Problem Set 9 for Math 17

Date Due: April 22, 2011

April 18, 2011

Problems:
Chapter 27 - 1, 28, 29, 31a, 42

Additional:
1. The data set wolfskulls.txt has data on wolf skulls from male and female (M/F) wolves in the rocky mountains and the arctic archipelago (RM/AA). Two measurements of interest (in mm) are PL = Palatal length and PPL = Postpalatal length. Suppose we want to know whether or not PL can be used to accurately predict PPL. A relevant analysis can be found in the related Word document and you can use it to address the questions below.
a. What variable should be explanatory and what variable should be the response?
b. Based on the scatterplot, describe the relationship between the variables (strength, direction, shape).
c. Report the correlation between PL and PPL.
d. Report the equation of the regression line and interpret the slope.
e. What is the value of R-squared? What does this value mean (interpret)?
f. We now want to know if PL is a significant predictor for PPL at a signficance level of .01. We will assume the data set is a random sample of wolf skulls. What hypotheses should you test?
g. Check conditions. Report on your findings.
h. If appropriate, complete the inference procedure by reporting your test stat, p-value, and conclusion. If not appropriate, state that instead.