

## Identity Quiz

Verify that each of the following is an identity.

1. 
$$\frac{\sec x}{\sin x} - \frac{\sin x}{\cos x} = \cot x$$

2. 
$$\frac{\tan^2 x}{\sec^2 x} + \frac{\cot^2 x}{\csc^2 x} = 1$$

3. 
$$\frac{\tan x \cos x}{\cos^2 x - 1} = \csc x$$

4. 
$$\cos^2(x) \tan^2(x) + \cos^2(x) = 1$$

$$5. \cos(x) \cot(x) + \sin(x) = \csc(x)$$

$$6. \frac{\cos(\theta)}{1 - \sin^2(\theta)} = \sec(\theta)$$

$$7. \sin(x) \csc^2(x) \cos(x) = \cot(x)$$

$$8. \frac{\sin x \cot x}{1 - \sin^2 x} = \sec x$$