Name

Derivative Rules - Sum Rule Positive Fractional Powers as Radical to Derivative

1 Find the derivative f'(x) using the sum rule.

$$f(x) = 2\sqrt{x} - 4x^2$$

A	$f'(x) = x^{-\frac{1}{2}} - 8x$	B	$f'(x) = x^{\frac{1}{2}} - 8x^2$
C	$f'(x) = 2x^{-\frac{1}{2}} - 4x$		

2 Find the derivative f'(x) using the sum rule.

$$f(x) = 3\sqrt[3]{x^2} - 5x$$

A	$f'(x) = 2x^{-\frac{1}{3}} - 5$	B	$f'(x) = 3x^{-\frac{1}{3}} - 5$
C	$f'(x) = 2x^{\frac{2}{3}} - 5x$		

3 Find the derivative f'(x) using the sum rule.

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

A	$f'(x) = x^{-\frac{1}{2}} + 8x$	B	$f'(x) = x^{\frac{1}{2}} + 8x^2$
C	$f'(x) = 2x^{-\frac{1}{2}} + 4x$		

4 Find the derivative f'(x) using the sum rule.

$$f(x) = -2\sqrt[3]{x^2} + 2x^2$$

A	$f'(x) = -\frac{4}{3}x^{\frac{2}{3}} + 4x^2$	B	$f'(x) = -\frac{4}{3}x^{-\frac{1}{3}} + 4x$
C	$f'(x) = -2x^{-\frac{1}{3}} + 2x$		

5 Find the derivative f'(x) using the sum rule.

$$f(x) = -2\sqrt[3]{x^4} - 3$$

A	$f'(x) = -\frac{8}{3}x^{\frac{1}{3}}$	B	$f'(x) = -\frac{8}{3}x^{\frac{4}{3}}$
C	$f'(x) = -\frac{8}{3}x^{\frac{1}{3}} - 3$	D	$f'(x) = -2x^{\frac{1}{3}}$

6 Find the derivative f'(x) using the sum rule.

$$f(x) = 2\sqrt{x^3} + 5x^3$$

A	$f'(x) = 2x^{\frac{1}{2}} + 5x^2$	B	$f'(x) = 3x^{\frac{3}{2}} + 15x^3$
C	$f'(x) = 3x^{\frac{1}{2}} + 15x^2$		

7 Find the derivative f'(x) using the sum rule.

$$f(x) = 5\sqrt[3]{x^2} - 3$$

A	$f'(x) = \frac{10}{3}x^{-\frac{1}{3}} - 3$	B	$f'(x) = 5x^{-\frac{1}{3}}$
C	$f'(x) = \frac{10}{3}x^{\frac{2}{3}}$	D	$f'(x) = \frac{10}{3}x^{-\frac{1}{3}}$

8 Find the derivative f'(x) using the sum rule.

$$f(x) = 2\sqrt{x} - 3x^2 + 4x^3$$

A	$f'(x) = x^{\frac{1}{2}} - 6x^2 + 12x^3$	B	$f'(x) = x^{-\frac{1}{2}} - 6x + 12x^2$
C	$f'(x) = 2x^{-\frac{1}{2}} - 3x + 4x^2$		