Statistics 111 – Summer 2009
Homework 1
Due: Monday, June 1

Questions from the book:

1. Question 3.17 (What is needed?) page 192
2. Question 3.26 (Aspirin) page 193
3. Question 3.47 (Ultramarathon) page 197
4. Question 3.52 (What's wrong?) page 208
5. Question 3.56 (Identify the populations) page 208
6. Question 3.73 (Excite Poll) page 211
    a. For part (c) of this question be sure to discuss why the sample does, or does not, represent the population's opinion.
7. Question 3.82 (What's wrong?) page 221
8. Question 3.88 (Health Care in Ontario) page 222
9. Question 3.95 (Toss a coin) page 224
    a. Create a histogram rather than a stem plot

More Questions (required):

10. The average of the last seven days' daily high temperature is 73.5 degrees Fahrenheit. What is the hottest temperature tomorrow can reach if the average temperature of the eight days is to be 75 degrees or less?

11. Assume the Boston Celtics basketball team signed a star player at the beginning of the season to a contract paying an annual salary of $13 million. To make room for this contract under the salary cap, they released all the other players and replace them with 11 rookies, paying them each the league minimum salary of $442,000.
    a. What is the mean salary of the team? What is the median salary of the team?
    b. How many players earn less than the mean? How many earn less than the median?
    c. Next season, the star gets a raise to $23,000,000, while the other players stay at the same salary. How does this affect the mean salary of the team? How does it affect the median salary?

12. A teaching assistant gives a 10 question quiz to their section with no partial credit is given. After grading the papers, the TA writes down for each student the number of questions the student got right and the number wrong. The average number of right answers is 8.13 with an SD of 1.1. Can you determine the average and standard deviation (SD) of the number of wrong answers? If so, what are they?

13. You roll a standard die three times and then calculate the SD for these rolls. What is the largest possible SD? What is the smallest possible SD? Explain briefly.