



Basic Derivatives - Negative Fractional Power as Radical (with Rule) to

Derivative

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

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

$$f(x) = \frac{1}{\sqrt[3]{x}}$$

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

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

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

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

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

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

$$f(x) = \frac{1}{\sqrt[3]{x^2}}$$

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

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

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

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

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

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

$$f(x) = \frac{1}{\sqrt{x}}$$

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

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

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

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

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

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

$$f(x) = \frac{1}{\sqrt[3]{x^4}}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

$$f(x) = \frac{1}{\sqrt{x^5}}$$

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

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

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

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

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

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

$$f(x) = \frac{1}{\sqrt[3]{x^5}}$$

A $f'(x) = -\frac{5}{3}x^{-\frac{8}{3}}$

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

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

D $f'(x) = -\frac{5}{3}x^{-\frac{8}{3}}$