

**Differentiate sums and differences****1**Find the derivative $f'(x)$.

if $f(x) = c$, $f'(x) = 0$

[12pt] $f(x) = 14$

A

$f'(x) = 14$

B

$f'(x) = 1$

C

$f'(x) = 14x$

D

$f'(x) = 0$

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$

[12pt] $f(x) = 3x^2 + 4x - 2x^3$

A

$f'(x) = 6x + 4 - 6x^2$

B

$f'(x) = 6x^2 + 4x - 6x^3$

C

$f'(x) = 3x + 4 - 2x^2$

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$

[12pt] $f(x) = -2x^{-3} - 5x^3 - 4x^2$

A

$f'(x) = 6x^{-4} - 15x^2 - 8x$

B

$f'(x) = 6x^{-3} - 15x^3 - 8x^2$

C

$f'(x) = -2x^{-4} - 5x^2 - 4x$

2Find the derivative $f'(x)$.

$f(x) = \frac{4}{8}$

A

$f'(x) = \frac{4}{8}$

B

$f'(x) = \frac{4}{8}x$

C

$f'(x) = 0$

D

$f'(x) = 1$

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

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

[12pt] $f(x) = x^3$

A

$f'(x) = 3x^2$

B

$f'(x) = 3x^4$

C

$f'(x) = 3x^3$

D

$f'(x) = x^2$

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

if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$

[12pt] $f(x) = 5x^{\frac{4}{3}} - 4$

A

$f'(x) = \frac{20}{3}x^{\frac{1}{3}} - 4$

B

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

C

$f'(x) = \frac{20}{3}x^{\frac{1}{3}}$

D

$f'(x) = \frac{20}{3}x^{\frac{4}{3}}$

**Differentiate sums and differences****7**Find the derivative $f'(x)$ using the sum rule.if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$

$$[12pt] f(x) = \frac{3}{x^3} + 4$$

A

$$f'(x) = -9x^{-3}$$

B

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

C

$$f'(x) = -9x^{-4} + 4$$

D

$$f'(x) = -9x^{-4}$$

8Find the derivative $f'(x)$ using the sum rule.if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$

$$[12pt] f(x) = 5\sqrt{x} - 4$$

A

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

B

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

C

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

D

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

9Find the derivative $f'(x)$ using the sum rule.if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$

$$[12pt] f(x) = -2x^{-\frac{1}{2}} + 5x^2$$

A

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

B

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

C

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

11Find the derivative $f'(x)$ using the sum rule.

$$f(x) = 2x^3 - 4x^2 + 4x$$

A

$$f'(x) = 6x^3 - 8x^2 + 4x$$

B

$$f'(x) = 6x^2 - 8x + 4$$

C

$$f'(x) = 2x^2 - 4x + 4$$

10Find the derivative $f'(x)$ using the sum rule.if $h(x) = f(x) + g(x)$, $h'(x) = f'(x) + g'(x)$

$$[12pt] f(x) = -\frac{5}{\sqrt{x^3}} - 4x + 5$$

A

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

B

$$f'(x) = \frac{15}{2}x^{-\frac{5}{2}} - 4 + 5$$

C

$$f'(x) = \frac{15}{2}x^{-\frac{3}{2}} - 4x$$

D

$$f'(x) = \frac{15}{2}x^{-\frac{5}{2}} - 4$$

**Differentiate sums and differences****12**Find the derivative $f'(x)$ using the sum rule.

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

A $f'(x) = -5x^{-3} - 5 - 2x$

B $f'(x) = 10x^{-3} - 5 - 4x$

C $f'(x) = 10x^{-2} - 5x - 4x^2$

14Find the derivative $f'(x)$ using the sum rule.

$$f(x) = -\frac{4}{\sqrt{x}} + 2$$

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

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

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

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

16Find the derivative $f'(x)$ using the sum rule.

$$f(x) = 5\sqrt[3]{x^4} - 2$$

A $f'(x) = \frac{20}{3}x^{\frac{4}{3}}$

B $f'(x) = \frac{20}{3}x^{\frac{1}{3}}$

C $f'(x) = \frac{20}{3}x^{\frac{1}{3}} - 2$

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

13Find the derivative $f'(x)$ using the sum rule.

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

A $f'(x) = 6x^{-4}$

B $f'(x) = 6x^{-4} + 4$

C $f'(x) = -2x^{-4}$

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

15Find the derivative $f'(x)$ using the sum rule.

$$f(x) = 5x^{-\frac{2}{3}} - 4x^2 + 3x^3$$

A $f'(x) = -\frac{10}{3}x^{-\frac{5}{3}} - 8x + 9x^2$

B $f'(x) = -\frac{10}{3}x^{-\frac{2}{3}} - 8x^2 + 9x^3$

C $f'(x) = 5x^{-\frac{5}{3}} - 4x + 3x^2$