Name: _____

Date: _____ Class: Trigonometry, per: _____

Chapter 3: Trigonometric Simplification - Worksheet & Review

Objective: I can simplify trigonometric expressions using reciprocal, quotient, Pythagorean, algebraic, and double-angle identities.

1. Simplify $\frac{\sin x}{\cos x}$. Assume the expression is defined.	**2.** Simplify $\frac{\cos x}{\sin x}$. Assume the expression is defined.
3. Simplify $\frac{1}{\sec x}$. Assume the expression is defined.	**4.** Simplify $\frac{1}{\csc x}$. Assume the expression is defined.
5. Simplify $\tan x \cos x$. Assume the expression is defined.	**6.** Simplify $\cot x \sin x$. Assume the expression is defined.
7. Simplify $\sec x \cos x$. Assume the expression is defined.	**8.** Simplify $\csc x \sin x$. Assume the expression is defined.
9. Simplify $\frac{\tan x}{\sec x}$. Assume the expression is defined.	**10.** Simplify $\frac{\cot x}{\csc x}$. Assume the expression is defined.

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11. Simplify $\sin^2 x + \cos^2 x$. Assume the expression is defined.	**12.** Simplify $1 - \sin^2 x$. Assume the expression is defined.
13. Simplify $1 - \cos^2 x$. Assume the expression is defined.	**14.** Simplify $\sec^2 x - \tan^2 x$. Assume the expression is defined.
15. Simplify $\csc^2 x - \cot^2 x$. Assume the expression is defined.	**16.** Simplify $1 + \tan^2 x$. Assume the expression is defined.
17. Simplify $1 + \cot^2 x$. Assume the expression is defined.	**18.** Simplify $\dfrac{1 - \cos^2 x}{\sin x}$. Assume the expression is defined.
19. Simplify $\dfrac{1 - \sin^2 x}{\cos x}$. Assume the expression is defined.	**20.** Simplify $\dfrac{\sec^2 x - 1}{\tan x}$. Assume the expression is defined.

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21. Simplify $\dfrac{\csc^2 x - 1}{\cot x}$. Assume the expression is defined.	**22.** Simplify $(1 - \cos x)(1 + \cos x)$. Assume the expression is defined.
23. Simplify $(1 - \sin x)(1 + \sin x)$. Assume the expression is defined.	**24.** Simplify $\tan x \csc x$. Assume the expression is defined.
25. Simplify $\cot x \sec x$. Assume the expression is defined.	**26.** Simplify $\sin x \sec x$. Assume the expression is defined.
27. Simplify $\cos x \csc x$. Assume the expression is defined.	**28.** Simplify $\dfrac{\sin^2 x}{\cos^2 x} + 1$. Assume the expression is defined.
29. Simplify $\dfrac{\cos^2 x}{\sin^2 x} + 1$. Assume the expression is defined.	**30.** Simplify $\dfrac{\sin^2 x}{1 - \cos^2 x}$. Assume the expression is defined.

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31. Simplify $\frac{\cos^2 x}{1-\sin^2 x}$. Assume the expression is defined.	**32.** Simplify $\frac{\sec x - \cos x}{\tan x}$. Assume the expression is defined.
33. Simplify $\frac{\csc x - \sin x}{\cot x}$. Assume the expression is defined.	**34.** Simplify $(\sec x + \tan x)(\sec x - \tan x)$. Assume the expression is defined.
35. Simplify $(\csc x + \cot x)(\csc x - \cot x)$. Assume the expression is defined.	**36.** Simplify $\tan x + \cot x$. Assume the expression is defined.
37. Simplify $\frac{\sec^2 x}{\tan x}$. Assume the expression is defined.	**38.** Simplify $\frac{\csc^2 x}{\cot x}$. Assume the expression is defined.
39. Simplify $\frac{\sin^2 x}{1+\cos x}$. Assume the expression is defined.	**40.** Simplify $\frac{\cos^2 x}{1+\sin x}$. Assume the expression is defined.

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41. Simplify $\frac{\sin x}{1-\cos x} - \frac{1+\cos x}{\sin x}$. Assume the expression is defined.	**42.** Simplify $\frac{\cos x}{1-\sin x} - \frac{1+\sin x}{\cos x}$. Assume the expression is defined.
43. Simplify $\frac{1-\cos^2 x}{1+\cos x}$. Assume the expression is defined.	**44.** Simplify $\frac{1-\sin^2 x}{1+\sin x}$. Assume the expression is defined.
45. Simplify $\frac{\tan^2 x}{\sec^2 x}$. Assume the expression is defined.	**46.** Simplify $\frac{\cot^2 x}{\csc^2 x}$. Assume the expression is defined.
47. Simplify $\frac{\sec^2 x - 1}{\sec^2 x}$. Assume the expression is defined.	**48.** Simplify $\frac{\csc^2 x - 1}{\csc^2 x}$. Assume the expression is defined.
49. Simplify $\frac{\sin 2x}{2\sin x}$. Assume the expression is defined.	**50.** Simplify $\frac{1-\cos 2x}{2\sin x}$. Assume the expression is defined.