ISyE 4031 Regression and Forecasting
Homework 1
Due January 20, 2016

Please solve the following exercises from the text book.

1. Exercise 2.7, page 76, parts (a), (e), and (f) only.

2. Exercise 2.8, page 76, parts (a) and (b) only.

3. Exercise 2.9, page 76.

4. Exercise 2.10, page 76.

5. Exercise 2.11, page 76.

6. The thermal inertia properties of concrete used as a building material were studied. Five samples of the material were tested in a structure, and the average interior temperatures (°C) were reported as follows: 23.01, 22.22, 22.04, 22.62, and 22.59. Assume that the interior temperature is normally distributed and the significance level, α is 0.05.

a. Test whether the average interior temperature equals 22.5 or not by following the steps of hypothesis testing, i.e., state the null and alternative hypotheses, write and calculate the appropriate test statistic, compare to the critical value, write your conclusion.

b. Construct a 95% confidence interval for the population mean μ. Can you use the resulting confidence interval to answer part (a)? Please explain.