

SECTION 3-9: DERIVATIVES OF EXPONENTIAL FUNCTIONS AND LOGARITHMS (DAY 2)

1. Quick Review

2. Find the derivatives for the functions below.

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

(b) $f(x) = 5 \log_2(x)$

(c) $f(x) = \ln(x^2 + \sin(x))$

(d) $f(x) = \ln\left(\frac{x^4}{(x+1)^2}\right)$

3. Logarithmic Differentiation: A Strategy for Finding Even More Derivatives

(a) $y = x^x$

(b) $y = (x^2 + 1)^{\sin(x)}$

(c) $y = \frac{xe^x}{\sqrt{1+7x}}$