Math 107, Spring 2001
Test 2

Part I

1.) Make a stemplot for the following data points.

2.) Decide if the data would be better presented by a boxplot diagram or by reporting its mean and standard deviation.

3.) If the former, calculate the five-number summary and draw the boxplot. If the latter, calculate the mean and standard deviation.

123 148 161 112

127 153 132 125

132 105 152 148

116 134 147 139

PartII

1.)Make a scatterplot diagram of the following data.

2.)Determine the correlation coefficient and the line of regression.

3.)Graph the line of regression on the scatterplot diagram.

4.)Predict what y will be when x = 13.

(3,7) (6,7) (8,6) (1,5)

(1,8) (4,6) (7,9) (9,2)

(3,10) (5,11) (11,8) (9,7)

(4,5) (2,7) (10,10)

PartIII

Say a meeting for a group you're a member of meets every first Tuesday of the month. Say they meet either in DeBartolo (DBRT), Reckers (RECK), LaFortune (LAFO), or the Center for Social Concerns (CSC). Say the meetings are always either at 7:00 pm, 7:30, 8:00, or 8:30 depending on the member's schedule. For example, one possible time-place combination is (CSC, 8:00) (8 pm at the Center for Social Concerns.)

1.) List all the possible meeting time and place combinations as a sample space, S. What is $|S|$?

2.) Say a member, Val, can meet either at 8 or 8:30, but never before 8. Let VAL be the event that the meeting is at a time when Val can make it. List the possible combinations in VAL.

3.) Say another member, Mic, needs to eat during the meeting so he can only make the meeting if it's in LaFortune or Reckers. Let MIC be the event that the meeting is in a place where MIC can attend. List the elements in MIC.

4.) List the possible combinations of times and places in both VAL and MIC; that is, so both Val and Mic can attend. Call this event "VALANDMIC".

5.) Is the following part of a possible assignment of probabilities to events (a probability model)? Why or why not?

a.) P(DBRT)=.25   P(RECK)=.2   P(LAFO)=.2   P(CSC)=.35

a.) P(7:00) = .3   P(7:30) = .3   P(8:00) = .3   P(8:30)=.3

For the next three questions, assume each meeting time and place is equally likely.

6.) What's P(VALANDMIC)?

7.)What's P(not VAL)?

8.) Say there are only three meetings in the Spring semester. What's the probability Val can make at least one of them? (Hint: that's P(not(Val cannot make all 3))).

Part IV

Say you're taking a class where you need to meet with your professor five times over the course of the semester. Your professor has these meetings on Tuesdays. There are 16 Tuesdays during the semester for you to choose from.

1.) Say each of the five meetings serves a different purpose; so the first meeting you choose will serve the first puropose, etc. In short, this means the order of your selection matters. How many ways can you choose the five meetings out of the 16 Tuesdays?

2.) Say the purpose of the meetings is simply to discuss how things are going in class; in other words, order of selection doesn't matter. Now how many ways can you pick the five meetings.

3.) Say the professor will end up being sick the third Tuesday of the semester. What's the probability that's the time you picked to meet with her to accomplish your first task (from question 1)?