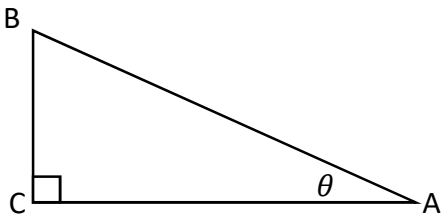
Can you reciprocate? Name:_____

We know how to find the sine, cosine, and tangent of angles on the unit circle, but are there any other ratios we should talk about?

1. In triangle ABC, $\sin\theta = 3/5$. What is $\cos\theta$?



2. Find $\tan\theta$.

3. The **secant** of the angle is 5/4, **cosecant** is 5/3, and **cotangent** is 4/3. How do you think secant, cosecant, and cotangent related to the original trig ratios?

4. Use your knowledge of the Unit Circle to fill in the table below.

θ	$\sec\theta$	$\csc\theta$	$\cot\theta$
$\frac{\pi}{6}$			
$\frac{\pi}{4}$			
$\frac{\pi}{3}$			

5. We can find the sine and cosine of any angle, but the other 4 ratios aren't always as easy. Identify all θ between 0 and 2π where $\sec\theta$, $\csc\theta$, and $\cot\theta$ are undefined.

$\sec\theta$ is undefined when $\theta =$_____

$\csc\theta$ is undefined when $\theta =$_____

$\cot\theta$ is undefined when $\theta =$_____

6. Identify all θ between 0 and 2π where $\sec\theta = \cos\theta$.

7. Consider the first quadrant of the unit circle. How does the cosecant ratio change as the sine ratio increases?

8. For what angles on the unit circle is the length of the hypotenuse double the adjacent?

Lesson 4.4—Other Trig Functions

Important Ideas:

Check Your Understanding

1. Sketch a right triangle where $\csc\theta = 13/5$ and find a set of possible side lengths for the three sides of the triangle.

2. If $\cos\theta = 0.234$, find $\sec\theta$.

3. In a right triangle with angles of 90˚, 45˚, and 45˚, how many times bigger is the hypotenuse than either side?

4. For what value of θ between 0 and 2π does $\sec\theta = 2$?

5. Fill in the table below.

θ	$\sec\theta$	$\csc\theta$	$\cot\theta$
$\frac{5\pi}{6}$			
$\frac{5\pi}{4}$			
$\frac{5\pi}{3}$			