Written Homework 7, due <u>Friday 8/15/08</u>—NOTE CHANGE IN DUE DATE

Section 10-4

Page 565, Using the data from Problem 16, complete parts a) – g). You may use software to get most of the numbers you need. See page 563 for instructions for different software options.

a) Make a scatter plot of the data. What is the sample correlation coefficient? Do you think linear regression is a reasonable model for these data? Explain.

b) Find the linear least squares regression equation for predicting the temperature in degress Fahrenheit given the number of times a cricket chirps in 1 minute.

c) Find the 95% CI for β_1.

d) Test the claim that the slope is the slope of the regression line is greater than 0. Be sure to indicate your null and alternative hypotheses, your test statistic, a critical value, a P-value, a decision, and a conclusion in the context of the problem. Use $\alpha = 0.05$.

e) What is the predicted value for mean temperature given 1050 chirps in 1 minute?

f) Find the 95% CI for the mean temperature given 1050 chirps in 1 minute. Interpret this interval.

g) Find the 95% prediction interval for a random, new individual temperature value given 1050 chirps in 1 minute. Interpret this interval.