MTH 240 Statistics
TI-83 Usage Handout

Sorting Data

- Press **Stat**
- Select **Edit** by pressing **Enter**
- To clear the list L_1 use the up arrow to move up and highlight L_1
  Press **Clear** and then **Enter**. The entire list should be deleted.
- Enter the data values one at a time, pressing **Enter** after each value is entered. If you make an error, highlight the one that needs correcting by using the up and down arrows. Then retype it or delete the error and retype it.
- To sort your data values into ascending or descending order, press **Stat**. Then choose either **2: Sort A** (for ascending order) or **3: Sort D** (for descending order). Then press **2nd** and **1** to get L_1 and then **Enter**. The calculator will say, "*Done*". Press **Stat** and **Enter** to view your list now. This new list will be helpful in finding the mode of a set of values.

Finding Mean, Median, Standard Deviation, and Five Number Summary

- Press **Stat**
- Select **Edit** by pressing **Enter**
- To clear the list L_1 use the up arrow to move up and highlight L_1
  Press **Clear** and then **Enter**. The entire list should be deleted.
- Enter the data values one at a time, pressing **Enter** after each value is entered. If you make an error, highlight the one that needs correcting by using the up and down arrows. Then retype it or delete the error and retype it.
- Press **Stat**
- Use the right arrow key to highlight **Calc**
- Select **1: 1-Var Stats** by pressing **Enter**
- If you want the calculations done on the values stored in L_1, press **Enter**
  If you want the calculations done for another list, you must type the list name and then press **Enter.**
- The calculator will give you a list of numbers including the mean, median, and standard deviation. Use the down arrow key to move through the entire list of numbers.

Finding the Mean, Median, Standard Deviation from a Frequency Table

- Press **Stat**
- Select **Edit** by pressing **Enter**
- To clear the list L_1 use the up arrow to move up and highlight L_1
  Press **Clear** and then **Enter**. The entire list should be deleted

- Enter the class mid-points in L_1, pressing **Enter** after each value is entered. Then enter the corresponding frequency in L_2, pressing **Enter** after each value is entered. If you make an error, highlight the one that needs correcting by using the up and down arrows. Then retype it or delete the error and retype it.
- Press **Stat**
- Use the right arrow key to highlight **Calc**
- Select **1: 1-Var Stats** by pressing **Enter**
- Then type **L_1, L_2**. Be sure to include the comma. Then press **Enter** for the results.

Creating a Histogram

- Press **Stat**
- Select **Edit** by pressing **Enter**
- To clear the list L_1 use the up arrow to move up and highlight L_1
  Press **Clear** and then **Enter**. The entire list should be deleted.
- Enter the class mid-points in L_1, pressing **Enter** after each value is entered. Then enter the corresponding frequency in L_2, pressing **Enter** after each value is entered. If you make an error, highlight the one that needs correcting by using the up and down arrows. Then retype it or delete the error and retype it.
- Press **2nd** and then **Y=**
- Select **Plot 1** by pressing **Enter**
- Highlight **ON** and press **Enter**. (This will turn on plot 1)
- Under **Type** use the right arrow to select the histogram by highlighting it and pressing **Enter**. (Histogram is the icon that looks like a bar graph. First row, Third column)
- The x-list should be the list where the data is located and frequency should be 1.
- Press **Zoom**
- Select **9: Zoom Stat**
- Your histogram should appear. If you are seeing some extra line, press **Y=** and make sure all of the equations have been deleted. Then try **Zoom Stat** again. If you wish to adjust your classes to a certain class width go to **Window**. Set your **XSCL** to the desired class width and adjust the maximums and minimums if desired. Then **Graph.**

Box Plot (Box and Whisker Plot)

- Press **Stat**
- Select **Edit** by pressing **Enter**
- To clear the list L_1 use the up arrow to move up and highlight L_1
  Press **Clear** and then **Enter**. The entire list should be deleted.
- Enter the values in L_1, pressing **Enter** after each value is entered. If you make an error, highlight the one that needs correcting by using the up and down arrows. Then retype it or delete the error and retype it.
- Press **2nd** and then **Y=**

- Select **Plot 1** by pressing **Enter**
- Highlight **ON** and press **Enter**. (This will turn on plot 1)
- Under **Type** use the right arrow to select the box plot by highlighting it and pressing **Enter**. (Box plot is the icon in the second row second column)
- The x-list should be the list where the data is located and frequency should be 1.
- Press **Zoom**
- Select **9: Zoom Stat**
- Your box plot should appear. Press **Trace** and then use the left and right arrow buttons to see the values of the minimum, Q1, Q2, Q3, and the maximum.

To find the Linear Correlation Coefficient (r)

- Press **Stat**
- Select **Edit** by pressing **Enter**
- To clear the list L_1 use the up arrow to move up and highlight L_1
  Press **Clear** and then **Enter**. The entire list should be deleted.
- Enter the values in L_1, pressing **Enter** after each value is entered. If you make an error, highlight the one that needs correcting by using the up and down arrows. Then retype it or delete the error and retype it.
- Press **Stat**
- Use the right arrow key to highlight **Tests**
- Select **E: LinRegTTest…** by scrolling down using the down arrow, then press **Enter**
- The x-list should be the list where the x values are stored (L_1) and the y-list should be where the y values are stored (L_2). Freq should be 1.
- Then highlight **Calculate** by using the down arrow and press **Enter**
- Several values will be displayed. Use the down arrow to scroll down until you see what r equals. (r is at the very bottom of the list.)

To find the Linear Regression Equation ($y = b_0 + b_1x$)

- Press **Stat**
- Select **Edit** by pressing **Enter**
- To clear the list L_1 use the up arrow to move up and highlight L_1
  Press **Clear** and then **Enter**. The entire list should be deleted.
- Enter the values in L_1, pressing **Enter** after each value is entered. If you make an error, highlight the one that needs correcting by using the up and down arrows. Then retype it or delete the error and retype it.
- Press **Stat**
- Use the right arrow key to highlight **Calc**
- Select **LinReg(a+bx)** and press **Enter**
- Enter **L_1,L_2** and press enter
- The calculator will give information for the equation of the line of least squares.

- If you wish to have the calculator graph the line:
  - Press **Y=**
  - Select **VARS**
  - Use the right arrow to highlight **EQ**
  - Select **1: RegEQ** and press **Enter**
  - Press **Graph**
    - If you can not see the line, press **Zoom** then select **9:ZoomStat**

Confidence Intervals

If you are using given statistics:

- Press **Stat**
- Use the right arrow button to highlight **TESTS**
- Choose the appropriate test:
  - **7: ZInterval** for estimating means with large sample ($n > 30$)
  - **8: TInterval** for estimating means with small sample ($n \leq 30$)
  - **A: 1-PropZInt** for estimating proportions
- Press **Stats**
- Enter the requested values and then enter the decimal value for the confidence level.
- Press **Calculate**

If you are using a data list:

- Press **Stat**
- Select **Edit** by pressing **Enter**
- To clear the list L_1 use the up arrow to move up and highlight L_1
- Press **Clear** and then **Enter**. The entire list should be deleted.
- Enter the data values one at a time, pressing **Enter** after each value is entered. If you make an error, highlight the one that needs correcting by using the up and down arrows.
- Press **Stat**
- Use the right arrow key to highlight **Calc**
- Select **1:1-VarStats** by pressing **Enter**
- If you want the calculations done on the values stored in L_1, press **Enter**
  If you want the calculations done for another list you must type the list name and then press **Enter**
- Record the mean and the standard deviation
- Press **Stat**
- Use the right arrow key to highlight **Tests**
- Choose appropriate test. (See above)
- After selecting the appropriate test, highlight **Data**

- Record S_x for σ. Enter the decimal value for the confidence level.
- Press **Calculate**

Testing a claim about a mean (Large Samples n > 30)

- Press **Stat**
- Use the right arrow to highlight **Tests**
- Select **Z-Tests**
  - If given statistics:
    - Highlight **Stats** and press **Enter**
    - μ0: Enter the value from your null hypothesis
    - σ: You may use *s* if n>30
    - x: enter the mean from your sample
    - n: enter your sample size
    - Highlight the statement that appears in the alternative hypothesis
    - Highlight **Calculate** and press **Enter**
  - If given data:
    - Highlight **Data** and press **Enter**
    - μ0: Enter the value from your null hypothesis
    - σ: You may use *s* if n>30
    - List: enter the list with the values
    - Freq: 1
    - Highlight the statement that appears in the alternative hypothesis
    - Highlight **Calculate** and press **Enter**

Testing a claim about a proportion

- Press **Stat**
- Use the right arrow to highlight **Tests**
- Select **5: 1-PropZTest** and press **Enter**
  - p0: enter the value from your null hypothesis
  - x: number of successes in your sample
  - n: sample size
  - Highlight the statement that appears in the alternative hypothesis
  - Highlight **Calculate** and press **Enter**