



Basic Derivatives - Negative Fractional Power (with Rule) to Derivative

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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