



Derivative Rules - Multi Quotient Natural and General Exponential to Derivative

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

$$f(x) = \frac{e^x}{8^x}$$

A $f'(x) = \frac{(e^x)(8^x) + (e^x)(8^x \ln 8)}{(8^x)^2}$

B $f'(x) = \frac{(e^x)(8^x) - (e^x)(8^x \ln 8)}{(8^x)^2}$

C $f'(x) = \frac{(e^x)(8^x \ln 8) - (e^x)(8^x)}{(8^x)^2}$

D $f'(x) = \frac{(e^x)(8^x) - (e^x)(8^x \ln 8)}{8^x}$

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

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

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

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

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

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

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

$$f(x) = \frac{4e^x}{4 \cdot 9^x}$$

A $f'(x) = \frac{(4e^x)(4 \cdot 9^x) - (4e^x)(4 \cdot 9^x \ln 9)}{4 \cdot 9^x}$

B $f'(x) = \frac{(4e^x)(4 \cdot 9^x \ln 9) - (4e^x)(4 \cdot 9^x)}{(4 \cdot 9^x)^2}$

C $f'(x) = \frac{(4e^x)(4 \cdot 9^x) - (4e^x)(4 \cdot 9^x \ln 9)}{(4 \cdot 9^x)^2}$

D $f'(x) = \frac{(4e^x)(4 \cdot 9^x) + (4e^x)(4 \cdot 9^x \ln 9)}{(4 \cdot 9^x)^2}$

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

$$f(x) = \frac{4e^x}{3 \cdot 8^x}$$

A $f'(x) = \frac{(4e^x)(3 \cdot 8^x \ln 8) - (4e^x)(3 \cdot 8^x)}{(3 \cdot 8^x)^2}$

B $f'(x) = \frac{(4e^x)(3 \cdot 8^x) + (4e^x)(3 \cdot 8^x \ln 8)}{(3 \cdot 8^x)^2}$

C $f'(x) = \frac{(4e^x)(3 \cdot 8^x) - (4e^x)(3 \cdot 8^x \ln 8)}{3 \cdot 8^x}$

D $f'(x) = \frac{(4e^x)(3 \cdot 8^x) - (4e^x)(3 \cdot 8^x \ln 8)}{(3 \cdot 8^x)^2}$

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

$$f(x) = \frac{5e^x}{5 \cdot 4^x}$$

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

B $f'(x) = \frac{(5e^x)(5 \cdot 4^x) - (5e^x)(5 \cdot 4^x \ln 4)}{5 \cdot 4^x}$

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

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

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

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

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

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

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

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

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

$$f(x) = \frac{4e^x}{9^x}$$

A $f'(x) = \frac{(4e^x)(9^x) + (4e^x)(9^x \ln 9)}{(9^x)^2}$

B $f'(x) = \frac{(4e^x)(9^x \ln 9) - (4e^x)(9^x)}{(9^x)^2}$

C $f'(x) = \frac{(4e^x)(9^x) - (4e^x)(9^x \ln 9)}{(9^x)^2}$

D $f'(x) = \frac{(4e^x)(9^x) - (4e^x)(9^x \ln 9)}{9^x}$

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

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

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

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

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

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