Finding the Line of Best Fit Using the TI-86

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:

2nd STAT
F2: Edit

To clear previous entries, highlight the column header xStat then **clear** then **enter**.
Do the same with the yStat column.
Key in values for x in the xStat column. When you hit enter the cursor moves to the next x value.
Key in values for y in the yStat column.
The fStat column should contain an entry of 1 for each (x, y) value. Delete any extra 1's by **highlighting** them and then **Del**

Exit

To create the scatter diagram:

To graph scatter diagram:

2nd STAT
F3: PLOT
F1: PLOT 1 This will set-up the type of graph.
Highlight **ON** then **Enter**
Type: **F1: SCAT**
xlist Name = **xStat**
ylist Name = **yStat**
Mark: **F1** will select the box as a marker. Choose F2 or F3 for other markers.
Exit
Be sure the other plots are OFF. If they're not, select them by using F2 or F3 and highlight **OFF** and then **Enter**
Exit

2nd STAT
F4: Draw
CLEAR (removes the menu bars so the whole graph is visible)
Exit (brings back menu)

Set the Viewing Window:

Manually
Graph
F2: Wind
x = [-5, 30] **Pick values that include all of the points in the problem**.
xscl = 1
y = [-5, 30]
yscl = 1

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Using the Zoom Function
Graph
F3: Zoom
More
F5: ZData **Calculator will set the viewing window so all data points are displayed.**

To Calculate the Line of Best Fit

Exit back to the home screen
2nd STAT
F1: Calc
F3: LinR (linear regression)
Enter

a = -3.86190
b = 1.12857
corr = .99073

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

y1 = -3.86190 + 1.12857x

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

y1 = 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.

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

Exit
F4: Draw
MORE
F1: DRREG (Draw Regression)