac{1}{2}$
$x\sqrt{3}$
$\frac{1}{2} \cdot \sqrt{3} = \frac{\sqrt{3}}{2}$

Now, let's find the coordinates of the unit circle!!!

1. First fill in all the degrees and radians on the unit circle.
2. Cut out your 3 triangles! Two of them are 30-60-90 right triangles and one is a 45-45-90 right triangle.
3. Label the side lengths on all 3 triangles on both sides – the front AND the back!
4. Use the triangles to find the coordinates on the Unit Circle.