

Name _____ Section _____

NO CALCULATORS OR NOTES ARE ALLOWED.

Find $\frac{dy}{dx}$ in each case. Please do **not** simplify your answers. For example, the derivative of $37x^{46}$ may be written as $(46)37x^{45}$. SHOW DETAILS in the space next to each problem, but you may write your answer directly in the space for the answer if it follows directly from the differentiation algorithms.

1. $y = \frac{2x^7 - 7x^3}{5 \sin(3x)}$

Answer to 1 _____

2. $y = x^3 \sqrt{5 - 3x^6}$

Answer to 2 _____

3. $y = 17^{4x} + \ln(x^3 - 7x^2 + 44)$

Answer to 3 _____

OVER

4. $y = x^3 \arctan(2 - x)$

Answer to 4 _____

5. $y = \cos(x^2)e^{7x}$

Answer to 5 _____

6. Find $\frac{dy}{dx}$ if $x^2y - 4x^3y^6 = 7y + 3$. Express the answer in terms of x and y .

Answer to 6 _____