Statistics 111 – Summer 2009
Homework 4

Due: Wednesday, June 24

Questions from the book:

1. Question 6.23 (Average hours per week on the Internet) pg 370
2. Question 6.26 (Fuel efficiency) pg 371
3. Question 6.52 (Determining hypotheses) pg 391
4. Question 6.54 (Even more on determining hypotheses) pg 391
5. Question 6.56 (Computing the p-value) pg 391
6. Question 6.68 (Who is the author?) pg 393

More Questions (required):

7. Consider taking a random sample from the population of male industrial workers in London who have experienced a major coronary event. You are interested in estimating the mean systolic and diastolic blood pressures for this population. A sample of 86 workers who experienced a major coronary event has mean systolic blood pressure = 143 mm Hg. Assume the population standard deviation is σ = 24.4 mm Hg.
    (a) Construct a 95% confidence interval for the population mean systolic blood pressure.
    (b) How does this interval change if we want 90% confidence?
    (c) How does this interval change if we want 99% confidence?

8. A dataset available on the website (golffee.txt) gives the fees (cost in $) to play an 18-hole round of golf on a weekday for a random sample of 29 golf courses from the approximately 19,000 courses stored on the web site www.golfcourse.com.
    (a) Find a 95% confidence interval for the mean cost of playing 18 holes on a weekday (Assume that the population SD σ is known and equal to the sample SDs)
    (b) Conduct a hypothesis test (with two-sided alternative) that the mean cost of playing 18 holes is $25. Use a 0.05 level test to decide whether or not to reject the null hypothesis. Be sure to state your null and alternative hypotheses. What is the p-value of your test?