ECON 3640 - Final Exam Study Guide

Question 1- Get the data "EX07-55SEEDCNT2" into the Global Environment in R. As part of the Six Sigma quality improvement effort, the company wants to compare scoops of seeds from two different packaging plants. As SRS of 50 one-pound scoops of seeds was collected from Plant 1746, and an SRS of 19 one-pound scoops of seeds was collected from Plant 1748. The number of seeds in each scoop were recorded.
a) Using this data set, create a histogram, boxplot, and Normal quantile plot of the seed counts from Plant 1746. Do the same for Plant 1748. Are the distributions reasonably Normal? Is the t procedure appropriate given your observation?
b) Construct a 99% confidence interval around mean differences of two plants (**Hint: use the smaller sample size for calculating the degrees of freedom**) (**Hint: R_week11, 7.52**)

Question 2- Get the data "EX07-57DRVTHRU" into the Global Environment in R. **QSRMagazine.com** assessed 1855 drive-thru visits at quick service restaurants. One benchmark assessed was customer service. Responses ranged from 'Rude (1)' to 'Very Friendly (5)'. The data set breaks down the responses according to two of the chains studied.
a) A researcher decides to compare the average rating of McDonald's and Taco Bell. Assuming an average of these ratings makes sense, report the means and standard deviations of the ratings for each chain separately.
b) Test whether the two chains, on average, have the same customer satisfaction. Use a two-sided alternative hypothesis and a significance level of 5%. (**Hint: R_week11, 7.52**)

Question 3- Get the data "Ex07-73WHEAT" into the Global Environment in R. A quick survey data which collected prices from only five producers each month is presented. Assume that we will perform a two-sided test using the 5% significance level. Find the critical value for the unpooled t-test statistic that does not assume equal variances. Use the minimum of $n_1 - 1$ and $n_2 - 1$ for the degrees of freedom. (**Hint: Example 7.13 "More about wheat prices" in your textbook**)