**7.4 – Proving Identities**

**Tips for proving identities:**

1. Simplify the more complicated side until it is identical to the other side.

2. Manipulate both sides until they are identical.

3. Rewrite trig ratios using x,y,r.

4. Rewrite tangent and reciprocal ratios in terms of sine and cosine.

5. Apply Pythagorean Identity where appropriate

**Reciprocal Identities**

**Quotient Identities**

**Pythagorean Identities**

**Addition/Subtraction Formulas**

**Double Angle Formulas**

**Example 1:** Prove the quotient identity

 for all angles

**Example 2**

Prove the Pythagorean identity for all

**Example 3** : Prove that , except for

**Example 4:** Prove that . State Restrictions.

**Example 5:**  Prove that is not an identity.

All you need is one counterexample to disprove the equivalence of both sides of the equation.

Try x = π/2

**Example 6:** Prove that

**Example 7:**  Prove that

**Example 8**: Prove that tan

**Homework: pg 417 #5,8,9,10 ALL OF THEM!**