

Name \_\_\_\_\_ Section \_\_\_\_\_

Find  $\frac{dy}{dx}$  in each case. Please do **not** simplify your answers. For example, you may (and should!) write the derivative of  $37x^{46}$  as  $(46)37x^{45}$ .

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

**Answer**  $17^{4x} \ln(17)4 + \left(\frac{1}{x^3 - 7x^2 + 44}\right) (3x^2 - 7 \cdot 2x + 0)$ .

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

**Answer**  $3x^2 \arctan(2 - x) + x^3 \left(\frac{1}{1 + (2 - x)^2}\right) (-1)$ .

I believe that very little analysis of “how to do this problem” is possible. Please: you should know the Chain Rule, the Product Rule, the derivative of various functions, etc. That’s all.