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.)