Basic Instructions for the TI-86 Graphing Calculators

We want to get the basic descriptors, scatterplot, correlation coefficient, and linear regression equations for the following data.

<table>
<thead>
<tr>
<th>Age (months)</th>
<th>36</th>
<th>48</th>
<th>51</th>
<th>54</th>
<th>57</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height (cm)</td>
<td>86</td>
<td>90</td>
<td>91</td>
<td>93</td>
<td>94</td>
<td>95</td>
</tr>
</tbody>
</table>

Note: these directions assume you haven’t substantially altered the calculators basis settings. If you have please see me.

**Entering Data**

To enter data starting on the home screen, hit the `STAT` function key, and chose the edit option.

You should have three lists – xStat, yStat, fStat

**To clear these lists of unwanted data**

- Use the up key to move the cursor into the list name area and press the `CLEAR` key to delete the data in that particular column.
- Repeat for the other columns as necessary.

**To enter data**

- Enter the x and y values in the appropriate columns.
- In the fStat column enter the frequency (the number of times the data point appears) in the list. For our purposes this should be a one. When you are done, you should get something like this:

  - Make sure all the columns contain the same number of values or you will get a dimension error when you try to compute the various statistical results we are after.

Press `EXIT` to return to the home screen.
**Scatterplot**

Starting from the home screen, press the [GRAPH] key.

If you have any equations selected to plot (equal sign with a black box around it), move the cursor down to them and press the SELCT key to deselect the equation.

Move the cursor over the Plot1 area at the top of the screen. Press enter. This should highlight Plot1 and selects the plot. To deselect the plot, reverse this procedure.

Press the ZOOM menu item. Press the more key. You should now see a ZDATA menu item (Sets the range values for the graph to values to display your data). Press ZDATA and you should get a scatterplot like this:

![Scatterplot Image]

Press the [CLEAR] key to remove the menu.

You can press the [GRAPH] key and then select the trace menu item to use the arrow keys to trace along the data points if you are interested) the values are displayed along the bottom of the screen.

![Scatterplot with Trace Image]

Press the Press [EXIT] to return to the home screen.

**Basic Descriptive Statistics, Linear Regression, and Correlation Coefficient**

Starting from the home screen, hit the [STAT] function key.

Select CALC from the STAT menu. Then you can select (not all at the same time)

- OneVa to get basic descriptors for the variables in xStat
- TwoVa to get basic descriptors for the variables in xStat and yStat.
- LinR to get the coefficients of the regression equation as well as the correlation coefficient.

Press [ENTER] to view the results.
Plotting the Regression Line on the Scatterplot

Starting from the home screen, hit the [STAT] function key.

Select CALC from the STAT menu. Select LinR.

Before pressing [ENTER], type (y1) after LinR to put the results in the equation editor.

⚠ You can type y2, y3, …, y99 and put the coefficients of the regression equation in any of the 99 positions in the equation editor. Also, the y must be lower case.

Press [ENTER] the regression coefficients will display.

Press the [GRAPH] key and select the y(x)= menu item. You should see the linear regression equation in the y1 line.

Press the ZOOM menu item. Press the more key. You should now see a ZDATA menu item Press ZDATA and you should get a scatterplot along with the regression line that looks like:

![Scatterplot with regression line](image)

Note: Your calculator can do many of the plots that we’ve done class, you will need to read your manual to do these plots.