

Section 3.3

I. Derivatives of Trigonometric Functions

a. Sine and Cosine

$$y = f(x) = \sin x$$

$$y = f(x) = \cos x$$

$$y' = f'(x) = \cos x$$

$$y' = f'(x) = -\sin x$$

b. Other Trigonometric Functions – Quotients of Sine and Cosine

$$y = f(x) = \tan x$$

$$y = f(x) = \sec x$$

$$y' = f'(x) = \sec^2 x$$

$$y' = f'(x) = \sec x \tan x$$

II. Derivatives of Exponential and Logarithmic Functions

a.

$$y = f(x) = \exp x = e^x$$

$$y' = f'(x) = \exp x = e^x$$

b.

$$y = f(x) = \ln x$$

$$y' = f'(x) = \frac{1}{x}$$

III. Examples, Examples, Examples

IV. Tangent Line Approximations