Name

Derivative Rules - Multi Chain Quotient Natural Exponential to Derivative

1

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

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

A $f'(x) = \frac{4(3x^2+4)^3(6x)(3e^x) - (3x^2+4)^4(3e^x)}{3e^x}$

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

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

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

2

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

$$f(x) = \frac{\frac{1}{(2x+4)}}{5e^x}$$

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

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

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

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

3

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

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

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

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

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

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

4

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

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

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

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

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

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

5

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

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

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

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

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

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

6

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

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

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

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

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

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

7

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

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

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

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

C $f'(x) = \frac{9(3x+2)^2(2e^x) + (3x+2)^3(2e^x)}{(2e^x)^2}$

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

8

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

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

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

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

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

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