



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

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = -5x^{-\frac{1}{2}}$

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

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = 2x^{-\frac{5}{3}}$

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|---|---|
| A $f'(x) = 2x^{-\frac{8}{3}}$ | B $f'(x) = -\frac{10}{3}x^{-\frac{8}{3}}$ |
| C $f'(x) = -\frac{10}{3}x^{-\frac{5}{3}}$ | D $f'(x) = -\frac{10}{3}x^{-\frac{2}{3}}$ |

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = 2x^{-\frac{3}{2}}$

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

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = 5x^{-\frac{1}{2}}$

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

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = 5x^{-\frac{3}{2}}$

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

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = 7x^{-\frac{5}{3}}$

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|---|---|
| A $f'(x) = -\frac{35}{3}x^{-\frac{8}{3}}$ | B $f'(x) = -\frac{35}{3}x^{-\frac{2}{3}}$ |
| C $f'(x) = 7x^{-\frac{8}{3}}$ | D $f'(x) = -\frac{35}{3}x^{-\frac{8}{3}}$ |

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = -2x^{-\frac{2}{3}}$

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|---|---|
| A $f'(x) = \frac{4}{3}x^{-\frac{2}{3}}$ | B $f'(x) = \frac{4}{3}x^{\frac{1}{3}}$ |
| C $f'(x) = -2x^{-\frac{5}{3}}$ | D $f'(x) = \frac{4}{3}x^{-\frac{5}{3}}$ |

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = 9x^{-\frac{4}{3}}$

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|---------------------------------|---------------------------------|
| A $f'(x) = 9x^{-\frac{7}{3}}$ | B $f'(x) = -12x^{-\frac{4}{3}}$ |
| C $f'(x) = -12x^{-\frac{7}{3}}$ | D $f'(x) = -12x^{-\frac{1}{3}}$ |