

5.1 Notes: Using Fundamental Identities

Reciprocal Identities			Quotient Identities
$\sin \theta = \frac{1}{\quad}$	$\cos \theta = \frac{1}{\quad}$	$\tan \theta = \frac{1}{\quad}$	$\tan \theta = \frac{\sin \theta}{\cos \theta}$
$\csc \theta = \frac{1}{\quad}$	$\sec \theta = \frac{1}{\quad}$	$\cot \theta = \frac{1}{\quad}$	$\cot \theta = \frac{\quad}{\quad}$
Pythagorean Identities			
$\sin^2 \theta + \cos^2 \theta = 1$	$1 + \tan^2 \theta = \sec^2 \theta$	$1 + \cot^2 \theta = \csc^2 \theta$	

Using Identities to Evaluate a Function

1. If $\cos u = -\frac{2}{3}$ and $\tan u > 0$ then find the values of all 6 trigonometric functions.

2. If $\cot x = -5$ and $\sin x = \frac{\sqrt{26}}{26}$ then find the values of all 6 trigonometric functions.

Simplifying a Trigonometric Expression

3. $\sin x \cos^2 x - \sin x$

4. $\frac{\sec \theta}{\csc \theta}$

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

6. $\frac{\csc \beta}{1 + \cot^2 \beta}$

Factoring—Think of the trigonometric function as the variable.

7. $\cos^2 x - 1$

8. $\sin^2 x - 4 \sin x - 12$

9. $\sec^2 x - \tan x - 3$