

## **CHAPTER 1 - LAB SESSION INTRODUCTION TO EXCEL**

**INTRODUCTION:** This lab session is designed to introduce you to the statistical aspects of Microsoft Excel. During this session you will learn how to enter and exit Excel, how to enter data and commands, how to print information, and how to save your work for use in subsequent sessions. As with any new skill, using this software will require practice and patience. Excel is a spreadsheet used for organizing data in columns and rows. It is an integrated part of Microsoft Office, and so data can be easily imported and exported into word processing documents, databases, graphics programs, etc. It offers a wide range of statistical functions and graphs and so is an alternative to specific statistical software.

### **BEGINNING AND ENDING AN EXCEL SESSION**

**To start Excel:** Click on the Start button and choose Programs/Excel. If you have the Office shortcut bar installed, simply click on the Excel icon.

**To exit Excel:**

To end a Excel session and exit the program, choose **File** from the menu bar and then choose **Exit**. A dialog box will appear, asking if you want to save the changes made to this worksheet. Click **Yes** or **No**.

You can also exit Excel by clicking the X in the upper right corner of the window.

### **THE EXCEL WINDOWS**

**The Document (sheet) Window:**

When you first start Excel you will be in a window titled "Microsoft Excel - Book 1". Excel organizes itself in workbooks, each of which is made up of worksheets that are 65,536 rows by 256 columns. You can enter and edit data on several worksheets simultaneously and perform calculations based on data from multiple worksheets. When you create a chart, you can place the chart on the worksheet with its related data or on a separate chart sheet. Each of the cells within the sheet is identified by the intersection of its row and column, for example A2, or B7.

Note the three tabs and the bottom of the screen, called “sheet1”, “sheet2”, and “sheet3”. The default is a workbook with three sheets, but the number of sheets in a workbook is limited only by available memory. To add a single worksheet,

between Microsoft Excel Help (F1 key) or the Office Assistant. You can even customize the Office assistant to a varied selection of figures. He will even travel with you from Excel into Word, or any other part of the Office package of programs.

## ENTERING DATA

When a workbook is first opened, the cell A1 is outlined in black. This indicates the active cell. Move your cursor around the sheet, clicking into different cells to activate them. Note that the address changes in the box above A1. The address (row and column) of the active cell always appears here.

Let's enter data in the second column:

78 94 93 81 75 62 58 50 80 79

To do this press the down arrow key (↓) or enter key to move to the next entry position.

Let's fill the first column with the numbers 1 through 10. We can do it the same way, or we can let Excel do it for us. Enter a 1 in cell A1. Choose **Edit > Fill->Series**. In the dialog box, select **columns**, **linear**, step **1**, stop value **10**. Then click **OK**.

Column 1 should now contain the integers 1 through 10.

While you are in the sheet window, fill columns 3 and 4 with a set of ten test scores each. You should now have four columns of data.

## Changing a value entered

We can edit data directly in the cell or from the formula bar at the top of the sheet. If you have not hit the Enter key yet, you can simply back space and correct your mistake. If you have entered the data, click on the cell you wish to edit to make it active. You can either retype to overwrite the data, or click into the formula bar and edit the entry.

Suppose we had inadvertently left out a value and we wish to enter it in a particular position. Place the cursor in the cell in which you wish to insert the new value. Click the Insert Cells button on the toolbar. A dialog box will appear, asking which way you wish to move the cells. A blank cell is created and the missing value can be entered. Entire rows and columns can be added the same way. You can take a short cut to this by using **Control +**.

A cell can be deleted by making the cell active, then Choose: **Edit > Delete Cells** or by using **Control -**

### **Copying Data**

To copy the contents of one cell to another, simply activate the cell and choose **Edit > Copy** from the **Menu Bar**. (**Control C** will also accomplish this.) Activate the cell that you want to paste the value into and choose **Edit -> Paste** (or **Control V**) This can also be done for a range of cells. Activate the upper left cell of the range. Press shift and click the lower right corner of the range. This should highlight the entire range. You can then copy and paste as above.

### **Cell References:**

Previously, you entered four columns of data. Click on cell B11. On the Standard Toolbar you will see a summation sign  $\Sigma$ . Click on it and the ten values above it will be enclosed in a box. Press enter and the sum of the ten values will be in cell B11. Now activate cell B11, press **Control C**, highlight cells C11 and D11, and press **Control V**. This should give you the sums of columns C and D. Note what happened in the formula when you copied it. The references were changed to reflect the new column. This is called a relative reference.

If you need to preserve the value of a certain cell when copying a formula, you will have to use absolute referencing. This is accomplished by placing \$ within the address. ( A\$6\$ would keep the value in cell A6 wherever it was copied to within the worksheet.)

### **SAVING YOUR WORK**

An Excel workbook contains all your work; the data, graphs, and all the sheets within the workbook. When you save a project, you save all of your work at once. When you open a project, you can pick up right where you left off. The contents of each sheet can be saved and printed separately from the project, in a variety of formats. You can also delete a worksheet or graph, which removes the item from the project.

### **RETRIEVING A FILE**

You can open a wide variety of files with Excel. Choose **File Open** to select the appropriate one. There is an **Import Wizard** that will guide you through the

process.

A CD ROM accompanies Johnson/Kuby's Elementary Statistics, 10/e. This disk has data in Excel format for many of the problems in the text. Follow the instructions that accompany the disk for use on your computer.

### **PRINTING:**

You have many options when it comes to printing from Excel. Go to the standard toolbar and choose the **File** drop down menu. The Set Print Area choice allows you to select the range of cells you wish to print.

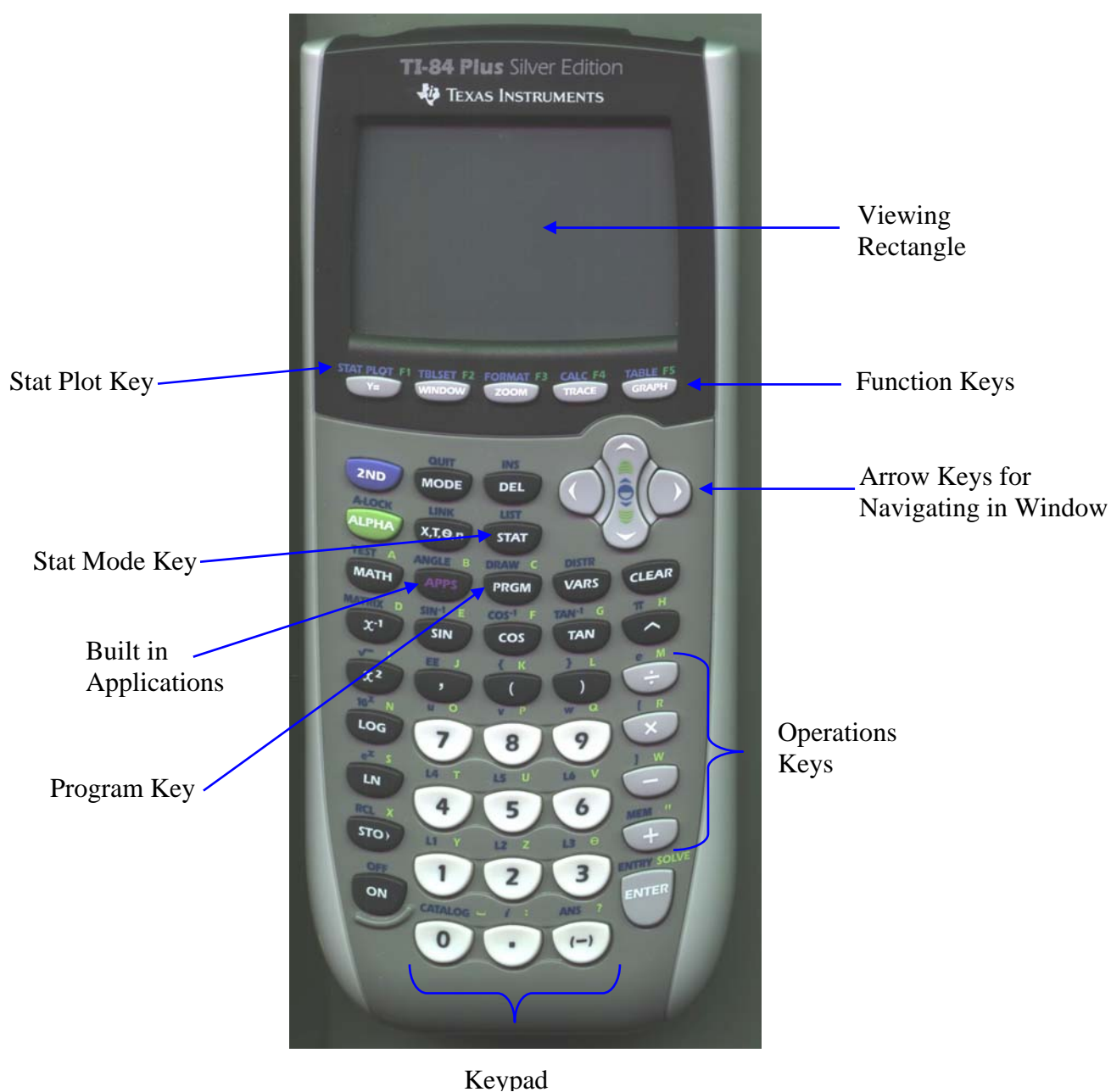
The **Page SetUp** dialog box has four tabs that will help you customize your output. You can also access this dialog box through **Print Preview**. This is a good choice because it allows you to play with your selections to get the best layout for your output before you commit it to paper.

### **ASSIGNMENT:**

1. Create a data file on your disk that consists of the heights of 15 of your classmates (in column 1) and their weights (in column 2).
2. Retrieve the data file created in #1 above, and produce a paper copy (commonly called 'hard-copy') to hand in.
3. Retrieve the data file for Exercise 2.21 from the Student Suite CD that accompanies the Johnson/Kuby text, and print a hard copy to hand in.

# Chapter 1


## Introduction to the TI-84 Plus Graphing Calculator

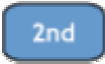





This chapter is a brief introduction to the TI-84 Plus. The basic commands, keystrokes, programs and operations used throughout *Elementary Statistics*, 10<sup>th</sup> edition will be described in detail. Refer to the picture above frequently as a visual aid to locating the various keys.

The keypad on the TI-84 Plus is virtually identical to the TI-83 Plus. However, the TI-84+ has more RAM, greater processing speed and additional applications. It also includes a USB cable for faster communication with your PC.

### On, Off, Contrast

The  key is used to turn the calculator on.

The key sequence   is used to turn the machine off. There is also a battery saving feature built into the TI-84+ that will automatically turn the machine off after approximately 5 minutes of inactivity.

Press and hold  then press  to increase the contrast, making text easier to read.

Similarly, press and hold  and then press  to decrease the contrast and lighten the text.



Release either key when you have reached the desired screen contrast. As the contrast is adjusted there is a single digit, 0-9, that appears in the top right corner of the screen. This number is an indication of the screen contrast (the higher the number, the darker the screen), and can be used to gauge the energy level of the batteries in the calculator. While the TI-84+ does display a warning message if the batteries are low, if the contrast is set to 9 and the screen is still very light, this is also an indication that the four AAA batteries need to be replaced.

**Note: Failing to replace the batteries immediately will result in having to replace the back up battery. This will also result in losing all of your programs, lists and data.**


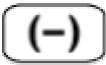
Note: When replacing the AAA batteries, be sure to change on battery at a time. Otherwise, your memory may be reset and you can lose all of your programs, lists, etc.

### Last Entry, Last Answer:

Each entry, is automatically stored in the TI-84+ memory, even as entries scroll off the screen or the calculator is turned off. To recall a previous entry

press   (ENTRY) To access earlier entries, repeat the keystrokes until the desired entry is displayed.

The variable ANS contains the value of the most recent calculation. In a series of calculations,

it may be more efficient to press   (ANS) rather than repeating the keystrokes that yielded that computation. For example, consider the following table.

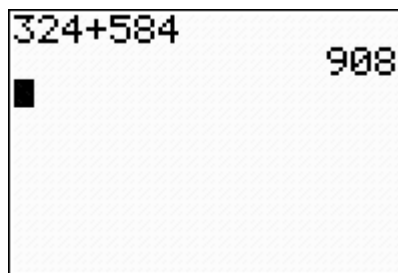
Quarter	Quarterly Spending	Cumulative Spending
1 <sup>st</sup>	\$324	\$324
2 <sup>nd</sup>	\$584	
3 <sup>rd</sup>	\$416	
4 <sup>th</sup>	\$375	

Solution:

To get the 2<sup>nd</sup> quarter cumulative spending, press



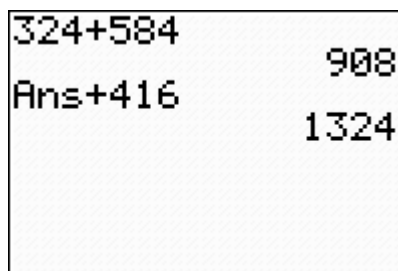
. Your screen should look like this.



To get the 3<sup>rd</sup> quarter cumulative spending, you can either retype  $908 + 416$  or you can press



which gives us the following screen



Note: Any time there is a previous answer stored in Ans, pressing an operation key will automatically bring up Ans into the working screen. For example. To compute the 4<sup>th</sup> quarter

cumulative spending, press  to return the screen


324+584	908
Ans+416	1324
Ans+375	1699

**Graphing Functions:** Graphing functions of the form  $y = f(x)$  are done in two steps. First,

press  located just under the bottom left corner of the viewing rectangle. This brings you to the screen..

Plot1	Plot2	Plot3
Y <sub>1</sub> =		
Y <sub>2</sub> =		
Y <sub>3</sub> =		
Y <sub>4</sub> =		
Y <sub>5</sub> =		
Y <sub>6</sub> =		
Y <sub>7</sub> =		



You can enter multiple functions and graph them all simultaneously. However, we typically only graph a single function at a time. Enter the function into  $Y_1 =$

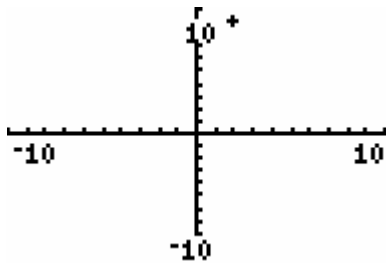
Next, we need to set the window. Press  which brings us to the window settings screen to specify the window portion that you want to view.

WINDOW
Xmin=10
Xmax=10
Xscl=1
Ymin=-10
Ymax=10
Yscl=1
Xres=1

The window settings above are common settings. The Xmin and Xmax buttons specify the X-axis and the Ymin and Ymax buttons specify the Y-axis. These settings will graph your function on the following window..

Finally press 

Note: We can quickly set the window at these settings using the Zoom key. Press , then arrow down to 6: ZStandard and press  which graphs the function on the following axes

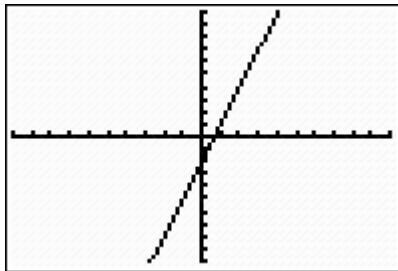



For example.

Graph the function  $y = 3x - 2$ .

Press

       to obtain



**Built-in Statistics:** The TI-84+ has several built-in functions for analyzing data. These are located in the STAT menu. Press 

```

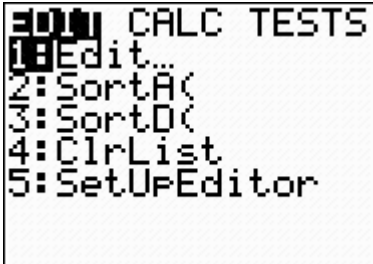
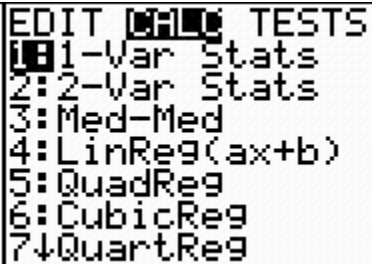
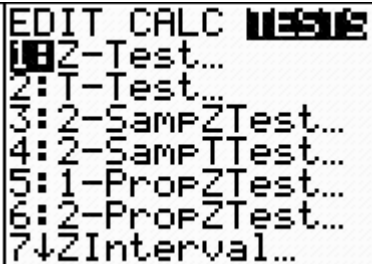
1: [2ND] CALC TESTS
2: 1: Edit...
3: 2: SortA(
4: 3: SortD(
5: 4: ClrList
6: 5: SetUpEditor

```

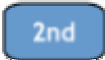

The EDIT Menu is where data is entered into lists. The CALC menu allows us to compute statistical measures on the data stored in the lists. Finally, the TEST menu allows us to construct confidence intervals and conducts tests of hypotheses. We will be using the TEST menu later in the course.

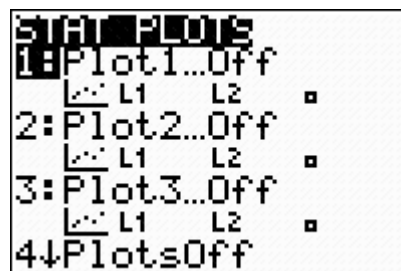
To move between menus just press the appropriate arrow key.

These are the 3 Menus in 

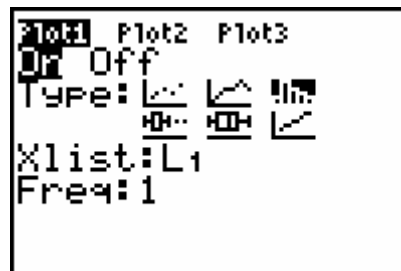
EDIT	CALC	TESTS
		

**Plotting Statistical Data:** The STATPLOT menu is used to set up various statistical plots.

Press   (STATPLOT). Which brings us to the following screen




Again, the TI-84+ has the capability of plotting 3 statistical plots simultaneously. We will usually plot only one at a time. It is recommended that users only use Plot1. To set up Plot 1, press



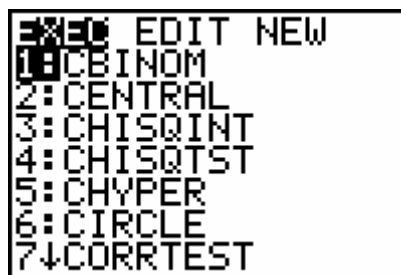
You navigate through the Plot1 menu by use of the appropriate arrow keys. Notice that the calculator has 6 plots listed under Type: In particular, the TI-84+ can plot scatterplots, frequency polygons, histograms, boxplots, and ogives. In Chapter 2 we will learn how to set up and use the STATPLOT menu

**Programs:** The CD accompanying the text includes programs for the TI-84+. At the end of this chapter, we will load these programs to our calculator for use later in the text. To see a list of

programs already loaded onto your calculator, press . Your screen will probably look like this. This means that you have no programs loaded on the calculator.



After loading the programs in chapter 2, your PRGM screen will look something like this.

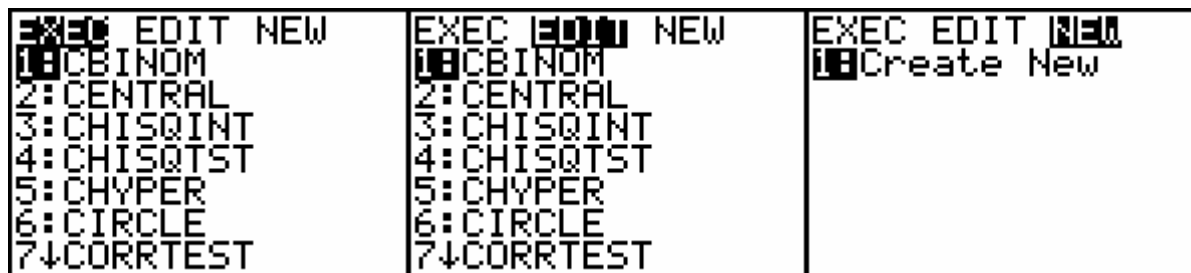


The EXEC menu is used to run a program. The EDIT menu is where programs are written or changed. The NEW menu allows us to create or write new programs. Here are the 3 menus


EXEC



EDIT

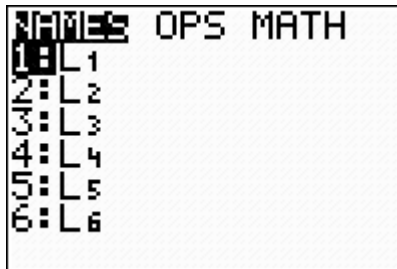
NEW



**Lists:** A TI-84+ list is a set of numbers or observations. A list can hold up to 999 numerical values and is the principal way to store data for analysis. Many of the built-in statistical functions and programs *operate* on or use data stored in a list or lists during execution. There are six simple built-in names for lists: L1, L2, L3, L4, L5, and L6. To quickly specify a

list, such as list  $L_1$ , press   ( $L_1$ ).

You can also call up a list from the LIST menu. Press   ( $LIST$ ) which brings you to the following screen..





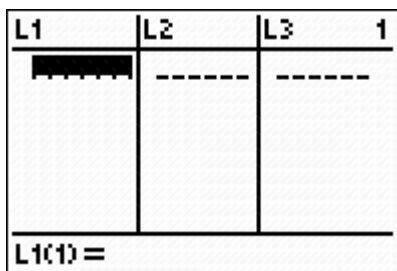
The NAMES, OPS and MATH submenus will be discussed later.

### Working with Lists

You can create lists with a descriptive name for easy identification. The name must be a string of up to 5 characters. The first character must be a letter which may be followed by letters and numbers. The number of lists is limited by the available memory. This is done primarily from the STAT EDIT menu.

For example, let's create a list called POUND

Press   to view the STAT LIST Editor



Next, Press  (Up Arrow) and  (Right Arrow repeatedly) to come to a blank list name.

L5	L6	██████	A
-----	-----		


Name=

Notice the block A in the upper right corner of the viewing rectangle, this means that the editor requires a list name that begins with an alpha character.

Type the letters **POUND**. Your screen will look like this..

L5	L6	██████	?
-----	-----		

Name=POUND

and then press . This returns the screen..

L5	L6	POUND	?
-----	-----	-----	


POUND =



At this point you can arrow down into the POUND list to enter the data.

Note: Data that is input into a list is stored indefinitely. There is no special SAVE button to save data in a list. This data is stored until either cleared or deleted.

### Input Data into a List

If you want to save the data in a list that you will recognize later, follow the steps immediately

above to create the list name. To input data into a list, press  select EDIT by pressing

 , then use the 

key to arrow over to the list you want to enter data into. For our POUND example, lets enter the following weights into POUND

8.2	9.6	9.1	6.3	7.8
-----	-----	-----	-----	-----

8 . 2 ENTER

L5	L6	FOUND ?
----	----	8.2
FOUND(2) =		

Repeat with each of the 5 weights to obtain the list as shown below..

L5	L6	FOUND 7
-----	-----	8.2 9.6 9.1 6.3 7.8 -----
FOUND(6) =		

Notice that the cursor is at the 6<sup>th</sup> position. Since we entered 5 values this is a good way to check to make sure that we have entered the correct number of data values into the list.

## Clearing Data from a List

To clear data from a list from within the STAT LIST Editor, press  (up arrow) to highlight the list name, press  and then . The contents of the list will be cleared.

**NOTE: Pressing the DEL (Delete) key will delete the list and the listname from the STAT LIST Editor Screen.**

The TI-84+ Graphing Calculator Guidebook has much more information about lists, including other ways they may be created and used. Most of the calculator programs presented in this supplement are illustrated using data stored in lists with descriptive names. However, it is not necessary to give each set of data a name. Rather use the  $L_1$  list and clear it for doing homework problems and when taking quizzes and tests so as not to overcrowd the STAT LIST Editor with data.

# Uploading the Statistics Programs on the CD

In order to use the programs referred to on this CD, you must have the following;

- 1) TI-84+ graphing calculator
- 2) TI-Connectivity Software installed
- 3) USB Cable for linking the calculator to your PC

For further information contact Texas Instruments at [www.ti.com](http://www.ti.com)

There are many programs that you will be downloading to your calculator. As the calculator's memory is finite, you may have to delete some programs prior to getting started. You can check your ram and archive memory by pressing



```
RAM FREE    24034
ARC FREE    153819
1:BA11...
2:Real...
3:Complex...
4:List...
5:Matrix...
6:Y-Vars...
```

Notice the RAM FREE and ARC FREE (Archive) figures. Typically, your calculator will have higher figures than these indicating that your calculator has plenty of both types of memory. If your calculator was used prior to your purchase, there is the possibility that it is overloaded. If your RAM or ARCHIVE are low, you will want to completely reset the calculator before uploading the following programs.

To reset the calculator to its original factory condition, press



Then press



bringing you to this screen..

```
TI-84 Plus Silver Edition
2.21

RAM cleared
```

## Uploading Programs to the TI-84+

Uploading the programs to the TI-84+ requires a few steps.

Step 1: Create a folder on your C: drive of your computer labeled Stats Programs.

Double-Click on My Computer  
Double-Click on (Local Drive) C:  
From the File menu, select New and click on Folder  
Type in the name Stats Programs

Step 2: Put the Statistics CD into the CD Rom drive of your PC.






Click on the Icon labeled Uploading Programs  
The software will prompt you for the folder to upload the programs.  
Click Browse, select C:, Select Stats Programs and then click on Upload.  
This will transfer a zipped file over to your harddrive containing all the stats programs utilized for this course.  
Follow the directions on screen to unzip the files into the Stats Programs folder. Next, Click on Unzip  
The software will prompt you for the folder to unzip the files to.  
Click Browse, select C:, Select Stats Programs and Press Unzip Now.

Step 3: Now the programs are unpackaged in the C:\Stats Programs folder. To transfer these over to the calculator requires the use of the TI-Connectivity software and USB cable available from Texas Instruments. On your computer Click on the TI-Connect Icon to open the program. Be sure that the TI-84+ is connected via the USB cable to the PC and make sure that the calculator is turned on.

Next Double Click on My Computer  
Double Click (Local Drive) C:  
Double Click on Stats Programs  
Click on Edit, Select All  
Right Click and select Copy  
From the desktop, right click on the TI-Connect icon and select Paste  
The software will transfer all of the programs to the TI-84+

Note: You may also drag and drop each program from C:\Stats Programs onto the TI-Connect Icon.

Step 4: The programs on your calculator are archived and need to be unarchived and

stored in RAM. On your calculator, press      
  
One by One, select each program listed with an asterisk (\*) and press  
Repeat step 4 until each program is listed without the asterisk.

Step 5: Checking your programs. Click on  . Your screen should now look like this.

```

2 ND EDIT NEW
1:CBINOM
2:CENTRAL
3:CHEBY
4:CHISQINT
5:CHISQR
6:CHISQRZ
7↓CHISQTST

```

You are now ready to use the TI-84+ and this manual. Refer to each chapter for specific instructions and examples as well as tips on use of the TI-84 to complete homework and lab assignments.

# CHAPTER 1 - LAB SESSION

## INTRODUCTION TO MINITAB

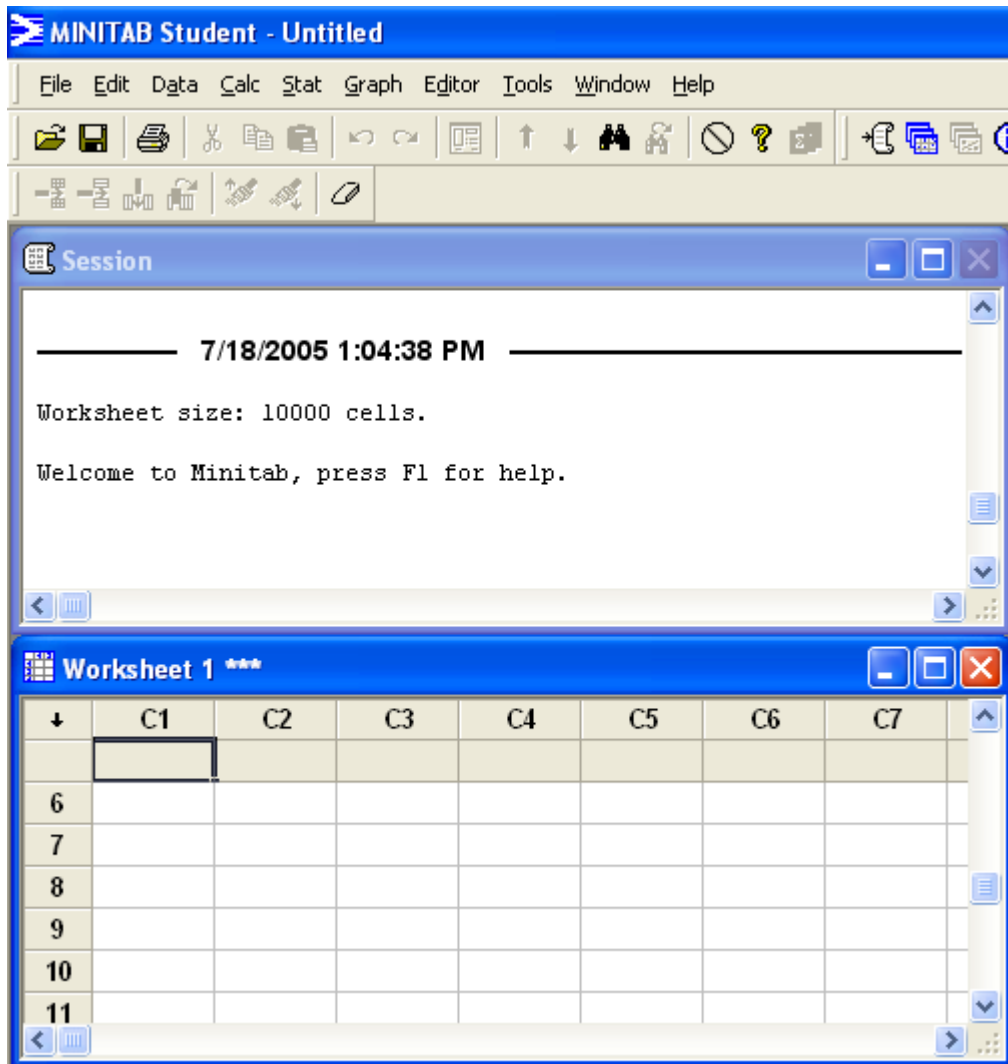
**INTRODUCTION:** This lab session is designed to introduce you to the statistical software MINITAB. During this session you will learn how to enter and exit MINITAB, how to enter data and commands, how to print information, and how to save your work for use in subsequent sessions. As with any new skill, using this software will require practice and patience.

### BEGINNING AND ENDING A MINITAB SESSION

#### To start MINITAB

From the taskbar, choose

**Start > Programs > MINITAB 14 > MINITAB.**



### **To exit MINITAB**

To end a MINITAB session and exit the program, choose **File** from the menu bar and then choose **Exit**. A dialog box will appear, asking if you want to save the changes made to this worksheet. Click **Yes** or **No**.

It is also possible to exit MINITAB by clicking the X in the upper right corner of the window.

In MINITAB, there are three ways to access commands: with menus, the Toolbar, and session commands. The Toolbar is a quick way to issue commands. When you click a button, MINITAB performs an action or opens a dialog box, exactly like the corresponding menu command. To be able to use session commands we must enable the command language editor. To do this, choose Editor > Enable Command Language. Session commands are alternatives to menu commands that you can type in the session window or in the command line editor.

### **MINITAB WINDOWS**

The main MINITAB window opens when you first start MINITAB. You will be in a window titled “MINITAB - Untitled ” within which a split window is shown; one titled “Session” and the other titled “Worksheet 1”. The Session window displays text output such as tables of statistics. Data windows are where you enter, edit, and view the column data for each worksheet. Another window in the MINITAB environment that can be accessed through the Window menu is the Project Manager. The Project Manager summarizes each open worksheet. Within the Project manager, the History window records all the commands you have used. Graph windows display graphs.

### **Session Window**

The data window is active when you first start MINITAB. To move to the Session Window just point the mouse to the Session Window and click. In older versions of Minitab, whenever you issue a command from a menu, its corresponding Session command appears in the Session window. In version 14, the command will appear in the History folder within the Project Manager and will only appear in the session window if you have enabled the command language. You can also type Session commands directly into the Session window at the MTB> prompt. Throughout these labs, the same typographical conventions will be used as in Johnson/Kuby’s Elementary Statistics, 10/e.

## The Help Window in MINITAB

Information about MINITAB is stored in the computer. If you forget how to use a command or subcommand, or need general information, you can ask MINITAB for help. There are three methods for accessing Help: choose Help from the menu, select “?” from the toolbar, or press F1. It would be beneficial for you to read “How to use Minitab Help” the first time you enter the program to help you understand the structures used in Minitab.

Students: Practice using the HELP command by typing the following and reading what is presented on the screen:

*Menu Commands*

Choose: **Help > Help**

Select: **Index Help on**

Enter: **MEAN**

## The Data Window

Close Help and click in the worksheet.

The worksheet is arranged by rows and columns. The columns C1, C2, C3, . . . , correspond to the variables in your data, the rows to observations. In general, a column contains all the data for one variable, and a row contains all the data for an individual subject or observation. You can refer to the columns as C1, C2, or by giving them descriptive names. Click into the column name cell (the blank space below the column number). Name column 2 “Test 1”, column 3 “test 2”, column 4 “test 3” and column 5 “Average”

## ENTERING DATA

Now that we are in the data window, let's enter data in the second column:

78 94 93 81 75 62 58 50 80 79

To do this press the down arrow key (↓) or Enter to move to the next entry position.

Suppose we wish to create a column that contains the integers 1 to 10. Although we could enter these numbers directly into the Data window by typing, there is a much easier way:

*Menu commands*

Choose: **Calc > Make Patterned Data >  
Simple Set of Numbers**

Enter: Store patterned data in : **C1**  
from first value: **1**  
to last value: **10**

Click: **OK**

NOTE: Use the Tab key to cycle through the prompts in the dialog box.

Column 1 should now contain the integers 1 through 10.

While you are in the data window, fill columns 3 and 4 with a set of ten test scores each. You should now have four columns of data.

### **Changing a value entered**

We can edit data directly in the data window. Let's suppose we had incorrectly entered the third data item in the second column. It should have been a 73.

Click cell C2 row 3 to make it active. Type in the correct value and press enter. Double-clicking allows insertion of new characters without retyping the entire entry.

Suppose we had inadvertently left out a value and we wish to enter it in a particular position. Place the cursor in the cell in which you wish to insert the new value. Click the Insert Cells button on the taskbar. A blank cell is created and the missing value can be entered.

A cell can be deleted by making the cell active, then Choose: **Edit > Delete Cells** (or press the Del key).

Rows of values can also be inserted or deleted in a similar manner. The menu command to insert a row is only functional when the data window is active, and a row is active. To make a row active, click the row header (ie. the row number). An empty row will be added above the active row in the Data window and the remaining rows will be moved down.

### *Menu Commands*

Choose: **Editor > Insert Row**

To print your data choose **File > Print Worksheet**, make the appropriate selections and click **OK**

Suppose we wish to copy a column into another column. We can use the **COPY** command instead of reentering the data.

Choose: **Data> Copy> Copy columns to columns**

Enter: Copy from columns: **TEST1**

Select **Store Copied Data in columns** (choose from drop down arrow to select Column)

Click: **OK**

To erase an entire column we use the **ERASE** command.

#### *Menu Commands*

Choose: **Data > Erase Variables**

Enter: Columns and constants: **select appropriate variable**

Click: **OK**

## **SAVING YOUR WORK**

A MINITAB project contains all of your work; the data, text output from the commands, graphs, and more. When you save a project, you save all of your work at once. When you open a project, you can pick up right where you left off.

The project's many pieces can be handled individually. You can create data, graphs, and output from within MINITAB. You can also add data and graphs to the project by copying them from files. The contents of most windows can be saved and printed separately from the project, in a variety of formats. You can also *discard* a worksheet or graph, which removes the item from the project without saving it. Let's save the project and name it "Intro". Be sure to note where you are saving it.

### **To open, save, or close a project**

To open a new project, choose **File > New**, click **Project**, and click **OK**.

To open a saved project, choose **File > Open Project**.

To save a project, choose **FILE > Save Project**.

To close a project, you must open a new project, open a saved project, or exit MINITAB.

## **RETRIEVING A FILE**

To retrieve the project that we had saved in the previous session:

*Menu Commands*

Choose: **File > Open Project**

Click: Look in drop-down list arrow

Locate the file

Double-click: INTRO.MPJ

Click: **OPEN**

The data window now displays the test data you saved previously.

A CD ROM accompanies Johnson/Kuby's Elementary Statistics, 10/e. Follow the instructions that accompany the disk for use on your computer.

**ASSIGNMENT:**

1. Create a data file on your disk that consists of the heights of 15 of your classmates (in column 1) and their weights (in column 2).
2. Retrieve the data file created in #1 above, and produce a paper copy (commonly called 'hard-copy') to hand in.
3. Retrieve the data file for Exercise 2.21 from the Student's Suite CD-ROM that accompanies the Johnson/Kuby text, and print a hard copy to hand in.