# 36-401 Homework #1 REVISED

**Don't include S-plus code in your homework unless specifically instructed to do so. You may include code as an appendix so that the grader can point out the source of any errors.**

Please indicate whether you worked with anyone on these, and all, homework problems in this course.

**DUE THU SEPT 6, 2001. To be graded using the "gave it a good effort" vs "blew it off" grading system.**

- Please do exercises 1, 3, 4, 6 on pp. 8–9 of the "Introduction to Splus" handout. Hand in a single sheet of paper for each exercise (so, four sheets in all).
- Hints and additional directions for these problems:

  1. For this problem, please turn in the splus code (one line) and output (about 12–15 lines), for each of the two t tests requested. Use "help(t.test)" and/or "args(t.test)" to learn what you need to do this problem.
  3. You can use all the arguments listed in help(title) with the plot() command itself, to add add title, subtitle, etc. Any extra's you can add later with the `title` command itself. Do not turn in any Splus code, just the finished plot.
  4. Use help(hist) or args(hist) to find out how to set the number of bars (class intervals).
  6. Turn in a print-out of your function, as well as a printout of the result when you use your function to describe `conc$educat`.

**DUE TUE SEPT 11, 2001:**

1. **10 pts** Create a random vector using "ch_rchisq(40,1)". Plot a histogram, choosing a number of bars that displays the data well. Turn in your plot and the mean and median of the vector.
2. **10 pts** Load the data in the file "widgets.dat". Turn in the list of variable names, the number of rows, and the range (max-min) of each column.
3. **20 pts** Download "cane.dat" and "cane.txt" from the class website. Download the ndhist.q, rwgbox.q, symplot.q, qplot.q, qqn.q, and scatbox.q from the website. Check that you have all of the files using the Unix command "ls".

   Print "cane.txt" or read it with the Unix "more" command. Use read.table() to load the data in the "cane.dat" file into an object named "cane". (Be sure to use the header=T argument, since the first line of the file has the column names.) Check the dim(cane) and names(cane). View columns 6 to 12 for the first 10 cases using "cane[1:10, 6:12]".

   Load each of the functions in the .q files listed above using the source function. Try the first 5 functions on the Sugar variable, e.g. ndhist(cane$Sugar). (Note: the message “Error: getvec: unrecognized mode (comes after the dollar sign.) Also run “scatbox(cane$Sugar,cane$Area)” to compare these variables. Use the “mfrow=” argument of the par() command to create a single graph containing all 6 subgraphs. Print it, being certain to include your name as a subtitle.

Turn in only the printout with the 6 plots on one page along with 1 or 2 sentences per graph describing the most important features revealed by each of the 6 graphs.