

1. Find $f'(x)$ when $f(x) = (x^2 - 4x^3)^5$

2. Find $\frac{dy}{dx}$ when $y = (x + 5)^2(x + 4)^3$.

3. Find y' and y'' when $y = 5x^2 + \frac{1}{x^2}$

4. Find $\frac{d^2y}{dx^2}$ when $y = \frac{2x}{x+1}$.