Name

Derivative Rules - Natural Exponential Exponent with Power (with Rule) to Derivative

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

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

$$f(x) = 4e^{x^{\frac{1}{2}}}$$

A	$f'(x) = 4e^{x^{\frac{1}{2}}} \cdot \frac{1}{2}x^{-\frac{1}{2}}$	B	$f'(x) = 4e^{x^{\frac{1}{2}}} \cdot (x^{\frac{1}{2}})$
C	$f'(x) = 4(x^{\frac{1}{2}})e^{x^{\frac{1}{2}}-1}$	D	$f'(x) = 4e^{x^{\frac{1}{2}}}$

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

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

$$f(x) = 5e^{x^{-\frac{1}{2}}}$$

A	$f'(x) = 5e^{x^{-\frac{1}{2}}} \cdot (x^{-\frac{1}{2}})$	B	$f'(x) = 5(x^{-\frac{1}{2}})e^{x^{-\frac{1}{2}}-1}$
C	$f'(x) = 5e^{x^{-\frac{1}{2}}} \cdot \left(-\frac{1}{2}x^{-\frac{3}{2}}\right)$	D	$f'(x) = 5e^{x^{-\frac{1}{2}}}$

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

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

$$f(x) = 2e^{x^{\frac{1}{2}}}$$

A	$f'(x) = 2e^{x^{\frac{1}{2}}}$	B	$f'(x) = 2e^{x^{\frac{1}{2}}} \cdot (x^{\frac{1}{2}})$
C	$f'(x) = 2e^{x^{\frac{1}{2}}} \cdot \frac{1}{2}x^{-\frac{1}{2}}$	D	$f'(x) = 2(x^{\frac{1}{2}})e^{x^{\frac{1}{2}}-1}$

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

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

$$f(x) = 5e^{x^{\frac{3}{2}}}$$

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

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

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

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

A	$f'(x) = 2e^{x^4}$	B	$f'(x) = 2(x^4)e^{x^4-1}$
C	$f'(x) = 2e^{x^4} \cdot (x^4)$	D	$f'(x) = 2e^{x^4} \cdot 4x^3$

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

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

$$f(x) = e^{x^4}$$

A	$f'(x) = (x^4)e^{x^4-1}$	B	$f'(x) = e^{x^4} \cdot 4x^3$
C	$f'(x) = e^{x^4} \cdot (x^4)$	D	$f'(x) = e^{x^4}$

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

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

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

A	$f'(x) = 2e^{x^3}$	B	$f'(x) = 2e^{x^3} \cdot (x^3)$
C	$f'(x) = 2e^{x^3} \cdot 3x^2$	D	$f'(x) = 2(x^3)e^{x^3-1}$

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

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

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

A	$f'(x) = e^{x^{\frac{3}{2}}} \cdot \frac{3}{2}x^{\frac{1}{2}}$	B	$f'(x) = e^{x^{\frac{3}{2}}} \cdot (x^{\frac{3}{2}})$
C	$f'(x) = (x^{\frac{3}{2}})e^{x^{\frac{3}{2}}-1}$	D	$f'(x) = e^{x^{\frac{3}{2}}}$