Homework (due next week)

1 - Refer to SENIC dataset (from HW1). Fit a regression model to predict length of stay (y) with the following explanatory variables: age, medical school affiliation, average daily census (40 pts)

- Evaluate the model fit / make sure your model is appropriate (check model assumptions).
- Report your results

2- Refer to CH25PR17 dataset. Preliminary research on the production of imitation pearls entailed studying the effect of the number of coats of a special lacquer (factor A –column 2) applied to an opalescent plastic bead used as the base of the pearl on the market value of the pearl (column 1). Four batches of 12 beads (factor B –column 3) were used in the study, and it is desired to also consider their effect on the market value. The three levels of factor A (6, 8, and 10) were fixed in advance, while the four batches can be regarded as a random sample of batches from the bead production process. The market value of each pearl was determined by a panel of experts. (40 pts)

- Build the Hassediagram
- Analyze the data, check for assumptions, interpret the results
- Report your results

3 - A student stated: “Adding a predictor variable to a regression model can never reduce R-sq, so we should include all available predictor variables in the model.” Comment. (20 pts)