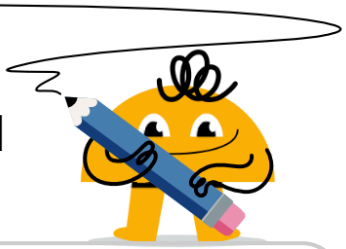
Name



Derivative Rules - General Exponential Exponent Binomial (with Rule) to Derivative

1

Find the derivative f'(x) using the general exponential rule and the chain rule.

$$\frac{d}{dx}a^u = a^u \ln a \cdot \frac{du}{dx}$$

$$f(x) = 4^{x^3-3x}$$

A $f(x) = 4^{x^3-3x} \ln 4 \cdot (x^3 - 3x)$

B $f(x) = 4^{x^3-3x} \cdot (3x^2 - 3)$

C $f(x) = 4^{x^3-3x} \ln 4 \cdot (3x^2 - 3)$

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

2

Find the derivative f'(x) using the general exponential rule and the chain rule.

$$\frac{d}{dx}a^u = a^u \ln a \cdot \frac{du}{dx}$$

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

A $f(x) = 5 \cdot 3^{2x^2-2x} \ln 3 \cdot (4x - 2)$

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

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

D $f(x) = 5 \cdot 3^{2x^2-2x} \cdot (4x - 2)$

3

Find the derivative f'(x) using the general exponential rule and the chain rule.

$$\frac{d}{dx}a^u = a^u \ln a \cdot \frac{du}{dx}$$

$$f(x) = 5 \cdot 7^{3x^2-2x}$$

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

B $f(x) = 5 \cdot 7^{3x^2-2x} \ln 7 \cdot (6x - 2)$

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

D $f(x) = 5 \cdot 7^{3x^2-2x} \cdot (6x - 2)$

4

Find the derivative f'(x) using the general exponential rule and the chain rule.

$$\frac{d}{dx}a^u = a^u \ln a \cdot \frac{du}{dx}$$

$$f(x) = 5 \cdot 6^{x^3-2x}$$

A $f(x) = 5 \cdot 6^{x^3-2x} \cdot (3x^2 - 2)$

B $f'(x) = 5 \cdot 6^{x^3-2x} \ln 6$

C $f(x) = 5 \cdot 6^{x^3-2x} \ln 6 \cdot (3x^2 - 2)$

D $f(x) = 5 \cdot 6^{x^3-2x} \ln 6 \cdot (x^3 - 2x)$

5

Find the derivative f'(x) using the general exponential rule and the chain rule.

$$\frac{d}{dx}a^u = a^u \ln a \cdot \frac{du}{dx}$$

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

A $f(x) = 3 \cdot 2^{2x^3-3x^2} \cdot (6x^2 - 6x)$

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

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

D $f(x) = 3 \cdot 2^{2x^3-3x^2} \ln 2 \cdot (6x^2 - 6x)$

6

Find the derivative f'(x) using the general exponential rule and the chain rule.

$$\frac{d}{dx}a^u = a^u \ln a \cdot \frac{du}{dx}$$

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

A $f(x) = 5^{x^2-x} \ln 5 \cdot (2x - 1)$

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

C $f'(x) = 5^{x^2-x} \cdot (2x - 1)$

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

7

Find the derivative f'(x) using the general exponential rule and the chain rule.

$$\frac{d}{dx}a^u = a^u \ln a \cdot \frac{du}{dx}$$

$$f(x) = 6^{2x^4-3x}$$

A $f(x) = 6^{2x^4-3x} \ln 6 \cdot (2x^4 - 3x)$

B $f(x) = 6^{2x^4-3x} \cdot (8x^3 - 3)$

C $f(x) = 6^{2x^4-3x} \ln 6 \cdot (8x^3 - 3)$

D $f'(x) = 6^{2x^4-3x} \ln 6$

8

Find the derivative f'(x) using the general exponential rule and the chain rule.

$$\frac{d}{dx}a^u = a^u \ln a \cdot \frac{du}{dx}$$

$$f(x) = 3 \cdot 9^{x^4-2x}$$

A $f(x) = 3 \cdot 9^{x^4-2x} \cdot (4x^3 - 2)$

B $f'(x) = 3 \cdot 9^{x^4-2x} \ln 9$

C $f(x) = 3 \cdot 9^{x^4-2x} \ln 9 \cdot (4x^3 - 2)$

D $f(x) = 3 \cdot 9^{x^4-2x} \ln 9 \cdot (x^4 - 2x)$