



Derivative Rules - Product Rule Negative Powers to Derivative

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

$$f(x) = (5x^{-3} + 6)(-2x - 3)$$

A $f'(x) = (-15x^{-4})(-2x - 3) - (5x^{-3} + 6)(-2)$

B $f'(x) = (-15x^{-4})(-2x - 3)$

C $f'(x) = (-15x^{-4})(-2)$

D $f'(x) = (-15x^{-4})(-2x - 3) + (5x^{-3} + 6)(-2)$

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

$$f(x) = (-5x^{-3} + 7)(-2x^2)$$

A $f'(x) = (15x^{-4})(-4x)$

B $f'(x) = (15x^{-4})(-2x^2)$

C $f'(x) = (15x^{-4})(-2x^2) + (-5x^{-3} + 7)(-4x)$

D $f'(x) = (15x^{-4})(-2x^2) - (-5x^{-3} + 7)(-4x)$

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

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

A $f'(x) = (15x^{-4})(-3x) + (-5x^{-3} - 3)(-3)$

B $f'(x) = (15x^{-4})(-3)$

C $f'(x) = (15x^{-4})(-3x)$

D $f'(x) = (15x^{-4})(-3x) - (-5x^{-3} - 3)(-3)$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

A $f'(x) = (8x^{-3})(4x)$

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

C $f'(x) = (8x^{-3})(2x^2) + (-4x^{-2} - 3)(4x)$

D $f'(x) = (8x^{-3})(2x^2) - (-4x^{-2} - 3)(4x)$

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

$$f(x) = (4x^{-2} + 7)(-4x - 6)$$

A $f'(x) = (-8x^{-3})(-4)$

B $f'(x) = (-8x^{-3})(-4x - 6)$

C $f'(x) = (-8x^{-3})(-4x - 6) - (4x^{-2} + 7)(-4)$

D $f'(x) = (-8x^{-3})(-4x - 6) + (4x^{-2} + 7)(-4)$

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

$$f(x) = (3x^{-2} - 6)(2x + 4)$$

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

B $f'(x) = (-6x^{-3})(2x + 4) + (3x^{-2} - 6)(2)$

C $f'(x) = (-6x^{-3})(2x + 4) - (3x^{-2} - 6)(2)$

D $f'(x) = (-6x^{-3})(2x + 4)$