

## **Using the graphing calculator: scatter plots and least-squares lines**

Pre-calculus/Algebra II/Statistics

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### **To set the calculator**

You'll only have to do this once.

- Turn the calculator on.
- Select CATALOG. That's "2<sup>nd</sup>", then the number "0".
- Turn on diagnostics by scrolling down to "DiagnosticON," and hitting "ENTER" twice. The display will read "Done."
- Clear all other graphing data. Hit the "Y=", and clear all data from  $Y_1$ ,  $Y_2$ ,  $Y_3$  and any other lists by using the toggle buttons and "CLEAR".
- Return to the main display by selecting "QUIT". That's "2<sup>nd</sup>", then "MODE".

### **To enter data into lists**

- First, make sure there are no data in the current lists. You can check by hitting "STAT", selecting "Edit" and hitting "ENTER". Note which lists ( $L_1$ ,  $L_2$ ,  $L_3$ , etc.) contain data.
- To clear any data, hit "STAT", toggle down to "ClrList" and hit "ENTER". Then name the lists you wish to clear, separated by commas. For example, to clear  $L_1$  and  $L_2$ , hit "2<sup>nd</sup>" then "1", the comma key, then "2<sup>nd</sup>" and "2". Your display should now read "ClrList  $L_1,L_2$ ". Hit "ENTER" and the display will read "Done".
- You can enter data into lists by hitting "STAT", selecting "Edit" and hitting "ENTER". Use the toggle buttons, the number keys and "ENTER" to enter data in these lists. Remember, values for  $x$  should be entered in to  $L_1$ , and values for  $y$  in  $L_2$ .

### **To see a graph of the data**

- First make sure your calculator will graph a scatter plot using  $L_1$  for  $x$  values and  $L_2$  for  $y$ . You can check by selecting "STAT PLOT", ("2<sup>nd</sup>" then "Y="). "1:Plot1" should be "On", and underneath a small picture of a scatter plot followed by " $L_1$   $L_2$ ".
- If not, you can change any of these settings by selecting "1:Plot1" and hitting "ENTER". Use the toggle buttons and the "ENTER" key to change any settings.
- To see a graph of the data, hit "ZOOM" and then "9".

### **To determine the least-squares line and correlation coefficient**

- Hit "STAT", toggle over to "CALC", and select linear regression by toggling down to "LinReg(ax+b)" and hitting "ENTER".
- Hit "ENTER" again. The display will now show values for  $a$ ,  $b$ ,  $r^2$  and  $r$ . The equation for the least-squares line is  $y = ax + b$ , and the correlation coefficient is  $r$ .