

Name

Date

# TRIGONOMETRY IDENTITIES

Prove each identity.

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

2.  $\frac{1 + \cos x}{\sin x} = \cos x + \cot x$

3.  $\frac{\sec \phi \sin \phi}{\tan \phi + \cot \phi} = \sin \phi$

4.  $\frac{\sec \phi}{\cos \phi} - \frac{\tan \phi}{\cot \phi} = 1$

5.  $\cos^2 y - \sin^2 y = 1 - 2 \sin^2 y$

6.  $\operatorname{cosec}^2 \phi \tan^2 \phi - 1 = \tan^2 \phi$

7.  $\frac{\sec^2 \phi}{\sec^2 \phi - 1} \operatorname{cosec}^2 \phi$

8.  $\tan^2 x \sin^2 x = \tan^2 x = \sin^2 x$