

Linear Regression

[Before we begin, **QUIT (2nd MODE)** (I don't like the terminology!) will exit you from a window you don't want to be in anymore.]

1. Enter the Data

- **STAT: EDIT**

Enter the x data (be careful if dealing with years) in L_1 and the y data in L_2 . Make sure your lists are of the same length, and the data points are correct.

2. Graph the Data points

- **STAT PLOT (2nd Y=)**

Turn on the first stat plot. (Make sure Xlist is L_1 and Ylist is L_2 . It should already be set this way, and once you set it, you shouldn't have to do it again.)

- You can set the window *manually*, or

- **ZOOM: ZOOMSTAT** (menu item #9)

This will give you exactly your points that you are plotting, so this is a good starting point. However, we will want to predict points beyond that, so now you can go to **WINDOW** and just expand beyond what has already been given to you.

- **GRAPH**

4. Finding/graphing a Linear Regression equation

- In the main calculator window (**QUIT** from the graphing section)

- **STAT → CALC: LinReg (ax+b)** (menu item #4)

- After you select this command, type L_1, L_2, Y_1

(L_1, L_2 are actually not necessary, but ok; Y_1 is a must though.)

- L_1 and L_2 are on the 1 and 2 buttons, so “2nd 1” and “2nd 2”

- $,$ is right above the 7

- Y_1 is kind of interesting to find, so here it is

- **VAR→Y-VARS: Function: Y_1**

- Now you should have something that looks like **LinReg (ax+b) L_1, L_2, Y_1**

- At this point, you must hit **ENTER** to tell the calculator to actually take the Linear Regression.

- To see the linear regression equation – **Y=**

- To see the graph of the linear regression equation – **GRAPH**

5. Evaluating new data, using your Linear Regression Equation

- **TRACE**

- You must now hit up or down, so that you are tracing the linear regression, and not the points. Otherwise, it will exit you to the main screen if you try to type.

- Once you see Y_1 in the upper left corner, now you can type in your data to find the information you need. Be careful if you are dealing with years to know when $x = 0$ is.

- If you get an error message, make sure that your window is large enough to see the points you are trying to look at.