Name

Derivative Rules - Chain Rule Negative Fractional Powers as Radical (with Rule) to Derivative

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = \frac{1}{\sqrt[3]{(-3x-5)^2}}$$

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

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = \frac{1}{\sqrt{(2x+3)}}$$

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

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = \frac{1}{\sqrt{(3x-2)}}$$

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

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = \frac{1}{\sqrt{(3x^2+5)}}$$

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

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = \frac{1}{\sqrt[3]{(2x+4)^2}}$$

A	$f'(x) = -\frac{4}{3}(2x+4)^{-\frac{5}{3}}$	B	$f'(x) = -\frac{4}{3}(2x+4)^{-\frac{2}{3}}$
C	$f'(x) = 2(2x+4)^{-\frac{5}{3}}$	D	$f'(x) = -\frac{2}{3}(2x+4)^{-\frac{5}{3}}$

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = \frac{1}{\sqrt{(-x+5)}}$$

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

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = \frac{1}{\sqrt{(2x+3)^3}}$$

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

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

$$\text{if } y = f(g(x)),\ y' = f'(g(x)) \cdot g'(x)$$
$$f(x) = \frac{1}{\sqrt{(-2x+6)^3}}$$

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