

Differentiation - Power Rule

Find $f'(x)$.

1. $f(x) = x^4 + x^3 + x^2 + x + 1$

2. $f(x) = 7x^2 - 2x^3 + 3$

3. $f(x) = \frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3}$

4. $f(x) = \frac{2}{x} - \frac{1}{3x^2} + \frac{4}{7x^3}$

5. $f(x) = \sqrt{x} + x\sqrt{x} + x^2\sqrt{x}$

$$6. f(x) = 5\sqrt{x} - 8x^2\sqrt{x} + \pi - 4x$$

$$7. f(x) = \frac{2}{\sqrt{x}} + \frac{3}{x\sqrt{x}} + \frac{4}{x^2\sqrt{x}} + \frac{5}{7}$$

$$8. f(x) = \frac{3}{2\sqrt{x}} + \frac{1}{\sqrt[3]{x}} - \frac{4}{\sqrt[4]{x}}$$

$$9. f(x) = x \ln 3 + \frac{1}{2}x\sqrt[3]{x} - x^2\sqrt[4]{x}$$

$$10. f(x) = 3x\sqrt[3]{x} - 7x + \frac{4}{\sqrt{x}} - 5e$$