



Derivative Rules - Quotient Rule Negative Powers to Derivative

1 Find the derivative $f'(x)$ using the quotient rule. $f(x) = \frac{4x^{-3} + 7}{5x^2 - 5}$

A $f'(x) = \frac{(-12x^{-4})(5x^2 - 5) - (4x^{-3} + 7)(10x)}{(5x^2 - 5)^2}$

B $f'(x) = \frac{(4x^{-3} + 7)(10x) - (-12x^{-4})(5x^2 - 5)}{(5x^2 - 5)^2}$

C $f'(x) = \frac{(-12x^{-4})(5x^2 - 5) + (4x^{-3} + 7)(10x)}{(5x^2 - 5)^2}$

D $f'(x) = \frac{(-12x^{-4})(5x^2 - 5) - (4x^{-3} + 7)(10x)}{(5x^2 - 5)}$

2 Find the derivative $f'(x)$ using the quotient rule. $f(x) = \frac{-4x^{-3} + 3}{3x - 5}$

A $f'(x) = \frac{(12x^{-4})(3x - 5) + (-4x^{-3} + 3)(3)}{(3x - 5)^2}$

B $f'(x) = \frac{(12x^{-4})(3x - 5) - (-4x^{-3} + 3)(3)}{(3x - 5)^2}$

C $f'(x) = \frac{(12x^{-4})(3x - 5) - (-4x^{-3} + 3)(3)}{(3x - 5)}$

D $f'(x) = \frac{(-4x^{-3} + 3)(3) - (12x^{-4})(3x - 5)}{(3x - 5)^2}$

3 Find the derivative $f'(x)$ using the quotient rule. $f(x) = \frac{-4x^{-3} + 6}{4x - 5}$

A $f'(x) = \frac{(12x^{-4})(4x - 5) - (-4x^{-3} + 6)(4)}{(4x - 5)}$

B $f'(x) = \frac{(12x^{-4})(4x - 5) - (-4x^{-3} + 6)(4)}{(4x - 5)^2}$

C $f'(x) = \frac{(12x^{-4})(4x - 5) + (-4x^{-3} + 6)(4)}{(4x - 5)^2}$

D $f'(x) = \frac{(-4x^{-3} + 6)(4) - (12x^{-4})(4x - 5)}{(4x - 5)^2}$

4 Find the derivative $f'(x)$ using the quotient rule. $f(x) = \frac{-4x^{-3} + 7}{4x}$

A $f'(x) = \frac{(12x^{-4})(4x) + (-4x^{-3} + 7)(4)}{(4x)^2}$

B $f'(x) = \frac{(12x^{-4})(4x) - (-4x^{-3} + 7)(4)}{(4x)^2}$

C $f'(x) = \frac{(12x^{-4})(4x) - (-4x^{-3} + 7)(4)}{(4x)}$

D $f'(x) = \frac{(-4x^{-3} + 7)(4) - (12x^{-4})(4x)}{(4x)^2}$

5 Find the derivative $f'(x)$ using the quotient rule. $f(x) = \frac{4x^{-1} + 2}{-4x - 6}$

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

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

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

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

6 Find the derivative $f'(x)$ using the quotient rule. $f(x) = \frac{-2x^{-1} + 3}{-4x - 3}$

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

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

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

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

7 Find the derivative $f'(x)$ using the quotient rule. $f(x) = \frac{4x^{-2} + 7}{-2x}$

A $f'(x) = \frac{(-8x^{-3})(-2x) - (4x^{-2} + 7)(-2)}{(-2x)}$

B $f'(x) = \frac{(-8x^{-3})(-2x) + (4x^{-2} + 7)(-2)}{(-2x)^2}$

C $f'(x) = \frac{(4x^{-2} + 7)(-2) - (-8x^{-3})(-2x)}{(-2x)^2}$

D $f'(x) = \frac{(-8x^{-3})(-2x) - (4x^{-2} + 7)(-2)}{(-2x)^2}$

8 Find the derivative $f'(x)$ using the quotient rule. $f(x) = \frac{5x^{-1} - 5}{5x}$

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

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

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

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