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

**4-4 Trigonometric Proofs** Date\_\_\_\_\_

*In this Activity, 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*

Useful Trigonometric Identities:



*Helpful hints in case you have an identity crisis:*

* Change everything to sine and/or cosine
* Look for occurrences of the basic three identities
* Factor
* Combine +/- expressions into a single fraction using a common denominator
* 
* Use “fancy version of 1”, for example multiply by 
* Multiply by the conjugate
* 

**Trigonometric Proof Advice:**

Start with the MORE COMPLICATED side and work VERTICALLY just on that side to make it look like the other side. SHOW ALL WORK. *Note: We cannot assume that the equation is true, so properties of equality cannot be applied – i.e. we cannot add, subtract, multiply or divide on both sides of the equation.*



***Prove algebraically:***

**Examples: Prove the following.**



1.)

2.) 

3.)



4.)

5.) ****