

Spring III FC 2009 Minitab Assignment Three

First type your name in the session window.

1. a. **Next we will use Minitab to do Number 8.32 on 351.**

- ⌚ Use the given data to find a 95% confidence interval for the mean calcium intake, μ , of all adults with incomes below the poverty level. Assume that the population standard deviation is $\sigma = 188$ mg.
- ⌚ To do this choose **Stat > Basic Statistics > 1-Sample Z.**
- ⌚ Select the samples in columns option button
- ⌚ Click in the Samples in columns text box and specify CALCIUM INTAKE, which is in C1.
- ⌚ Click in the standard deviation text box and enter a value for σ .
- ⌚ Click the options button and type the confidence level in the text box.
- ⌚ Click the arrow button at the right of the alternative drop-down list box and select not equal
- ⌚ Click **OK.**
- ⌚ Click **OK.**
- ⌚ Minitab will print out several items but what we are interested in at this point is the confidence interval.

b. **Do a probability plot for the data in column C1.**

- Print the graph and save it on your floppy disk as ProbPlotEx832.
- Type a sentence in the session window stating whether or not you think the probability plot for the sample data indicates that the population is approximately normally distributed, and hence, comment on the advisability of using the z-interval procedure here.

2. a. **This activity is taken from chapter 10.** Recall that we have already studied how to make inferences about one population mean. In this exercise, we will make inferences about two population means. We will use minitab to do **Number 10.34 on page 459 of your current text.** We will test the hypotheses $H_0 : \mu_1 = \mu_2$ versus

$H_0 : \mu_1 < \mu_2$ **by doing the following:**

- ⌚ Enter the data for male in C1 and the data for female in C2.
- ⌚ Click on **Stat => Basic Statistics => 2- Sample t**
- ⌚ Select the samples in different columns option button
- ⌚ Click in the first text box and specify C1
- ⌚ Click in the second text box and specify C2
- ⌚ Select the assumed equal variances check box
- ⌚ Click the confidence level text box and enter the confidence level
- ⌚ Click the Test difference text box and enter 0
- ⌚ Then using **Options**, indicate that the alternative is "less than" and
- ⌚ **Click on OK**
- ⌚ **Click on OK.**

- You should find that it gives the t-value and the P-value for this hypothesis test.
- Then type a sentence in the session window interpreting your results.

b. Repeat the steps in part (2a), but this time deselect the Assume equal variances check box.

- You should find that it gives the t-value and the P-value for this hypothesis test.
- Then type a sentence in the session window interpreting your results.

3. Finally, We will use minitab to do **Number 10.98 on page 490 of your current text. We will test the hypotheses $H_0 : \mu_1 = \mu_2$ versus $H_0 : \mu_1 \neq \mu_2$ by doing the following:**

- ⌚ Enter the data in C1 (Weight Method) and C2 (Groove Method).
 - ⌚ Click on **Stat => Basic Statistics => Paired t**
 - ⌚ Select the samples in different columns option button
 - ⌚ Click in the first text box and specify C1
 - ⌚ Click in the second text box and specify C2
 - ⌚ Select the assumed equal variances check box
 - ⌚ Click the confidence level text box and enter the confidence level
 - ⌚ Click the Test difference text box and enter 0
 - ⌚ Then using **Options**, indicate that the alternative is "not equal to " and
 - ⌚ Click on OK
 - ⌚ Click on OK.
- You should find that it gives the t-value and the P-value for this hypothesis test.
 - Then type a sentence in the session window interpreting your results.
 - Print the session window and save your work as Project3 on your floppy disk.

This assignment is due at class time on Tuesday, July 14, 2009.