

Simplify Trigonometric Expressions

Name: _____

Date: _____

Simplify the following trigonometric expressions using the trigonometric identities.

1) $\frac{\csc \theta}{\cot \theta}$

2) $\cos x \csc x \tan x$

3) $\cos x \cot x + \sin x$

4) $\sin x + \sin x \cot^2 x$

5) $\csc x - \cos x \cot x$

6) $\frac{\sec x}{\tan x}$

7) $\frac{\cot \theta}{\cos \theta}$

8) $\sin x \cos x \sec x \cot x$

9) $\cos x \tan x + \sin x \cot x$

10) $(\sin x + \cos x)^2 + (\sin x - \cos x)^2$

11) $(1 + \cos \theta)(\csc \theta - \cot \theta)$

12) $\sin x \cos^2 x - \sin x$

13) $\sin x + \cot x \cos x$

14) $\cot x \sin x$

15) $\sin \theta (\csc \theta - \sin \theta)$

16) $\tan x \csc x \cos x$

17) $\frac{1}{\tan^2 \theta + 1}$

18) $\cot^2 x - \cot^2 x \cos^2 x$

19) $\frac{1}{\sec^2 x} + \frac{1}{\csc^2 x}$

20) $\frac{1 - \cos^2 \theta}{1 + \cot^2 \theta}$

21) $\sin^2 \theta \cos^2 \theta - \cos^2 \theta$

22) $\frac{\tan^2 \theta \csc^2 \theta - 1}{\tan^2 \theta}$

23) $\sin \theta + \cos \theta \tan \theta$

24) $\sec^2 \theta - \tan^2 \theta$

25) $\frac{\tan x}{\sin x} + \frac{1}{\cos x}$

26) $\frac{1 - \sec^2 \theta}{\tan^2 \theta}$

27) $\frac{\sin^2 \theta + \cos^2 \theta}{\tan^2 \theta + 1}$

28) $\frac{\cos x}{\sec x - 1} + \frac{\cos x}{\sec x + 1}$

29) $\frac{\sin x}{1 + \cos x} + \frac{\sin x}{1 - \cos x}$

30) $\frac{\sec^2 \theta}{\tan \theta + \cot^2 \theta \tan \theta}$

31) $\cot^2 x \sec^2 x$

32) $\frac{1 - \sin^2 \theta}{1 - \cos^2 \theta}$