Name: _____   Date: _____

Learning Goal 3.3	Using more derivative rules.

$$\frac{d}{dx}(\ln(x)) =$$ $$\frac{d}{dx}(\log_b(x)) =$$

$$\frac{d}{dx}(\ln(g(x))) =$$ $$\frac{d}{dx}(\log_b(g(x))) =$$

** Recall the domain for logarithms **

Example Differentiate.

a. $y = \cos(\ln x)$ b. $y = (\ln(1 + e^x))^2$

Change of Base for Logarithms

c. $y = \ln \sqrt{\dfrac{3x + 2}{3x - 2}}$

d. $y = \log_2(1 - 3x)$