Math 160/263 – Assignment #l
Title: Introduction to Minitab
Worksheet: data1074.MTW

The purpose of this assignment is to introduce you to the software package Minitab.

- You will familiarize yourself with the various screens which can be displayed by Minitab, and the Help feature.
- Then you will use simple Minitab commands to examine a set of data and write a report concerning your findings.

This assignment uses the material in the Introduction and Chapters 1 and 2 of the Minitab Manual. If you are new to Minitab, you may find this manual helpful when you when you start. The "Brief Introduction to Minitab" may also be useful; it is posted on the statistics course web site.

Starting Minitab

1. To start Minitab, click on **Start** ⇒ **Programs** ⇒ **Minitab 15 for Windows** ⇒ **Minitab**. As is usual with computer instructions, the symbol ⇒ signifies the icons or boxes you left-click with your mouse in order of their appearance.

2. Identify the windows you see when you start Minitab. Find the ReportPad (its icon on the command bar at the top has a little red A on it), and enter your **name**, the **due date**, and **your section number**.

Using Minitab

We now turn to the analysis of a simple set of data using the power of Minitab. The purpose is to evaluate whether claims made by diet food manufacturers are accurate.

You will use the data in the Minitab Worksheet posted with this assignment, **data1074.MTW**. The data, which were collected by D. Allison, S. Heshka, D. Sepulveda, and S. Heymsfeld in 1993, compares the caloric content of the foods with that listed on the label. The data is from three sources, **N** (nationally advertised), **R** (regionally advertised), and **L** (locally advertised). There are two columns, percentage difference in calories per gram, and percentage difference in calories per item. A positive entry means that the food contains more calories than the label promised.

We wish to explore the accuracy of the labelling of the three groups, N, R, and L. **Do any of the three require additional regulation?**

Getting and editing the data:

3. First you need to open the data. If it does not download directly in your web browser, right-click on the link to the data and use **Save target as**. The data should show up in a Minitab Worksheet. Examine it, so you know what you have. There should be 38 rows and 5 columns.

You should have noticed an extra column of data, and some missing pieces. A star indicates missing data. Delete the extra column, and enter the following food item information in the correct alphabetical place in the worksheet.

	C1	C2	
jelly diet candy-reds flavor	*	250.0	L
lasagna	-11.0	-7.0	N

Entering Information into the ReportPad:

4. We will now append results into ReportPad.

- Add a sentence to the ReportPad saying which of the two variables you will have to use to compare the three sets of data.
- Add the first three rows of your corrected data to the ReportPad. Highlight the cells you want, and use copy and paste. You may have to fix the spacing in the ReportPad.

Plotting the Data:

5. Now we will make plots of the data and save them to the ReportPad. The commands you need are all in the **Graph** menu, and further information can be obtained by using the **Help** section of Minitab.

- Make a single dot-plot that shows the distribution of "per-item" data for all three groups together. **Graph** $\Rightarrow$ **Dotplot**, and use **Simple**.
- Make three histograms that show the distribution of "per-item" data for each of three groups. **Graph** $\Rightarrow$ **Histogram**, and use **Simple**. Select **Multiple Graphs** and make "per-item" the graph variable. Then select the **Multiple Graphs** button, the **By variables** tab and enter "Classification" in the **By variables with groups on separate graphs**.

- Make three Box-plots that show the distribution of "per-item" data for each of the three groups, but put them on the same graph, **Graphs ⇒ Boxplot**, and select **One Y with Groups**. Enter "per-item" as the graph variable and "Classification" as the categorical variable for grouping.

- Paste all the graphs into your report; right click on each and select **Append Graph to report**.

Calculating Descriptive Statistics with Minitab:

6. Calculate the discriptive statistics for each of the three groups. Use **Stat/Basic Statistics/Descriptive Statistics**. Select the "per-item" Column as the "Variable" and classification as the optional "by" Variable. Paste the results into the ReportPad. Highlight the material you have typed into the session window, right click in the session window and select **Append selected lines to Report**. Then go to the Report Pad and check that they got there. This is how you will build the report for each Minitab assignment; results of calculations show up in the session window, and you make sure they what you want, and then move them to the ReportPad.

- Which group has the largest mean? What is it?

- In one or two sentences, compare the accuracy of the three groups. Do any need addition regulation; if so which. Put your answers into the ReportPad

Saving and Editing your Report:

7. Save the ReportPad (use **File ⇒ Save Report As** as a ".rtf" file. This stands for "rich text format" and is readable by Microsoft Word). Open the report in Microsoft Word and edit it to produce a report with a **professional appearance**. Ensure the title says what the report contains. Follow the instructions your instructor gives for submitting the final product (ie. printout).

Welcome to Minitab!