



Derivative Rules - Chain Rule Positive Fractional Powers to Derivative

1 Find the derivative $f'(x)$ using the chain rule. $f(x) = (3x - 7)^{\frac{3}{2}}$

A $f'(x) = \frac{9}{2}(3x - 7)^{\frac{1}{2}}$

B $f'(x) = \frac{3}{2}(3x - 7)^{\frac{1}{2}}$

C $f'(x) = \frac{9}{2}(3x - 7)^{\frac{3}{2}}$

D $f'(x) = 3(3x - 7)^{\frac{1}{2}}$

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

$$f(x) = (-3x + 5)^{\frac{1}{2}}$$

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

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

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

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

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

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

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

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

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

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

4 Find the derivative $f'(x)$ using the chain rule. $f(x) = (-x + 5)^{\frac{1}{3}}$

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

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

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

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

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

$$f(x) = (-x^2 - 7)^{\frac{4}{3}}$$

A $f'(x) = \frac{4}{3}(-x^2 - 7)^{\frac{1}{3}}(-2x)$

B $f'(x) = \frac{4}{3}(-x^2 - 7)^{\frac{1}{3}}$

C $f'(x) = (-x^2 - 7)^{\frac{1}{3}}(-2x)$

D $f'(x) = \frac{4}{3}(-x^2 - 7)^{\frac{1}{3}}(-2x)$

6 Find the derivative $f'(x)$ using the chain rule. $f(x) = (2x - 4)^{\frac{1}{3}}$

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

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

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

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

7 Find the derivative $f'(x)$ using the chain rule. $f(x) = (-x + 7)^{\frac{1}{2}}$

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

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

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

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

8 Find the derivative $f'(x)$ using the chain rule. $f(x) = (3x - 7)^{\frac{1}{2}}$

A $f'(x) = \frac{3}{2}(3x - 7)^{-\frac{1}{2}}$

B $f'(x) = \frac{1}{2}(3x - 7)^{-\frac{1}{2}}$

C $f'(x) = \frac{3}{2}(3x - 7)^{\frac{1}{2}}$

D $f'(x) = 3(3x - 7)^{-\frac{1}{2}}$