

## Variable Exercises Answer Sheet

Name \_\_\_\_\_

Use Derive to answer the following questions. Attach a neat copy of your Derive work which “shows” your work.

1) Get Derive to multiply out  $(2 + x)^{43}$ . Find the constant term (the number by itself) \_\_\_\_\_ and the coefficient of  $x^3$  (the number next to the  $x^3$ ) \_\_\_\_\_

2) Let  $f(x) = 2x^5 + 3x^3 - x^2$  and  $g(x) = x^4 - 2x^3 + x + 1$  and find  $f(g(x)) =$  \_\_\_\_\_ and  $g(f(x)) =$  \_\_\_\_\_.

3) Factor  $x^4 + 106x^3 - 673x^2 - 82x + 3360$ .  
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4) Graph the function  $x^3 + 3x^2 + x - 1$  with the window going from  $x = -4$  to  $x = 2$  and going from  $y = -5$  to  $y = 4$  (attach a printout).

5) Graph the rational function  $\frac{-x^3 - x^2 + 10x - 8}{2x - x^2 + 3}$ . (Attach a printout.)

6) Graph the function in 3). Choose a window that nicely captures the graph's form. (Attach a printout.)