



Derivative Rules - Sum Rule Negative Fractional Powers to Derivative

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

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

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

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

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

D $f'(x) = -2x^{-\frac{4}{3}} + 4$

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

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

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

B $f'(x) = -\frac{5}{2}x^{-\frac{3}{2}} - 9x^2$

C $f'(x) = -\frac{5}{2}x^{-\frac{1}{2}} - 9x^3$

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

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

A $f'(x) = 4x^{-\frac{5}{2}} + 5x$

B $f'(x) = -6x^{-\frac{5}{2}} + 10x - 2$

C $f'(x) = -6x^{-\frac{3}{2}} + 10x^2$

D $f'(x) = -6x^{-\frac{5}{2}} + 10x$

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

$$f(x) = -3x^{-\frac{3}{2}} - 3x$$

A $f'(x) = \frac{9}{2}x^{-\frac{3}{2}} - 3x$

B $f'(x) = \frac{9}{2}x^{-\frac{5}{2}} - 3$

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

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

$$f(x) = -5x^{-\frac{3}{2}} - 5x^3$$

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

B $f'(x) = \frac{15}{2}x^{-\frac{5}{2}} - 15x^2$

C $f'(x) = \frac{15}{2}x^{-\frac{3}{2}} - 15x^3$

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

$$f(x) = 5x^{-\frac{3}{2}} - 2$$

A $f'(x) = -\frac{15}{2}x^{-\frac{3}{2}}$

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

C $f'(x) = -\frac{15}{2}x^{-\frac{5}{2}}$

D $f'(x) = -\frac{15}{2}x^{-\frac{5}{2}} - 2$

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

$$f(x) = 2x^{-\frac{1}{3}} + 5x^2$$

A $f'(x) = -\frac{2}{3}x^{-\frac{4}{3}} + 10x$

B $f'(x) = -\frac{2}{3}x^{-\frac{1}{3}} + 10x^2$

C $f'(x) = 2x^{-\frac{4}{3}} + 5x$

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

$$f(x) = -3x^{-\frac{4}{3}} + 5x^3$$

A $f'(x) = 4x^{-\frac{4}{3}} + 15x^3$

B $f'(x) = -3x^{-\frac{7}{3}} + 5x^2$

C $f'(x) = 4x^{-\frac{7}{3}} + 15x^2$