

Derivatives of Exponential and Logarithmic Functions (3.9)**Derivatives of Exponential Functions:** Differentiate.

1) $y = x^3 4^{2x}$

2) $f(x) = 5^{3x^2}$

Logarithmic Differentiation: Use logarithmic differentiation to find the derivative of the function.

3) $y = \frac{x^2 \sqrt[3]{7x-14}}{(1+x^2)^4}$

4) $y = \frac{(x^2-8)^{1/3} \sqrt{x^3+1}}{x^6-7x+5}$