Name

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

1

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

$$\frac{d}{dx}a^x = a^x \ln a$$

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

A $f'(x) = -(5e^x + 3^x)^{-1} \cdot (5e^x + 3^x \ln 3)$

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

C $f'(x) = -(5e^x + 3^x)^{-2} \cdot (5e^x + 3^x \ln 3)$

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

2

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

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

$$f(x) = \frac{1}{(3e^x + 9^x)}$$

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

B $f'(x) = -(3e^x + 9^x)^{-1} \cdot (3e^x + 9^x \ln 9)$

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

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

3

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

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

$$f(x) = \sqrt[3]{(2e^x + 5 \cdot 7^x)}$$

A $f'(x) = \frac{1}{3}(2e^x + 5 \cdot 7^x)^{\frac{1}{3}} \cdot (2e^x + 5 \cdot 7^x \ln 7)$

B $f'(x) = \frac{1}{3}(2e^x + 5 \cdot 7^x)^{-\frac{2}{3}}$

C $f'(x) = (2e^x + 5 \cdot 7^x)^{-\frac{2}{3}} \cdot (2e^x + 5 \cdot 7^x \ln 7)$

D $f'(x) = \frac{1}{3}(2e^x + 5 \cdot 7^x)^{-\frac{2}{3}} \cdot (2e^x + 5 \cdot 7^x \ln 7)$

4

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

$$\frac{d}{dx}a^x = a^x \ln a$$

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

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

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

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

D $f'(x) = 3(3e^x + 2 \cdot 4^x)^2 \cdot (3e^x + 2 \cdot 4^x \ln 4)$

5

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

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

$$f(x) = (4e^x + 2 \cdot 7^x)^4$$

A $f'(x) = 4(4e^x + 2 \cdot 7^x)^4 \cdot (4e^x + 2 \cdot 7^x \ln 7)$

B $f'(x) = 4(4e^x + 2 \cdot 7^x)^3 \cdot (4e^x + 2 \cdot 7^x \ln 7)$

C $f'(x) = (4e^x + 2 \cdot 7^x)^3 \cdot (4e^x + 2 \cdot 7^x \ln 7)$

D $f'(x) = 4(4e^x + 2 \cdot 7^x)^3$

6

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

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

$$f(x) = (3e^x + 3 \cdot 9^x)^{-1}$$

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

B $f'(x) = -(3e^x + 3 \cdot 9^x)^{-1} \cdot (3e^x + 3 \cdot 9^x \ln 9)$

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

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

7

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

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

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

A $f'(x) = (5e^x + 7^x)^{-3} \cdot (5e^x + 7^x \ln 7)$

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

C $f'(x) = -2(5e^x + 7^x)^{-2} \cdot (5e^x + 7^x \ln 7)$

D $f'(x) = -2(5e^x + 7^x)^{-3} \cdot (5e^x + 7^x \ln 7)$

8

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

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

$$f(x) = (e^x + 2 \cdot 9^x)^{-2}$$

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

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

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

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