

**Derivatives of Trig Functions**

$$\frac{d}{dx}(\sin x) =$$

$$\frac{d}{dx}(\cos x) =$$

$$\frac{d}{dx}(\tan x) =$$

$$\frac{d}{dx}(\cot x) =$$

$$\frac{d}{dx}(\sec x) =$$

$$\frac{d}{dx}(\csc x) =$$

*Example 1:*

Find  $f'(x)$  for  $f(x) = x \cos x + 6$ .

*Example 2:*

Find  $\frac{dy}{dx}$  for  $y = x^2 \sin x + \cos x$ .

*Example 3:*

Find  $g'(x)$  for  $g(x) = \frac{x}{\tan x} + 3x$ .

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*Example 4:*

Find  $h'(x)$  for  $h(x) = \frac{\cot x}{3} - 3x \cot x$ .

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*Example 5:*

Find  $f'(x)$  for  $f(x) = \frac{\sec x}{1+\sec x}$ .