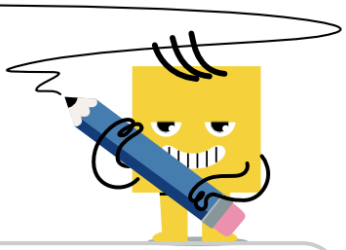
Name



Derivative Rules - Chain Rule Positive Fractional Powers (with Rule) to Derivative

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = (-3x^2 - 5)^{\frac{2}{3}}$$

A	$f'(x) = \frac{2}{3}(-3x^2-5)^{-\frac{1}{3}}$	B	$f'(x) = \frac{2}{3}(-3x^2-5)^{-\frac{1}{3}}(-6x)$
C	$f'(x) = (-3x^2-5)^{-\frac{1}{3}}(-6x)$	D	$f'(x) = \frac{2}{3}(-3x^2-5)^{\frac{2}{3}}(-6x)$

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = (3x + 5)^{\frac{4}{3}}$$

A	$f'(x) = \frac{4}{3}(3x+5)^{\frac{1}{3}}$	B	$f'(x) = 4(3x+5)^{\frac{1}{3}}$
C	$f'(x) = 4(3x+5)^{\frac{4}{3}}$	D	$f'(x) = 3(3x+5)^{\frac{1}{3}}$

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = (2x^2 - 4)^{\frac{3}{2}}$$

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

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = (3x^2 - 3)^{\frac{3}{2}}$$

A	$f'(x) = (3x^2-3)^{\frac{1}{2}}(6x)$	B	$f'(x) = \frac{3}{2}(3x^2-3)^{\frac{3}{2}}(6x)$
C	$f'(x) = \frac{3}{2}(3x^2-3)^{\frac{1}{2}}(6x)$	D	$f'(x) = \frac{3}{2}(3x^2-3)^{\frac{1}{2}}$

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = (2x + 7)^{\frac{1}{2}}$$

A	$f'(x) = 2(2x+7)^{-\frac{1}{2}}$	B	$f'(x) = (2x+7)^{-\frac{1}{2}}$
C	$f'(x) = (2x+7)^{\frac{1}{2}}$	D	$f'(x) = \frac{1}{2}(2x+7)^{-\frac{1}{2}}$

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = (3x - 4)^{\frac{2}{3}}$$

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

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = (3x + 3)^{\frac{4}{3}}$$

A	$f'(x) = 3(3x+3)^{\frac{1}{3}}$	B	$f'(x) = 4(3x+3)^{\frac{1}{3}}$
C	$f'(x) = \frac{4}{3}(3x+3)^{\frac{1}{3}}$	D	$f'(x) = 4(3x+3)^{\frac{4}{3}}$

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = (3x - 6)^{\frac{4}{3}}$$

A	$f'(x) = \frac{4}{3}(3x-6)^{\frac{1}{3}}$	B	$f'(x) = 4(3x-6)^{\frac{1}{3}}$
C	$f'(x) = 4(3x-6)^{\frac{4}{3}}$	D	$f'(x) = 3(3x-6)^{\frac{1}{3}}$