



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

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

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

A $f'(x) = 12x^{\frac{1}{3}}$

B $f'(x) = 9x^{\frac{1}{3}}$

C $f'(x) = 12x^{\frac{7}{3}}$

D $f'(x) = 12x^{\frac{4}{3}}$

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = -8x^{\frac{4}{3}}$

A $f'(x) = -\frac{32}{3}x^{\frac{1}{3}}$

B $f'(x) = -\frac{32}{3}x^{\frac{7}{3}}$

C $f'(x) = -8x^{\frac{1}{3}}$

D $f'(x) = -\frac{32}{3}x^{\frac{1}{3}}$

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = -6x^{\frac{5}{2}}$

A $f'(x) = -15x^{\frac{3}{2}}$

B $f'(x) = -15x^{\frac{7}{2}}$

C $f'(x) = -15x^{\frac{5}{2}}$

D $f'(x) = -6x^{\frac{3}{2}}$

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

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

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

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

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

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

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = 4x^{\frac{1}{2}}$

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

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

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

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

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

if $f(x) = ax^n$, $f'(x) = anx^{n-1}$
 $f(x) = -8x^{\frac{1}{2}}$

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

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

C $f'(x) = -8x^{-\frac{1}{2}}$

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

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

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

A $f'(x) = \frac{35}{3}x^{\frac{2}{3}}$

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

C $f'(x) = \frac{35}{3}x^{\frac{8}{3}}$

D $f'(x) = \frac{35}{3}x^{\frac{2}{3}}$

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

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

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

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

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

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