Assignment 5

due Thursday Oct. 9, 2008 at the beginning of the class.

1. Members of a high school language club believe that study of a foreign language improves a student's command of English. From school records, they obtain the scores on an English achievement test given to all seniors. The mean score of seniors who had studied a foreign language for at least two years is much higher than the mean score of seniors who studied no foreign language. The club's advisor says that these data are not good evidence that language study strengthens English skills. Identify the explanatory and response variables in this study. Then give example of lurking variables that may prevent the conclusion that language study improves students' English scores.

2. Refer to the data in exercise 2.98 on page 181. Perform a simple linear regression and answer parts a b c and d of the problem. Also obtain the residuals. Check the residuals for normality. Do the residuals appear to be independent and have constant variance? What plots do you use for this purpose?

3. Solve exercise 2.112 on page 188.

4. Solve exercise 2.108 on page 187.

BONUS (5pt) Explore and solve exercise 2.114 which refers to the case study on the book's CD. The data can be found in the folder EESEE and to access the flash player just double click on the "eesee.html" file. The data used is not on the CD (or at least I was not able to find it), but it is on the accompanying website. For your convenience this assignment contains the data file as well.