**5.2 Verifying Trig Identities**

**Objective: Verify (prove) trigonometric identities**

We will be verifying identities and preparing to solve trig equations.

**Conditional Equation:**  Only true for some of the values in the domain. (ex: sin x = 0)… this is when we solve

**Identity:** Is true for all real values in the domain   
(ex: )… this is when we verify

***Guidelines to Verifying Trig Identities***

1. **Work on ones side of equation at a time. Often it is best to work with the ‘more complicated’ side first. (You can not add an expression to both sides, or cross multiply because you don’t know that they are equal yet).**
2. **Look for opportunities to factor an expression, add fractions, square a binomial, or create a monomial denominator.**
3. **Look for opportunities to use the fundamental identities.   
   (Make note of which functions are in final expression you want). Sines and cosines pair up well, as do secants and tangents, cosecants and cotangents.**
4. **If the first 3 Guidelines don’t work, try converting all terms to sine and cosine.**
5. **Always try something. Dead ends can provide insight.**

**Example 1 (Changing to sines and cosines to verify) Left side more complicated**

Verify:

**Example 2 (Factoring to verify) Left side more complicated**

Verify:

**Example 3 (Combing fractional expressions to verify) Left side complicated**

Verify:

**Example 4 (Multiply the Num. and Denom. By Same Factor)**

Verify:

**Example 5 (Changing to Sines and Cosines to Verify)**

Verify:

**Example 6 (Working with both sides separetely to Verify)**

Verify:

**Homework**

Day 1: Pg 385 #3-8, 9-13 (odd), 17, 19, 23

Day 2: Pg 385 #10-20 (even), 25, 29, 31