

8.5 Trig Identities Day 2

1) What is the Pythagorean Identity? Explain where it comes from using the unit circle.

2) Name the other two Pythagorean Identities. Explain where they come from.

Simplify each trigonometric expression.

3) $\sec^2 \theta - \tan^2 \theta$

4) $\tan \theta \cot \theta + \tan^2 \theta$

5) $\sin^2 \theta + \cos^2 \theta + \tan^2 \theta$

6) $\cos \theta \cdot (1 + \tan^2 \theta)$

$$7) \frac{\tan \theta}{\cos \theta - \sec \theta}$$

$$8) \sin \theta \csc \theta - \cos^2 \theta$$

$$9) \cot \theta \tan \theta - \sec^2 \theta$$

$$10) \csc \theta - \cos \theta \cot \theta$$

$$11) \cos \theta + \sin \theta \tan \theta$$

$$12) \csc^2 \theta (1 - \cos^2 \theta)$$

$$13) \sin \theta \cdot (1 + \cot^2 \theta)$$

$$14) (1 - \sin \theta)(1 + \sin \theta) \cdot \csc^2 \theta + 1$$

$$15) \frac{\cot^2 \theta - \csc^2 \theta}{\tan^2 \theta - \sec^2 \theta}$$

$$16) \frac{\tan \theta}{\sec \theta - \cos \theta}$$