Stat 104 – Homework 9
Due Friday, December 5, 2008

Reading:   November 18 – November 20   Section 9.3
December 2 – December 4   Sections 9.1, 9.2

Assignment:

1. Complete the following problems from the text: 9.76 and 9.106 a).

2. In a Quinnipiac University Poll conducted between November 6th and 10th, 2008 a random sample of 2,210 registered voters from across the U.S. were asked the question: “Do you think it’s the government’s responsibility to make sure that everyone in the United States has adequate health care, or don’t you think so?” 1,326 answered it’s the government’s responsibility, 796 didn’t think so and 88 were unsure.
   a. What is the population? Be specific.
   b. What is the sample? Be specific.
   c. Are the conditions met for constructing a confidence interval for the population proportion that think it’s the government’s responsibility to make sure that everyone in the United States has adequate health care? Support your answer.
   d. Construct a 95% confidence interval for the population proportion that think it’s the government’s responsibility to make sure that everyone in the United States has adequate health care?
   e. How would a 90% confidence interval compare to the one you constructed in d? You should comment on the centers of the intervals and the widths of the intervals. Note: You do not need to construct a 90% confidence interval to answer this question.

3. The germination rate of a specific brand of soybeans is advertised to be greater than 92%. To test this claim, 250 soybean seeds of the specific brand are planted in a controlled environment and 235 of the 250 seeds germinate. Is this convincing evidence that the true population proportion of seeds that will germinate is greater than 92%? To answer this question, go through a step-by-step test of hypothesis by answering the parts below. Use $\alpha = 0.05$.
   a. Give a null and alternative hypothesis for the proportion of all customers who would tell a friend to buy a product from the manufacturer.
   b. Verify that the conditions are satisfied.
   c. Compute the value of the test statistic and convert this to a P-value.
   d. Use the P-value to make a decision whether or not to reject the null hypothesis.
   e. State a conclusion, within the context of the problem, which addresses whether or not it is appropriate for the producer of the soybeans to advertise a germination rate greater than 92%.