1. You may recall that at our first class we discussed a data file collected from a graduate survey. At that time we were concerned most with descriptive statistics. The file is **GRADSURVEY**  (attached). An interesting question is whether there are some variables in that data file that can explain or predict anticipated salary in five years. Four potential variables are Graduate GPA, GMAT, Spending, and Number of Jobs.

a) Using only Graduate GPA as a variable, determine the regression model used to predict anticipated salary in 5 years. Even if it is not a “good” model, it is all you have to address the following situation: You interview for a job and your Graduate GPA is 3.85. You receive a job offer that guarantees you a salary of $95,000 in 5 years. Having studied past data, what should you do if your decision is based only on salary?

b) Using all the four variables listed above, carry out the required analysis to see if you can develop a regression model that is significant at the 5% level. Are all independent variables needed in your model ? Interpret your findings.

c) What happens if you add another variable "Expected Salary"? Why does it increase the prediction ability of the model?

2. An auditor for a government agency needs to evaluate payments for doctors’ office visits paid by Medicare in a particular zip code during the month of June. A total of 25,056 visits occurred during June in this area. The auditor selects a sample of 138 visit claims for the audit. It is determined that the average amount of reimbursement was $93.40 and the standard deviation was $34.55. In 12 of the office visits, an incorrect amount of reimbursement was provided. For the 12 office visits in which there was an incorrect reimbursement, the differences between the amount reimbursed and the amount that the auditor determined should have been reimbursed are in the data file **Medicare.**

a) What information would you give the agency if it wants to know the total amount of reimbursement it incurred for this geographic area in June? The agency is satisfied with a maximum error of 5% in any estimates it receives.

b) What information would you give the agency if it wants to know the total difference between the amount reimbursed and the amount the auditor determined should have been reimbursed? Again a maximum 5% error is allowed.