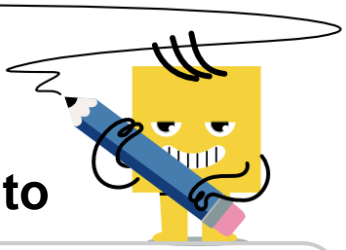
Name

Derivative Rules - Multi Chain General Exponential Trigonometric (with Rule) to Derivative



1

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

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

$f(x) = (2 \cdot 8^x + 4\sin(x))^{\frac{1}{3}}$

A $f'(x) = \frac{1}{3}(2 \cdot 8^x + 4\sin(x))^{-\frac{2}{3}}$

B $f'(x) = (2 \cdot 8^x + 4\sin(x))^{-\frac{2}{3}} \cdot (2 \cdot 8^x \ln 8 + 4\cos(x))$

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

D $f'(x) = \frac{1}{3}(2 \cdot 8^x + 4\sin(x))^{\frac{1}{3}} \cdot (2 \cdot 8^x \ln 8 + 4\cos(x))$

2

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

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

$f(x) = (9^x + \cos(x))^{\frac{1}{3}}$

A $f'(x) = \frac{1}{3}(9^x + \cos(x))^{\frac{1}{3}} \cdot (9^x \ln 9 - \sin(x))$

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

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

D $f'(x) = (9^x + \cos(x))^{-\frac{2}{3}} \cdot (9^x \ln 9 - \sin(x))$

3

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

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

$f(x) = (4 \cdot 7^x + \sin(x))^4$

A $f'(x) = 4(4 \cdot 7^x + \sin(x))^3 \cdot (4 \cdot 7^x \ln 7 + \cos(x))$

B $f'(x) = 4(4 \cdot 7^x + \sin(x))^4 \cdot (4 \cdot 7^x \ln 7 + \cos(x))$

C $f'(x) = (4 \cdot 7^x + \sin(x))^3 \cdot (4 \cdot 7^x \ln 7 + \cos(x))$

D $f'(x) = 4(4 \cdot 7^x + \sin(x))^3$

4

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

$\frac{d}{dx}a^x = a^x \ln a$

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

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

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

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

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

5

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

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

$f(x) = (3 \cdot 5^x + 5\cos(x))^{-2}$

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

B $f'(x) = -2(3 \cdot 5^x + 5\cos(x))^{-2} \cdot (3 \cdot 5^x \ln 5 - 5\sin(x))$

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

D $f'(x) = (3 \cdot 5^x + 5\cos(x))^{-3} \cdot (3 \cdot 5^x \ln 5 - 5\sin(x))$

6

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

$\frac{d}{dx}a^x = a^x \ln a$

$f(x) = (5 \cdot 4^x + \sin(x))^{\frac{1}{3}}$

A $f'(x) = (5 \cdot 4^x + \sin(x))^{-\frac{2}{3}} \cdot (5 \cdot 4^x \ln 4 + \cos(x))$

B $f'(x) = \frac{1}{3}(5 \cdot 4^x + \sin(x))^{-\frac{2}{3}} \cdot (5 \cdot 4^x \ln 4 + \cos(x))$

C $f'(x) = \frac{1}{3}(5 \cdot 4^x + \sin(x))^{\frac{1}{3}} \cdot (5 \cdot 4^x \ln 4 + \cos(x))$

D $f'(x) = \frac{1}{3}(5 \cdot 4^x + \sin(x))^{-\frac{2}{3}}$

7

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

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

$f(x) = (9^x + 4\cos(x))^{\frac{1}{3}}$

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

B $f'(x) = \frac{1}{3}(9^x + 4\cos(x))^{-\frac{2}{3}} \cdot (9^x \ln 9 - 4\sin(x))$

C $f'(x) = \frac{1}{3}(9^x + 4\cos(x))^{\frac{1}{3}} \cdot (9^x \ln 9 - 4\sin(x))$

D $f'(x) = (9^x + 4\cos(x))^{-\frac{2}{3}} \cdot (9^x \ln 9 - 4\sin(x))$

8

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

$\frac{d}{dx}a^x = a^x \ln a$

$f(x) = (6^x + 2\cos(x))^4$

A $f'(x) = 4(6^x + 2\cos(x))^3$

B $f'(x) = 4(6^x + 2\cos(x))^4 \cdot (6^x \ln 6 - 2\sin(x))$

C $f'(x) = (6^x + 2\cos(x))^3 \cdot (6^x \ln 6 - 2\sin(x))$

D $f'(x) = 4(6^x + 2\cos(x))^3 \cdot (6^x \ln 6 - 2\sin(x))$