

Answers to 8.5 Trig Identities Day 2

1) $\sin^2 \theta + \cos^2 \theta = 1$.

For any point on the unit circle, we can create a right triangle to determine the coordinates, where the horizontal leg is x and the vertical leg is y . From this triangle, we can determine that $\sin \theta = y$ and $\cos \theta = x$. If we were to use Pythagorean Theorem, we would get $x^2 + y^2 = 1$, which leads us to $\sin^2 \theta + \cos^2 \theta = 1$ by substitution.

3) 1

5) $\sec^2 \theta$

7) $-\csc \theta$

9) $-\tan^2 \theta$

11) $\sec \theta$

13) $\csc \theta$

15) 1