

**Math 201**

**Section 3.2** Derivatives of Logarithmic Functions

Derivatives of Logarithmic Functions

$$\frac{d}{dx}[\ln(x)] = \frac{1}{x}$$

Logarithmic Differentiation

1. Take the natural log of both sides of the equation.
2. Simplify using properties of logarithmic functions.
3. Implicitly differentiate both sides of the equation.
4. Multiply both sides by  $y$  to solve for  $\frac{dy}{dx}$ .
5. Rewrite  $y$  in terms of  $x$ .