Math 4 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4-3 Trigonometric Simplification** Date\_\_\_\_\_\_\_\_

*In this investigation, you will be working towards the following learning goals:*

I can use and define the six trigonometric functions: sine, cosine, tangent, cosecant, secant, and cotangent

I can use the fundamental trigonometric identities to simplify expressions and verify equivalences

Below are the **six** trigonometric functions.

1.  4. 

2.  5. 

3.  6. 

The six trigonometric functions are related in the following way:

  

A. Write in terms of secant, cosecant, and cotangent.

  

**You will need to have the above six definitions memorized in order to succeed in this lesson.**

B. The functions of secant, cosecant, and cotangent are called *reciprocal functions*. Explain why.

C. Previously, we have learned that . This relationship is an example of an ***identity***. An

identity is *an equation that is true for all values of the variable (as defined by the domain)*

Based on the definition of and the identity for, write an identity for 



**Some Useful Trig Identities:**

1. 🡨 (Known as the Pythagorean identity)

2.

3.

**Examples: Simplify.**

1.

2.

3.