
1. (1 pt) Let

$$f(x) = -3 \ln(7x)$$

$$f'(x) = \underline{\hspace{2cm}}$$

$$f'(3) = \underline{\hspace{2cm}}$$

2. (1 pt) Let

$$f(x) = -3x^4 \ln x$$

$$f'(x) = \underline{\hspace{2cm}}$$

$$f'(e^2) = \underline{\hspace{2cm}}$$

3. (1 pt) Let

$$f(x) = [\ln x]^4$$

$$f'(x) = \underline{\hspace{2cm}}$$

$$f'(e^4) = \underline{\hspace{2cm}}$$

4. (1 pt) Let

$$f(x) = \ln(x^2)$$

$$f'(x) = \underline{\hspace{2cm}}$$

$$f'(e^3) = \underline{\hspace{2cm}}$$

5. (1 pt) Let

$$f(x) = \frac{x^8(x-4)^9}{(x^2+9)^8}$$

Use logarithmic differentiation to determine the derivative.

$$f'(x) = \underline{\hspace{2cm}}$$

$$f'(4) = \underline{\hspace{2cm}}$$
