

Exponential and Logarithmic Derivatives

Differentiate directly, show the rule structure, and state the real domain for logarithmic expressions.

1. Differentiate  $y=(4^x)/x$ .

2. Differentiate  $y=x^3 \ln(x+3)$ . Domain:  $x>-3$ .

Exponential and Logarithmic Derivatives

Differentiate directly, show the rule structure, and state the real domain for logarithmic expressions.

3. Differentiate  $y = (\ln(x+8))/x$ . Domain:  $x > -8$ .

4. Differentiate  $y = x^3 7^x$ .

Exponential and Logarithmic Derivatives

Differentiate directly, show the rule structure, and state the real domain for logarithmic expressions.

5. Differentiate  $y = e^{(12x+5)}$ .

6. Differentiate  $y = \ln(11x+11)$  and state its real domain.