

1. (1 pt)

Given that

$$f(x) = x^9 h(x)$$

$$h(-1) = 3$$

$$h'(-1) = 6$$

Calculate $f'(-1)$. _____

[HINT: Use the product rule and the power rule.]

2. (1 pt) If $f(x) = 5x^2 - 12x - 27$, find $f'(x)$.

Find $f'(5)$.

3. (1 pt) If $f(x) = 6x^8 - 7x^5 - 4x^3 + 4x$, find $f'(x)$.

Find $f'(5)$.

4. (1 pt) If $f(x) = (4x^2 - 6)(7x + 5)$, find $f'(x)$.

Find $f'(1)$.

5. (1 pt) If $f(t) = 4t^{-7}$, find $f'(t)$.

Find $f'(5)$.

6. (1 pt) If

$$f(x) = \frac{4x + 8}{4x + 2},$$

find $f'(x)$.

Find $f'(5)$.

7. (1 pt)

$$\text{Let } f(x) = 2x^4 \sqrt{x} + \frac{6}{x^3 \sqrt{x}}.$$

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

8. (1 pt) If

$$f(x) = \frac{6x^2 + 2x + 4}{\sqrt{x}},$$

find $f'(x)$.

Find $f'(4)$.