Calculus Worksheet #2 Unit 5 page 1 _____

Use the product rule to find dy/dx for each of the following functions. (Express your answers in factored form.)

1. $y = (2x + 1)^4(3x - 2)^5$ **dy/dx = _____**

2. $y = (5x - 6)^6(3x + 7)^2$ **dy/dx = _____**

3. $y = (x^2 - 1)^3(2x - 3)^3$ **dy/dx = _____**

4. $y = (6x + 5)(x^2 + 9)^5$ **dy/dx = _____**

5. $y = 5x^4(2x - 3)^4$ **dy/dx = _____**

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Use the quotient rule to find dy/dx for each of the following functions.

6. $y = \frac{2x + 3}{3x - 1}$ **dy/dx =**

7. $y = \frac{5x - 3}{2x + 5}$ **dy/dx =**

8. $y = \frac{5x}{2x + 7}$ **dy/dx =**

9. $y = \frac{x^2 + 1}{x^2 - 2}$ **dy/dx =**

10. $y = \frac{x + 2}{x^2 + 1}$ **dy/dx =**