USING R COMMANDER FOR ASSIGNMENTS FROM CHAPTERS 2 AND 3

TO FIND PROPORTIONS FOR NORMAL DISTRIBUTIONS:
Distributions → Continuous distributions → Normal distribution → Normal probabilities

A pop-up box will ask you for the value, the mean, and the standard deviation. You do not need to compute the z-score first, just enter the appropriate mean and standard deviation. Alternatively (and more work) you can compute the z-score first, and then use the default mean of 0 and standard deviation of 1. In either case, the answer will appear as a decimal number in the Output Window.

TO CREATE HISTOGRAMS AND BOX PLOTS:
First, load the data set. The data sets I have provided have commas separating the columns, so make sure you check the radio button "comma" under "Field separator" in the pop-up box. (*See instructions on handout entitled "How to Install and Use R and R Commander"*)

To create a histogram:
Graphs → Histogram
In the pop-up box, select the variable you want and the type you want. You can choose the number of "bins" if you wish (the number of equally spaced intervals to be used).

IMPORTANT: Before you create another graph, make sure you save the one you just created so you can print it and include it with your homework! Here is how you do it:
Graphs → Save graph to file→ as bitmap (or pdf, etc, if you prefer), then I usually choose JPEG. You can then insert it as a picture into a Word document, or you can just print it.

To create a boxplot:
Graphs → Boxplot
In the pop-up box, select the variable you want. If you wanted to compare two groups, you could click on "Plot by groups" and you would be able to select a categorical variable (such as Sex) and then get separate boxplots for the different categories of that variable. Again, remember to save your graph!

REGRESSION, SCATTER PLOTS AND CORRELATION
To create a scatterplot:
Graphs → Scatter plot
In the pop-up box, choose the x-variable (explanatory, goes on horizontal axis) and the y-variable (response, goes on vertical axis). Uncheck all boxes, except possibly "Least-squares line" if you want to see the regression line superimposed on the scatter plot. If you want to see different symbols for different groups, click on "Plot by groups" near the bottom of the pop-up box, then select the grouping variable.

To get the equation for the regression line:
Statistics → Fit models → Linear regression
In the pop-up box, select the response variable and the explanatory variable. (Note that these are in the opposite order from what they were in the scatter plot pop-up box.)

The intercept and slope will appear in the midst of a bunch of other stuff in the Output Window in the section labeled "Coefficients." The y-intercept is in the row labeled as "(Intercept)" and the column labeled "Estimate." The slope is just below it in that same column, in the row labeled with the name of the explanatory variable.

If you want to find the predicted values $\hat{y}$ and the residuals $y - \hat{y}$ do the following:
Models → Select active models and choose the one you want (you will probably only have one)
Then
Models → Add Observation Statistics to Data
In the pop-up box, choose "Fitted values" which is a synonym for $\hat{y}$, and "Residuals." Two new columns will be added to your data set, with values for these.

To get a correlation coefficient:
Statistics → Summaries → Correlation matrix
In the pop-up box, choose the 2 variables for which you want the correlation. (Choose 1, then hold down the Ctrl key while you choose the other.) Make sure "Pearson product-moment" is checked. A two-way table will appear, with 1.00000… as the correlation of each of the variables with itself, and the correlation you want as the correlation listed in the other corners of the table.

TO SAVE YOUR DATA SET SO YOU CAN WORK ON IT AGAIN LATER:
Data → Active data set → Save active data set
Save it where you like. Then the next time you open R Commander, go to:
Data → Load data set
It should bring up your files, and just find the one you saved and open it.

EXITING R AND R COMMANDER
You can exit both at the same time using *File→ Exit→ From Commander and R*
You will be asked if you want to save your script file and your output. If you need the output for your homework, you should save it. It will be saved as a text file (.txt).