



Derivative Rules - Sum Rule Positive Fractional Powers as Radical (with Rule)

to Derivative

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$
 $f(x) = -5\sqrt{x^3} - 2x^3 + 3x$

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

B $f'(x) = -\frac{15}{2}x^{\frac{1}{2}} - 6x^2 + 3$

C $f'(x) = -\frac{15}{2}x^{\frac{3}{2}} - 6x^3 + 3x$

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$
 $f(x) = -5\sqrt{x} + 2x^3 - 2$

A $f'(x) = -\frac{5}{2}x^{-\frac{1}{2}} + 6x^2 - 2$

B $f'(x) = -5x^{-\frac{1}{2}} + 2x^2$

C $f'(x) = -\frac{5}{2}x^{\frac{1}{2}} + 6x^3$

D $f'(x) = -\frac{5}{2}x^{-\frac{1}{2}} + 6x^2$

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$
 $f(x) = 3\sqrt{x} - 5x^2$

A $f'(x) = \frac{3}{2}x^{\frac{1}{2}} - 10x^2$

B $f'(x) = \frac{3}{2}x^{-\frac{1}{2}} - 10x$

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

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$
 $f(x) = 5\sqrt{x} + 2x^3 - 3$

A $f'(x) = \frac{5}{2}x^{-\frac{1}{2}} + 6x^2$

B $f'(x) = \frac{5}{2}x^{-\frac{1}{2}} + 6x^2 - 3$

C $f'(x) = 5x^{-\frac{1}{2}} + 2x^2$

D $f'(x) = \frac{5}{2}x^{\frac{1}{2}} + 6x^3$

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$
 $f(x) = 4\sqrt[3]{x} - 3x^3 + 4x^2$

A $f'(x) = \frac{4}{3}x^{-\frac{2}{3}} - 9x^2 + 8x$

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

C $f'(x) = \frac{4}{3}x^{\frac{1}{3}} - 9x^3 + 8x^2$

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$
 $f(x) = 3\sqrt{x} + 3x^3$

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

B $f'(x) = \frac{3}{2}x^{\frac{1}{2}} + 9x^3$

C $f'(x) = \frac{3}{2}x^{-\frac{1}{2}} + 9x^2$

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$
 $f(x) = 4\sqrt{x} + 5x + 4x^3$

A $f'(x) = 2x^{-\frac{1}{2}} + 5 + 12x^2$

B $f'(x) = 4x^{-\frac{1}{2}} + 5 + 4x^2$

C $f'(x) = 2x^{\frac{1}{2}} + 5x + 12x^3$

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$
 $f(x) = -3\sqrt{x^3} - 5x^2$

A $f'(x) = -\frac{9}{2}x^{\frac{1}{2}} - 10x$

B $f'(x) = -\frac{9}{2}x^{\frac{3}{2}} - 10x^2$

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