3.8 Derivatives of Inverse Trigonometric Functions

Day 2

M E M O R I Z E

$$\frac{d}{dx} \sec^{-1}x = \frac{1}{|x|\sqrt{x^2 - 1}}$$

$$\frac{d}{dx} \csc^{-1}x = - \frac{1}{|x|\sqrt{x^2 - 1}}$$

$$\frac{d}{dx} \cot^{-1}x = - \frac{1}{1 + x^2}$$

Ex 1)

$$\frac{d}{dx} \sec^{-1}(x^3) =$$

Ex 2)

$$\frac{d}{dx} \cot^{-1}(3x) =$$

Ex 3)

$$\frac{d}{dx} \csc^{-1} \frac{x}{3} =$$

Ex 4)

$$\frac{d}{dx} \cot^{-1} \sqrt{(x)} =$$

Ex 5)

$$\frac{d}{dx} \sec^{-1} x + \sqrt{(x^2 + 1)} =$$

Ex 6) Write an equation for the line tangent to
   $y = \tan^{-1}x$ at $x = 1$

Ex 7) Write an equation for the line tangent to
   $y = \arcsin x$ at $x = 0.5$

Ex 8) $y = 3x^2 + 4x + 2$

  $y(1) =$

  $y'(1) =$

  $y^{-1}(9) =$

  $(y^{-1})'(9) =$

Ex 9)

If f(x) = 3x^2 - x and g(x) = f $^{-1}$(x), then g'(10) =