

LESSON 11: LOGARITHMIC DIFFERENTIATION

Objective:	1. To use the method of logarithmic differentiation
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Logarithmic Differentiation

1. Take the log of both sides
2. Use properties of logs to simplify
3. Differentiate implicitly
4. Solve for $\frac{dy}{dx}$

Examples

1. $\frac{d}{dx}4^x =$

2. Find $D_x y$, given $y = (x^2 + 2)^4(x - 2)^5$

3. Find $D_x y$, given $y = 5^{\cos 3x}$

4. Find $D_x y$, given $y = \log_3 x$

More Practice

1. Find $D_x y$, given a. $y = x^x$ b. $y = x^{\ln x^2}$

2. Find y' , if $y = \log_2 \frac{x^2}{x-1}$

Derivatives, Lesson 11 cont.

3. Find y' , if $y = \log_5 \sqrt{x^2 - 1}$

4. Find y' , if $y = (x - 2)^{(x+1)}$

