



Basic Derivatives - Positive Fractional Power with Coefficient to Derivative

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

$$f(x) = 9x^{\frac{5}{2}}$$

A $f'(x) = \frac{45}{2}x^{\frac{3}{2}}$

B $f'(x) = 9x^{\frac{3}{2}}$

C $f'(x) = \frac{45}{2}x^{\frac{7}{2}}$

D $f'(x) = \frac{45}{2}x^{\frac{9}{2}}$

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

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

A $f'(x) = 5x^{\frac{7}{2}}$

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

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

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

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

$$f(x) = 7x^{\frac{5}{2}}$$

A $f'(x) = \frac{35}{2}x^{\frac{7}{2}}$

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

C $f'(x) = \frac{35}{2}x^{\frac{5}{2}}$

D $f'(x) = \frac{35}{2}x^{\frac{9}{2}}$

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

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

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

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

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

D $f'(x) = -9x^{\frac{5}{2}}$

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

$$f(x) = -9x^{\frac{1}{3}}$$

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

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

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

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

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

$$f(x) = 8x^{\frac{5}{2}}$$

A $f'(x) = 20x^{\frac{7}{2}}$

B $f'(x) = 8x^{\frac{3}{2}}$

C $f'(x) = 20x^{\frac{5}{2}}$

D $f'(x) = 20x^{\frac{3}{2}}$

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

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

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

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

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

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

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

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

A $f'(x) = \frac{14}{3}x^{-\frac{1}{3}}$

B $f'(x) = \frac{14}{3}x^{\frac{2}{3}}$

C $f'(x) = \frac{14}{3}x^{\frac{5}{3}}$

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