Name

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

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

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

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

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

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

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

D $f'(x) = \frac{(2e^x)(2 \cdot 4^x) - (2e^x)(2 \cdot 4^x \ln 4)}{(2 \cdot 4^x)^2}$

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

if $h(x) = \frac{f(x)}{g(x)}$, $h'(x) = \frac{f'(x)g(x) - f(x)g'(x)}{[g(x)]^2}$

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

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

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

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

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

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

if $h(x) = \frac{f(x)}{g(x)}$, $h'(x) = \frac{f'(x)g(x) - f(x)g'(x)}{[g(x)]^2}$

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

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

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

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

D $f'(x) = \frac{(4e^x)(2 \cdot 4^x) - (4e^x)(2 \cdot 4^x \ln 4)}{2 \cdot 4^x}$

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

if $h(x) = \frac{f(x)}{g(x)}$, $h'(x) = \frac{f'(x)g(x) - f(x)g'(x)}{[g(x)]^2}$

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

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

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

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

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

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

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

$$f(x) = \frac{2e^x}{4 \cdot 7^x}$$

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

B $f'(x) = \frac{(2e^x)(4 \cdot 7^x) - (2e^x)(4 \cdot 7^x \ln 7)}{4 \cdot 7^x}$

C $f'(x) = \frac{(2e^x)(4 \cdot 7^x) - (2e^x)(4 \cdot 7^x \ln 7)}{(4 \cdot 7^x)^2}$

D $f'(x) = \frac{(2e^x)(4 \cdot 7^x \ln 7) - (2e^x)(4 \cdot 7^x)}{(4 \cdot 7^x)^2}$

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

if $h(x) = \frac{f(x)}{g(x)}$, $h'(x) = \frac{f'(x)g(x) - f(x)g'(x)}{[g(x)]^2}$

$f(x) = \frac{e^x}{2 \cdot 5^x}$

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

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

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

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

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

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

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

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

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

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

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

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

if $h(x) = \frac{f(x)}{g(x)}$, $h'(x) = \frac{f'(x)g(x) - f(x)g'(x)}{[g(x)]^2}$

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