

Finding the Line of Best Fit (Linear Regression) on a TI-Nspire

- 1) Open a new document (NOT a new page or problem). Save your existing document if you wish.
- 2) Choose: *Add Lists and Spreadsheet*.
- 3) Column A is the independent variable. Name it appropriately.
- 4) Widen column A if needed.
- 5) Column B is the dependent variable. Name it appropriately.
- 6) Widen column B if needed.
- 7) Put the data into columns A and B. Each column **MUST** have the same number of items.
- 8) Choose Linear Regression (Menu, 7, 3, 2).
- 9) Enter the following information
X List: *name of column A*
Y List: *name of column B*
1st Result Column: `c[]`
- 10) Widen columns C and D so you can see the information.
m is the gradient.
b is the y-intercept.
 r^2 is a measure of how close the points are on the line.
- 11) Open a new page (Menu, 0, 8). NOT a new problem or new document.
- 12) Choose *Add Graphs and Geometry*.
- 13) Change the largest value of *x* on the *x*-axis. Choose a 'nice' number just bigger than biggest number in column A.
- 14) Change the largest value of *y* on the *y*-axis. Choose a 'nice' number just bigger than biggest number in column B.
- 15) Change the function type to a scatterplot *s1* by repeated selecting the icon in the lower left corner.
- 16) For the *x* variable, select the variable in column A of your spreadsheet.
- 17) For the *y* variable, select the variable in column B of your spreadsheet.
- 18) You may wish to move the label from the middle of the graph as it clutters the screen.
- 19) Repeatedly select the icon in the lower left corner until the edit line shows $f1(x) = .$
- 20) Complete the formula as follows: $f1(x) = m \cdot x + b$ {Note: the \cdot is a times sign}
You should see the graph of the line of best fit.
- 21) Open a new page (Menu, 0, 8). NOT a new problem or a new document.
- 22) Choose *Add Calculator*.
- 22) To find *y* for a given *x* (for example to find the value of *y* when $x = 8$):
Type: $f1(8)$ and press [enter]. {this is called **Evaluating**}
- 23) To solve for *x* for a given *y* (for example to find the value of *x* when $f1(x) = 50$):
Press: Menu, 3, 1. You should see: $solve()$
Complete the instruction: $solve(f1(x)=50,x)$ and press [enter]. (this is called **Solving**)

Note that this process can also be used to fit other functions to data, such as quadratic functions, power functions, exponential functions, etc.