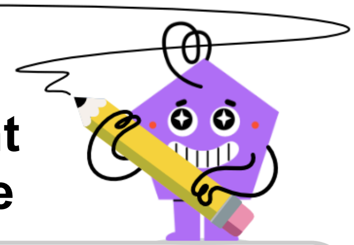
Name

Derivative Rules - Multi Chain Quotient Trigonometric (with Rule) to Derivative



1

Find the derivative f'(x) using the quotient, chain, and trigonometric rules.

if $h(x) = \frac{f(x)}{g(x)}$, $h'(x) = \frac{f'(x)\,g(x) - f(x)\,g'(x)}{[g(x)]^2}$

$$f(x) = \frac{\frac{1}{(2x^2+3)}}{4\cos(x)}$$

A $f'(x) = \frac{-(2x^2+3)^{-2}(4x)(4\cos(x)) - \frac{1}{(2x^2+3)}(-4\sin(x))}{4\cos(x)}$

B $f'(x) = \frac{-(2x^2+3)^{-2}(4x)(4\cos(x)) - \frac{1}{(2x^2+3)}(-4\sin(x))}{(4\cos(x))^2}$

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

D $f'(x) = \frac{\frac{1}{(2x^2+3)}(-4\sin(x)) - -(2x^2+3)^{-2}(4x)(4\cos(x))}{(4\cos(x))^2}$

2

Find the derivative f'(x) using the quotient, chain, and trigonometric rules.

if $h(x) = \frac{f(x)}{g(x)}$, $h'(x) = \frac{f'(x)\,g(x) - f(x)\,g'(x)}{[g(x)]^2}$

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

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

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

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

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

3

Find the derivative f'(x) using the quotient, chain, and trigonometric rules.

$$\frac{d}{dx}\sin(x) = \cos(x)$$

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

A $f'(x) = \frac{\frac{1}{(x-2)^2}(4\cos(x)) - -2(x-2)^{-3}(4\sin(x))}{(4\sin(x))^2}$

B $f'(x) = \frac{-2(x-2)^{-3}(4\sin(x)) - \frac{1}{(x-2)^2}(4\cos(x))}{4\sin(x)}$

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

D $f'(x) = \frac{-2(x-2)^{-3}(4\sin(x)) - \frac{1}{(x-2)^2}(4\cos(x))}{(4\sin(x))^2}$

4

Find the derivative f'(x) using the quotient, chain, and trigonometric rules.

if $y = f(g(x))$, $y' = f'(g(x)) \cdot g'(x)$

$$f(x) = \frac{\frac{1}{(3x-5)}}{\cos(x)}$$

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

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

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

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

5

Find the derivative f'(x) using the quotient, chain, and trigonometric rules.

if $y = f(g(x))$, $y' = f'(g(x)) \cdot g'(x)$

$$f(x) = \frac{\frac{1}{(3x^2+2)^2}}{4\sin(x)}$$

A $f'(x) = \frac{-2(3x^2+2)^{-3}(6x)(4\sin(x)) + \frac{1}{(3x^2+2)^2}(4\cos(x))}{(4\sin(x))^2}$

B $f'(x) = \frac{-2(3x^2+2)^{-3}(6x)(4\sin(x)) - \frac{1}{(3x^2+2)^2}(4\cos(x))}{(4\sin(x))^2}$

C $f'(x) = \frac{\frac{1}{(3x^2+2)^2}(4\cos(x)) - -2(3x^2+2)^{-3}(6x)(4\sin(x))}{(4\sin(x))^2}$

D $f'(x) = \frac{-2(3x^2+2)^{-3}(6x)(4\sin(x)) - \frac{1}{(3x^2+2)^2}(4\cos(x))}{4\sin(x)}$

6

Find the derivative f'(x) using the quotient, chain, and trigonometric rules.

if $h(x) = \frac{f(x)}{g(x)}$, $h'(x) = \frac{f'(x)\,g(x) - f(x)\,g'(x)}{[g(x)]^2}$

$$f(x) = \frac{\frac{1}{(3x^2+2)}}{3\cos(x)}$$

A $f'(x) = \frac{\frac{1}{(3x^2+2)}(-3\sin(x)) - -(3x^2+2)^{-2}(6x)(3\cos(x))}{(3\cos(x))^2}$

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

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

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

7

Find the derivative f'(x) using the quotient, chain, and trigonometric rules.

$$\frac{d}{dx}\cos(x) = -\sin(x)$$

$$f(x) = \frac{\frac{1}{(2x-2)^2}}{3\cos(x)}$$

A $f'(x) = \frac{-4(2x-2)^{-3}(3\cos(x)) - \frac{1}{(2x-2)^2}(-3\sin(x))}{(3\cos(x))^2}$

B $f'(x) = \frac{-4(2x-2)^{-3}(3\cos(x)) - \frac{1}{(2x-2)^2}(-3\sin(x))}{3\cos(x)}$

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

D $f'(x) = \frac{\frac{1}{(2x-2)^2}(-3\sin(x)) - -4(2x-2)^{-3}(3\cos(x))}{(3\cos(x))^2}$

8

Find the derivative f'(x) using the quotient, chain, and trigonometric rules.

if $h(x) = \frac{f(x)}{g(x)}$, $h'(x) = \frac{f'(x)\,g(x) - f(x)\,g'(x)}{[g(x)]^2}$

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

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

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

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

D $f'(x) = \frac{\frac{2}{3}(2x-2)^{-\frac{2}{3}}(3\cos(x)) + \sqrt[3]{(2x-2)}(-3\sin(x))}{(3\cos(x))^2}$