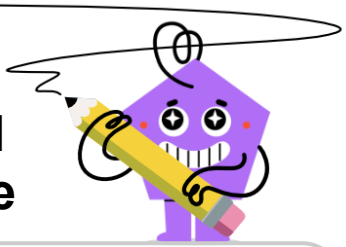
Name

Derivative Rules - General Exponential Exponent with Coefficient to Derivative



1

Find the derivative f'(x) using the general exponential rule and the chain rule. $f(x) = 4 \cdot 3^{\frac{3}{2}x}$

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

B $f'(x) = 6 \cdot 3^{\frac{3}{2}x}$

C $f'(x) = 6 \cdot 3^{\frac{3}{2}x} \ln 3$

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

2

Find the derivative f'(x) using the general exponential rule and the chain rule. $f(x) = 4 \cdot 8^{\frac{3}{2}\pi x}$

A $f'(x) = 6\pi \cdot 8^{\frac{3}{2}\pi x} \ln 8$

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

C $f'(x) = 6\pi \cdot 8^{\frac{3}{2}\pi x}$

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

3

Find the derivative f'(x) using the general exponential rule and the chain rule. $f(x) = 3 \cdot 6^{3x}$

A $f'(x) = 9 \cdot 6^{3x} \ln 6$

B $f'(x) = 3 \cdot 6^{3x} \ln 6 \cdot (3x)$

C $f'(x) = 3 \cdot 6^{3x} \ln 6$

D $f'(x) = 9 \cdot 6^{3x}$

4

Find the derivative f'(x) using the general exponential rule and the chain rule. $f(x) = 4 \cdot 5^{3x}$

A $f'(x) = 12 \cdot 5^{3x}$

B $f'(x) = 12 \cdot 5^{3x} \ln 5$

C $f'(x) = 4 \cdot 5^{3x} \ln 5$

D $f'(x) = 4 \cdot 5^{3x} \ln 5 \cdot (3x)$

5

Find the derivative f'(x) using the general exponential rule and the chain rule. $f(x) = 4 \cdot 2^{4x}$

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

B $f'(x) = 16 \cdot 2^{4x}$

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

D $f'(x) = 16 \cdot 2^{4x} \ln 2$

6

Find the derivative f'(x) using the general exponential rule and the chain rule. $f(x) = 2 \cdot 9^{\frac{3}{2}\pi x}$

A $f'(x) = 3\pi \cdot 9^{\frac{3}{2}\pi x} \ln 9$

B $f'(x) = 2 \cdot 9^{\frac{3}{2}\pi x} \ln 9$

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

D $f'(x) = 2 \cdot 9^{\frac{3}{2}\pi x} \ln 9 \cdot (\frac{3}{2}\pi x)$

7

Find the derivative f'(x) using the general exponential rule and the chain rule. $f(x) = 8^{3x}$

A $f'(x) = 3 \cdot 8^{3x} \ln 8$

B $f'(x) = 8^{3x} \ln 8$

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

D $f'(x) = 3 \cdot 8^{3x}$

8

Find the derivative f'(x) using the general exponential rule and the chain rule. $f(x) = 3 \cdot 8^{2x}$

A $f'(x) = 6 \cdot 8^{2x}$

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

C $f'(x) = 3 \cdot 8^{2x} \ln 8$

D $f'(x) = 6 \cdot 8^{2x} \ln 8$