HOMEWORK #3

1. Use the solution and Sensitivity Reports obtained from EXCEL to answer each of the following questions pertaining to the Product-Mix Problem of BlubberMaid (see the data file blubber.xls). If you are unable to use these reports to answer the question, explain why and then obtain the solution by solving an appropriately modified problem. **All questions pertain to the original problem.**
   (a) Which of the four resource constraints are binding? (1 point)
   (b) With the current production plan, for which of the three products can an additional demand of 5% be met? (4 points)
   (c) If you could obtain additional quantities of only one of the three polymers, which one would you recommend? Explain. (5 points)
   (d) Which profit coefficients could double, while keeping all other coefficients fixed, without affecting the optimal production plan? Explain. (5 points)

2. Use the solution and Sensitivity Reports obtained from EXCEL to answer each of the following questions pertaining to the Product-Mix Problem of BlubberMaid. If you are unable to use these reports to answer the question, explain why and then obtain the solution by solving an appropriately modified problem. **All questions pertain to the original problem.**
   (a) The profit from Extendex has just decreased by 20%. What is new production plan and total profit? (5 points)
   (b) The commitment to produce 400 pounds of Resistex has just dropped by 10%. What happens to the optimal profit? Explain. (5 points)
   (c) The company wants to boost its profits to $18,000 by purchasing more of polymer A. How much *additional* polymer A is needed? Explain. (5 points)
   (d) If the demand for Airtex increases by 2%, what is the new optimal production plan? Explain. (5 points)