

Finding the Line of Best Fit Using the TI-85

Objective: To draw the scatter diagram for the given data, find the equation of the line of best fit and graph the line of best fit on the scatter diagram.

Data	x	3	5	7	9	11	13
	y	0	2	3	6	9	11

(Clear all previously saved functions)

To enter the data:

STAT

F2: Edit

xlist Name = **xStat**

Enter

ylist Name = **yStat**

Enter

If there are values already stored for the x and y values, press **F5: CLRxy**

Enter the ordered pairs. When you hit **Enter** the cursor automatically moves to the corresponding y value.

Exit

To create the scatter diagram:

Set the viewing window:

Graph

F2 Range

xmin = **-1**

ymin = **-1**

xmax = **15**

ymax = **15**

xscl = **1**

yscl = **1**

Exit

To graph scatter diagram:

STAT

F3: DRAW (If there is a previous graph., **F5: CLDRAW**)

F2: SCAT

CLEAR (to remove the menu bars so the whole graph is visible)

Exit (brings back menu)

To Calculate the Line of Best Fit

Exit

F1: Calc

xList Name = **xStat**

Enter

yList Name = **yStat**

Enter

F2: LINR (linear regression)

a = -3.86190

b = 1.12857

corr = .99073

n=6

The calculator gives the linear equation in a + bx form. So the equation of the line of best fit is:

$$y_1 = -3.86190 + 1.12857x$$

which we are more accustomed to writing in slope intercept form as

$$y_1 = 1.12857x - 3.86190$$

This tells us the slope of the line is 1.12857 and the y-intercept is -3.86190.

The corr value tells how closely the line fits the data. The closer the number is to 1, the closer the data fits the equation. In this case, it's a very good fit.

The n value tells how many points were plotted.

To Draw the Line of Best Fit on the Scatter Diagram:

Exit

F3: Draw

F4: DRREG (Draw Regression)