STAT PLOT
SCATTER/XYLINE
TI-83 QUICK REFERENCE

The STAT PLOT feature is used to plot statistical data stored in lists. Procedures for using all the various plot forms are similar and can be illustrated with the SCATTER and XYLINE plots.

1. Enter the X-data and the Y-data in separate lists. You may use the lists L_1 - L_6 or lists which you name.

2. Deselect all functions in the Y= screen except any which you may wish to compare to the plot of the data.

            STAT PLOT
3. Press [2nd] [Y=] to activate the STAT PLOT screen.

4. Move the cursor down to Plot 1, 2 or 3 and press [ENTER] or you may type the 1, 2 or 3 to select the plots.

5. Turn on the plot, select the type of plot, enter the lists to be used for the X- and Y-values, and select the mark (symbol) to be used to plot the data points.

6. Define the WINDOW in terms of Xmin, Xmax, etc. The ZOOM STAT may be useful here.

7. Press [GRAPH] to display the plot and any functions currently

    selected in the Y= screen.

8. When finished with your investigation of the plot(s), you should usually return to the STAT PLOT screen and turn off all plots.

**EXAMPLES**
SCATTER/XYLINE PLOTS - USING THE TI-83

Assume that we have collected data shown in the table below relating
the height and weight of the members of a swim team.

Height (inches)	Weight (pounds)
66	132
67	145
67	143
69	155
70	165
71	170
72	180

We wish to plot and analyze this data.

First enter the height data in list L1 and the weight data in L2.
Notice that each list will contain the same number of data items
(numbers) which is required for the lists used in the SCATTER or
XYLINE plots.

Press ⌈ STAT ⌉.

```
EDIT CALC TESTS
1:Edit…
2:SortA(
3:SortD(
4:ClrList
5:SetUpEditor
```
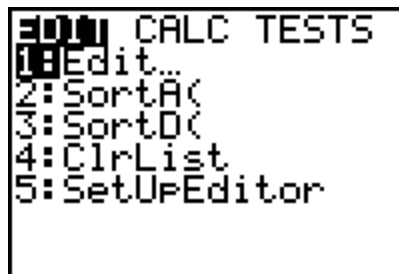
Select Edit by pressing ⌈ 1 ⌉ .

```
L1      L2      L3      1
1       4       ------
2       5
3       6
4       5
5       4
6       3
7       2
L1(1)=1
```

Your screen will most likely differ from the one above but should
have the list names, L1, etc., at the top

If you have numbers in L1 and/or L2, press the up arrow to position
the cursor over "L1", press the CLEAR key, then press the down arrow
to clear the entries in the list. Repeat this process for L2 if
numbers also appear in L2.

```
L1        L2        L3       1
▮▬▬▬▬▬    ------    ------


L1(1)=
```

Position the cursor as shown above in the first position of the L1
list column. Type in the height numbers from the table. You have
the option of pressing the enter key or the down arrow to move to the
next numbers position. If you make an error in entering any of the
numbers, move the cursor over the mistakenly entered number and type
in the correct number. When the heights are entered, use the right
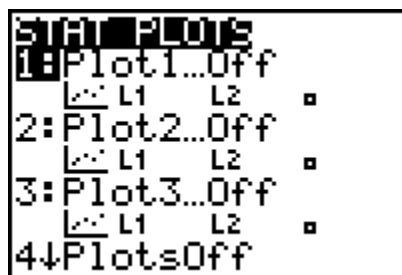arrow to move to the L2 list and enter the weight data.

Height (inches)	Weight (pounds)
66	132
67	145
67	143
69	155
70	165
71	170
72	180

```
L1        L2        L3       2
66        132       ------
67        145
67        143
69        155
70        165
71        170
72        180
L2(7) =180
```

Press [Y=] and either clear or deselect any functions present.

We will now define our stat plot. Press [2nd] [Y=]^(STAT PLOT) .

Your cursor should be over the "1:" and you should press [ENTER] to select plot 1. You could also type the 1 to select plot 1.

Scatter Plot

XYLine
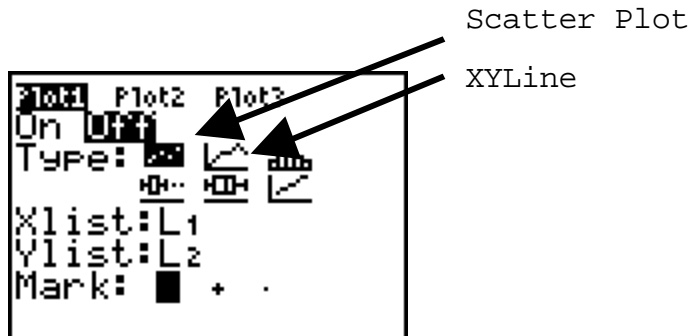
Ensure that the cursor is over "On" in the OnOff line and press [ENTER] .

There are six entries after "Type:" and we wish to select the one in the first position which shows the series of dots characteristic of a scatter plot. Move the cursor over the scatter plot symbol and press [ENTER] .

Move the cursor down to the "Xlist:" row. Most likely L1 is already listed there. If not, press [2nd] [1]^(L1) [ENTER] .

Move the cursor down to the "Ylist:" row. Most likely L2 is already listed there. If not, press [2nd] [2]^(L2) [ENTER] .
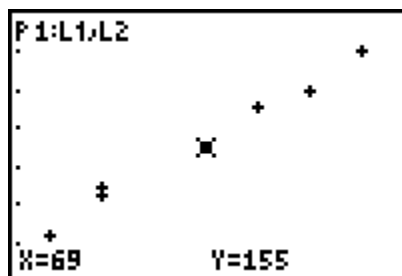
We have a choice of symbols (Mark:) to be used for the plot. Move
the cursor over the + symbol and press ENTER .
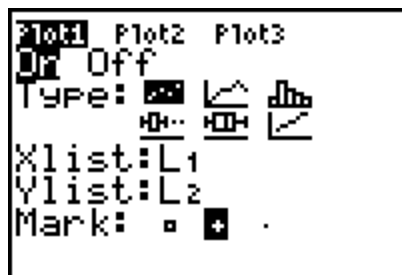
We will define our window using ZoomStat. Press ZOOM 9 .

You may TRACE these data points. Press TRACE and then press the
right arrow three times.

The screen indicates that we are displaying Plot 1, using L1 and L2
and that Y=155 when X=69.

The STAT PLOT is frequently compared to the graph of a function. The
points plotted above appear to fall near to a line. Enter the
function Y=7.4X-355 in the Y= screen and ensure that it is selected.
(This function was found using a linear regression.)

Now Press [GRAPH] and the graph of the function will be displayed as well as the scatter plot.
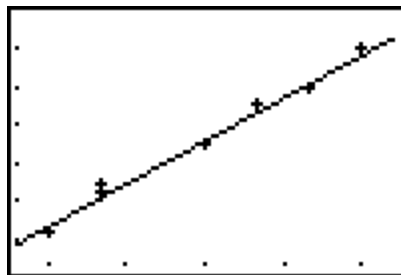
If you activate the TRACE feature now you have the option of tracing along the function or the scatter plot. Use the up or down arrows to change between the function and the scatter plot.

We will now change our scatter plot to an XYLine plot. Before we make this change, return to the Y= screen and either CLEAR or deselect the function which we entered.

Press [2nd] [Y= (STAT PLOT)] [1] to edit our definition of Plot 1.
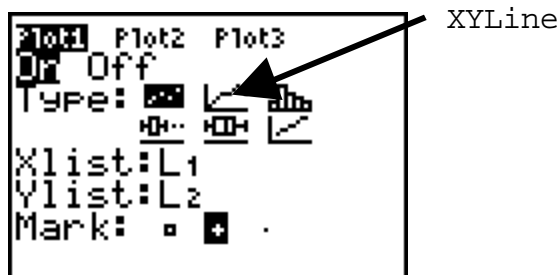
Move the cursor over the symbol for the XYLine plot in the "Type:"

line and press [ENTER] .

You have changed the plot type to an XYLine which will plot the points and connect them in the same order as they were entered in the lists. Because of this order, you should ensure that the data are entered in the lists in a logical fashion.

Now press [GRAPH] to display the plot.
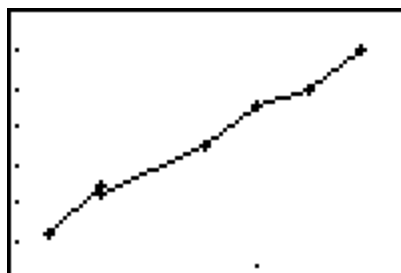
You can enter and turn on more than one plot if desired. The plot(s) will display any time you press the GRAPH key. If you do not wish to have the plots displayed, return to the STAT PLOT screen and press 4 then ENTER to turn all plots off.

Notice that option 5 turns all plots on.