

## 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				
$\sin^2 \theta + \cos^2 \theta = 1$	$1 + \tan^2 \theta = \sec^2 \theta$	$1 + \cot^2 \theta = \csc^2 \theta$		

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