



Name: _____

Date: _____

Period: _____

9A/9B Review

Analytic Trigonometry: In advanced mathematics, the natural sciences, and engineering, it is sometimes necessary to simplify complicated trigonometric expressions and to solve equations that involve trigonometric functions.

Simplify

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

2. $\frac{\sec^2 x \csc x}{\sec^2 x + \csc^2 x}$

Verify the following identities

3. $\sec \alpha - \cos \alpha = \sin \alpha \tan \alpha$

5. $\frac{\cos x}{1 - \sin x} = \frac{1 + \sin x}{\cos x}$

4. $\sec \theta = \sin \theta (\tan \theta + \cot \theta)$

6. $\frac{\sin t}{1 - \cos t} = \csc t + \cot t$

$$7. \sin u + \cos u \cot u = \csc u$$

$$10. \frac{2\sin^2 t + \sin t - 3}{1 - \cos^2 t - \sin t} = \frac{2\sin t + 3}{\sin t}$$

$$8. \sin^2 x \cos^2 x + \cos^4 x = \cos^2 x$$

$$11. \frac{\cos x}{1 + \sin x} + \tan x = \sec x$$

$$9. \frac{\cot(-\theta)}{\csc(-\theta)} = \cos \theta$$