

M119 Worksheet 2.3 Product and Quotient Rules and 2nd derivative

Name _____

1) Use the product rule to find the derivative of $f(x) = (4x - 3)(3x^3 - x^2 + 1)$.

2) Use the quotient rule to find the derivative of $f(x) = \frac{2x - 7}{3x - 2}$.

3) Find the derivative of the function. Then write the equation of the line tangent to the graph of $f(x) = \frac{3x^2 - 5}{4x - 5}$ at $x = 0$.

4) Find the second derivative, $\frac{d^2y}{dx^2}$, if $y = 5x^2 + 8x + \frac{2}{x^3}$.

Answer Key

Testname: WORKSHEET 2.3 QUOTIENT, PRODUCT AND 2ND DERIVATIVE

1) $f'(x) = 48x^3 - 39x^2 + 6x + 4$

2) $f'(x) = \frac{17}{(3x - 2)^2}$

3) $f'(x) = \frac{3x^2 - 30x + 20}{(4x - 5)^2}; y = \frac{4}{5}x + 1$

4) $10 + \frac{24}{x^5}$