



## Derivative Rules - Sum Rule Negative Powers as Division (with Rule) to

### Derivative

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

$$\text{if } h(x) = f(x) + g(x), h'(x) = f'(x) + g'(x)$$

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

A  $f'(x) = -10x^{-3} - 6x$

B  $f'(x) = -10x^{-2} - 6x^2$

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

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

$$\text{if } h(x) = f(x) + g(x), h'(x) = f'(x) + g'(x)$$

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

A  $f'(x) = -9x^{-3} + 4x$

B  $f'(x) = 3x^{-4} + 4$

C  $f'(x) = -9x^{-4} + 4$

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

$$\text{if } h(x) = f(x) + g(x), h'(x) = f'(x) + g'(x)$$

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

A  $f'(x) = -10x^{-2} - 10x^2$

B  $f'(x) = 5x^{-3} - 5x$

C  $f'(x) = -10x^{-3} - 10x$

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

$$\text{if } h(x) = f(x) + g(x), h'(x) = f'(x) + g'(x)$$

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

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

B  $f'(x) = 9x^{-3} + 6x^2$

C  $f'(x) = 9x^{-4} + 6x$

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

$$\text{if } h(x) = f(x) + g(x), h'(x) = f'(x) + g'(x)$$

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

A  $f'(x) = -3x^{-4} - 3x$

B  $f'(x) = 9x^{-3} - 6x^2$

C  $f'(x) = 9x^{-4} - 6x$

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

$$\text{if } h(x) = f(x) + g(x), h'(x) = f'(x) + g'(x)$$

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

A  $f'(x) = -9x^{-4} - 4x$

B  $f'(x) = 3x^{-4} - 2x$

C  $f'(x) = -9x^{-3} - 4x^2$

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

$$\text{if } h(x) = f(x) + g(x), h'(x) = f'(x) + g'(x)$$

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

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

B  $f'(x) = 10x^{-2} + 6x^2 - 12x^3$

C  $f'(x) = 10x^{-3} + 6x - 12x^2$

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

$$\text{if } h(x) = f(x) + g(x), h'(x) = f'(x) + g'(x)$$

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

A  $f'(x) = 5x^{-3} - 4x - 3x^2$

B  $f'(x) = -10x^{-3} - 8x - 9x^2$

C  $f'(x) = -10x^{-2} - 8x^2 - 9x^3$