

PreCalc: Trig ID Guidelines:

Name: _____

Guidelines for Verifying Trig Identities:

1. Work with only one side of the equation. Simplify the more complex side.
2. Convert all the trig functions to sin or cos to see what can be cancelled.
3. Use the Fundamental trig ID's. Look for Pythagorean pairs: sin/cos, tan/sec, cot/csc.
4. Look for arithmetic things to do: Things that can be added, multiplied or factored. Combine fractions. Square binomials or complete conjugates.
5. Try something! Even dead ends can tell you something.

Extended Pythagorean Identities:

$$\sin^2(u) + \cos^2(u) = 1$$

$$1 + \tan^2(u) = \sec^2(u)$$

$$1 + \cot^2(u) = \csc^2(u)$$

$$\sin^2(u) = 1 - \cos^2(u)$$

$$\tan^2(u) = \sec^2(u) - 1$$

$$\cot^2(u) = \csc^2(u) - 1$$

$$\cos^2(u) = 1 - \sin^2(u)$$

$$1 = \sec^2(u) - \tan^2(u)$$

$$1 = \csc^2(u) - \cot^2(u)$$

$$-1 = \tan^2(u) - \sec^2(u)$$

$$-1 = \cot^2(u) - \csc^2(u)$$