



Basic Derivatives - Negative Fractional Power with Coefficient as Radical to

Derivative

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

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

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|--------------------------------|--------------------------------|
| A $f'(x) = -8x^{-\frac{7}{2}}$ | B $f'(x) = 20x^{-\frac{5}{2}}$ |
| C $f'(x) = 20x^{-\frac{3}{2}}$ | D $f'(x) = 20x^{-\frac{7}{2}}$ |

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

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

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

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

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

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

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

$$f(x) = \frac{8}{\sqrt[3]{x^4}}$$

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|---|---|
| A $f'(x) = 8x^{-\frac{7}{3}}$ | B $f'(x) = -\frac{32}{3}x^{-\frac{4}{3}}$ |
| C $f'(x) = -\frac{32}{3}x^{-\frac{7}{3}}$ | D $f'(x) = -\frac{32}{3}x^{-\frac{1}{3}}$ |

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

$$f(x) = \frac{8}{\sqrt{x}}$$

- | | |
|-------------------------------|--------------------------------|
| A $f'(x) = -4x^{\frac{1}{2}}$ | B $f'(x) = -4x^{-\frac{1}{2}}$ |
| C $f'(x) = 8x^{-\frac{3}{2}}$ | D $f'(x) = -4x^{-\frac{3}{2}}$ |

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

$$f(x) = \frac{4}{\sqrt{x^5}}$$

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|---------------------------------|---------------------------------|
| A $f'(x) = -10x^{-\frac{7}{2}}$ | B $f'(x) = 4x^{-\frac{7}{2}}$ |
| C $f'(x) = -10x^{-\frac{5}{2}}$ | D $f'(x) = -10x^{-\frac{3}{2}}$ |

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

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

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|---|---|
| A $f'(x) = \frac{9}{2}x^{-\frac{1}{2}}$ | B $f'(x) = \frac{9}{2}x^{-\frac{5}{2}}$ |
| C $f'(x) = \frac{9}{2}x^{-\frac{3}{2}}$ | D $f'(x) = -3x^{-\frac{5}{2}}$ |

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

$$f(x) = \frac{6}{\sqrt{x^5}}$$

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|---------------------------------|---------------------------------|
| A $f'(x) = -15x^{-\frac{5}{2}}$ | B $f'(x) = 6x^{-\frac{7}{2}}$ |
| C $f'(x) = -15x^{-\frac{3}{2}}$ | D $f'(x) = -15x^{-\frac{7}{2}}$ |