Name

Derivative Rules - Multi Chain Product Natural Exponential (with Rule) to Derivative

1

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

if $y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$

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

A $f'(x) = 4(2x-4)\,(3e^x) + (2x-4)^2\,(3e^x)$

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

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

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

2

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

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

$f(x) = \dfrac{1}{(x+2)^2}\,(2e^x)$

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

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

C $f'(x) = \dfrac{1}{(x+2)^2}\,(2e^x)$

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

3

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

$\dfrac{d}{dx}e^x = e^x$

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

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

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

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

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

4

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

if $y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$

$f(x) = (2x^2+4)^3\,(e^x)$

A $f'(x) = 3(2x^2+4)^2(4x)\,(e^x)$

B $f'(x) = (2x^2+4)^3\,(e^x)$

C $f'(x) = 3(2x^2+4)^2(4x)\,(e^x) + (2x^2+4)^3\,(e^x)$

D $f'(x) = 3(2x^2+4)^2(4x)\,(e^x) - (2x^2+4)^3\,(e^x)$

5

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

$\dfrac{d}{dx}e^x = e^x$

$f(x) = (2x^2+3)^4\,(2e^x)$

A $f'(x) = 4(2x^2+3)^3(4x)\,(2e^x) + (2x^2+3)^4\,(2e^x)$

B $f'(x) = 4(2x^2+3)^3(4x)\,(2e^x)$

C $f'(x) = (2x^2+3)^4\,(2e^x)$

D $f'(x) = 4(2x^2+3)^3(4x)\,(2e^x) - (2x^2+3)^4\,(2e^x)$

6

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

if $y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$

$f(x) = (2x^2+5)^3\,(2e^x)$

A $f'(x) = (2x^2+5)^3\,(2e^x)$

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

C $f'(x) = 3(2x^2+5)^2(4x)\,(2e^x) + (2x^2+5)^3\,(2e^x)$

D $f'(x) = 3(2x^2+5)^2(4x)\,(2e^x)$

7

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

if $y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$

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

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

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

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

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

8

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

if $y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$

$f(x) = \dfrac{1}{(x^2+5)}\,(e^x)$

A $f'(x) = \dfrac{1}{(x^2+5)}\,(e^x)$

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

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

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