



Derivative Rules - Multi Chain Product Natural Exponential to Derivative

1 Find the derivative $f'(x)$ using the product, chain, and natural exponential rules.

$$f(x) = (3x - 4)^2 (4e^x)$$

A $f'(x) = 6(3x - 4)(4e^x)$

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

$f'(x) = 6(3x - 4)(4e^x) - (3x - 4)^2 (4e^x)$

$f'(x) = 6(3x - 4)(4e^x) + (3x - 4)^2 (4e^x)$

2 Find the derivative $f'(x)$ using the product, chain, and natural exponential rules.

$$f(x) = (x^2 - 4)^{-1} (5e^x)$$

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

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

C $f'(x) = (x^2 - 4)^{-1} (5e^x)$

$f'(x) = -(x^2 - 4)^{-2} (2x) (5e^x) + (x^2 - 4)^{-1} (5e^x)$

3 Find the derivative $f'(x)$ using the product, chain, and natural exponential rules.

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

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

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

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

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

4 Find the derivative $f'(x)$ using the product, chain, and natural exponential rules.

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

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

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

C $f'(x) = -6(3x + 5)^{-3} (2e^x) + \frac{1}{(3x + 5)^2} (2e^x)$

D $f'(x) = -6(3x + 5)^{-3} (2e^x) - \frac{1}{(3x + 5)^2} (2e^x)$

5 Find the derivative $f'(x)$ using the product, chain, and natural exponential rules.

$$f(x) = (x + 2)^{-1} (2e^x)$$

A $f'(x) = (x + 2)^{-1} (2e^x)$

B $f'(x) = -(x + 2)^{-2} (2e^x)$

$f'(x) = -(x + 2)^{-2} (2e^x) + (x + 2)^{-1} (2e^x)$

$f'(x) = -(x + 2)^{-2} (2e^x) - (x + 2)^{-1} (2e^x)$

6 Find the derivative $f'(x)$ using the product, chain, and natural exponential rules.

$$f(x) = (x^2 - 5)^3 (4e^x)$$

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

B $f'(x) = 3(x^2 - 5)^2 (2x) (4e^x) + (x^2 - 5)^3 (4e^x)$

C $f'(x) = 3(x^2 - 5)^2 (2x) (4e^x) - (x^2 - 5)^3 (4e^x)$

D $f'(x) = (x^2 - 5)^3 (4e^x)$

7 Find the derivative $f'(x)$ using the product, chain, and natural exponential rules.

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

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

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

C $f'(x) = \frac{1}{3} (2x^2 - 3)^{-\frac{2}{3}} (4x) (3e^x) - \sqrt[3]{(2x^2 - 3)} (3e^x)$

D $f'(x) = \frac{1}{3} (2x^2 - 3)^{-\frac{2}{3}} (4x) (3e^x) + \sqrt[3]{(2x^2 - 3)} (3e^x)$

8 Find the derivative $f'(x)$ using the product, chain, and natural exponential rules.

$$f(x) = (2x - 5)^3 (4e^x)$$

A $f'(x) = 6(2x - 5)^2 (4e^x) - (2x - 5)^3 (4e^x)$

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

C $f'(x) = 6(2x - 5)^2 (4e^x) + (2x - 5)^3 (4e^x)$

D $f'(x) = 6(2x - 5)^2 (4e^x)$