



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

Derivative

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

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

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

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

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

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

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

A	$f'(x) = \frac{4}{3}x^{\frac{7}{3}}$	B	$f'(x) = \frac{4}{3}x^{\frac{4}{3}}$
C	$f'(x) = \frac{4}{3}x^{\frac{1}{3}}$	D	$f'(x) = x^{\frac{1}{3}}$

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

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

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

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

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

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

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

A	$f'(x) = \frac{5}{3}x^{\frac{2}{3}}$	B	$f'(x) = \frac{5}{3}x^{\frac{10}{3}}$
C	$f'(x) = x^{\frac{2}{3}}$	D	$f'(x) = \frac{5}{3}x^{\frac{5}{3}}$

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

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

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

A	$f'(x) = \frac{5}{2}x^{\frac{5}{2}}$	B	$f'(x) = \frac{5}{2}x^{\frac{3}{2}}$
C	$f'(x) = \frac{5}{2}x^{\frac{7}{2}}$	D	$f'(x) = x^{\frac{3}{2}}$

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

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

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

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

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

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

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

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