

Derivatives 1: Power function and Product rules

Name _____

SHORT ANSWER: Show your Steps. Read equation carefully before starting.

1) Find y' if $y = 4x^3 - 6x^2 + 7x - 8$. 1) _____

2) Find y' if $y = 7x^4 - 5x^3 + 4x - 6$. 2) _____

3) Find y' if $y = \frac{7}{3}(9x + 3)$. 3) _____

4) Find y' if $y = \frac{1}{4} - \frac{x}{2}$. 4) _____

5) Find y' if $y = \frac{3x}{5} + \frac{4}{3}$. 5) _____

6) Find y' if $y = \frac{7 - 2x}{5}$. 6) _____

7) Find y' if $y = x^{-2} - \sqrt{x} + x^{-4/7}$. 7) _____

8) Find y' if $y = \frac{1}{2} - \frac{1}{2x}$. 8) _____

9) Find y' if $y = \frac{2}{x^4} + \frac{x^4}{2}$. 9) _____

10) Find y' if $y = \frac{x^4 + 4}{x^2}$. 10) _____

11) Find y' if $y = \frac{x^2 + 2x + 3}{\sqrt{x}}$. 11) _____

12) Find v' if $v = t^{5/7}(t^{2/7} + 3t)$. 12) _____

13) Find $f'(u)$ where $f(u) = \frac{u^5 + u^{11}}{u^3}$. 13) _____

14) Find y' if $y = (x^3 - 10x + 2)(x^2 + 7x + 1)$. 14) _____

Answer Key

Testname: 5701-DERIVATIVES1- UP TO PRODUCT RULE

1) $12x^2 - 12x + 7$

2) $28x^3 - 15x^2 + 4$

3) 21

4) $-\frac{1}{2}$

5) $\frac{3}{5}$

6) $-\frac{2}{5}$

7) $-2x^{-3} - \frac{1}{2\sqrt{x}} - \frac{4}{7}x^{-11/7}$

8) $\frac{1}{2x^2}$

9) $-\frac{8}{x^5} + 2x^3$

10) $2x - 8x^{-3}$

11) $\frac{3}{2}x^{1/2} + x^{-1/2} - \frac{3}{2}x^{-3/2}$

12) $1 + \frac{36}{7}t^{5/7}$

13) $2u + 8u^7$

14) $(x^3 - 10x + 2)(2x + 7) + (x^2 + 7x + 1)(3x^2 - 10) = 5x^4 + 28x^3 - 27x^2 - 136x + 14$