Statistics 101 – Homework 3

Due Wednesday, September 16, 2009
Homework is due on the due date at the end of the lecture.

Reading:	September 9	Chapter 5
	September 11 – September 16	Chapter 6

Assignment:

1. Do the following problems from the text, *Intro Stats*, 3rd Edition. If you have an earlier edition of the text, check with someone who has the 3rd Edition to make sure you do the correct problems.

   - Chapter 5 – problems 5, 6, 19 and 24
   - Chapter 6 – problems 3, 7, 9, 12, 27, 28, and 51

2. Most people believe that a "normal" body temperature is 98.6 ^{o}F. Go to the link on www.stat.iastate.edu/courses/ for (all) sections of Stat 101 to find a JMP data table for body temperatures of 65 males and 65 females.

   a) Use Analyze – Distribution to create histograms and numerical summaries of the samples of male and female body temperatures. Use Fit Y by X to display a comparison of Body Temperature for the two Genders. Include box plots in your display. Turn in the output from JMP with your homework and use it to answer the following questions.
   b) Compare male body temperatures to those of females. Be sure to comment on shape, center, spread and if there are any outliers for either gender.
   c) Use Analyze – Distribution to create a histogram, box plot, and normal quantile plot for the combined sample of male and female body temperatures. Turn in the output from JMP with your homework and use it to answer the following questions.
   d) Does a normal model seem reasonable for describing body temperatures? Explain briefly.

3. Use a normal model with mean of 98.2 ^{o}F and a standard deviation of 0.7 ^{o}F to answer the following questions.

   a) What proportion of body temperatures are less than or equal to 98.6 ^{o}F?
   b) What proportion of body temperatures are greater than 100 ^{o}F?
   c) Compute the "normal range" i.e. the values that contain the central 95% of body temperatures.
   d) Compute the cutoff such that 2% of body temperatures are greater than this cutoff.