



Basic Derivatives - Positive Fractional Power with Coefficient as Radical (with Rule) to Derivative

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

$$\text{if } f(x) = a x^n, f'(x) = a n x^{n-1}$$

$$f(x) = -2\sqrt[3]{x^5}$$

A $f'(x) = -\frac{10}{3}x^{\frac{5}{3}}$

B $f'(x) = -\frac{10}{3}x^{\frac{5}{3}}$

C $f'(x) = -\frac{10}{3}x^{\frac{5}{3}}$

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

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

$$\text{if } f(x) = a x^n, f'(x) = a n x^{n-1}$$

$$f(x) = -7\sqrt[3]{x^4}$$

A $f'(x) = -\frac{28}{3}x^{\frac{1}{3}}$

B $f'(x) = -\frac{28}{3}x^{\frac{1}{3}}$

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

D $f'(x) = -\frac{28}{3}x^{\frac{4}{3}}$

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

$$\text{if } f(x) = a x^n, f'(x) = a n x^{n-1}$$

$$f(x) = -7\sqrt[3]{x}$$

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

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

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

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

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

$$\text{if } f(x) = a x^n, f'(x) = a n x^{n-1}$$

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

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

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

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

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

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

$$\text{if } f(x) = a x^n, f'(x) = a n x^{n-1}$$

$$f(x) = 8\sqrt[3]{x}$$

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

B $f'(x) = \frac{8}{3}x^{\frac{1}{3}}$

C $f'(x) = \frac{8}{3}x^{\frac{4}{3}}$

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

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

$$\text{if } f(x) = a x^n, f'(x) = a n x^{n-1}$$

$$f(x) = 7\sqrt{x}$$

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

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

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

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

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

$$\text{if } f(x) = a x^n, f'(x) = a n x^{n-1}$$

$$f(x) = -3\sqrt{x}$$

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

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

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

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

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

$$\text{if } f(x) = a x^n, f'(x) = a n x^{n-1}$$

$$f(x) = 6\sqrt{x^3}$$

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

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

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

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