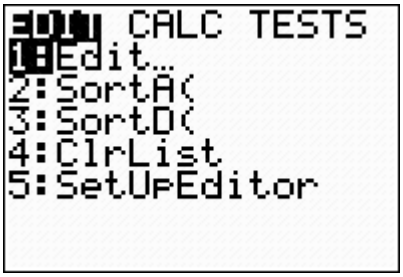
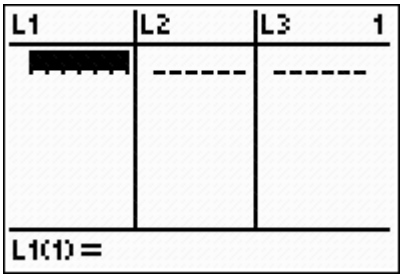
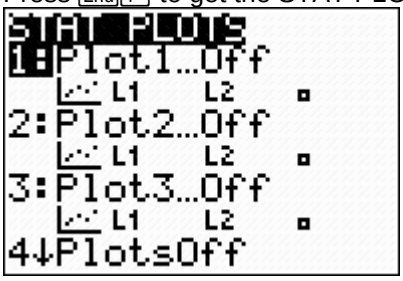
Regression on the TI-84 (finding the line of best fit to the data)

Enter the data into the lists of your calculator by pressing
[STAT][ENTER] to get the list screen. Enter the data (x-values in L1, y-values in L2)



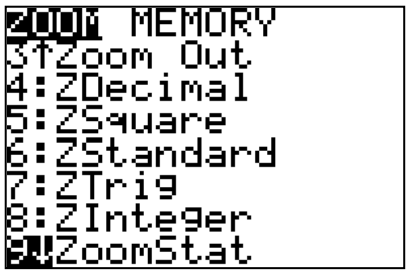


Press [2nd][Y=] to get the STAT PLOT screen.

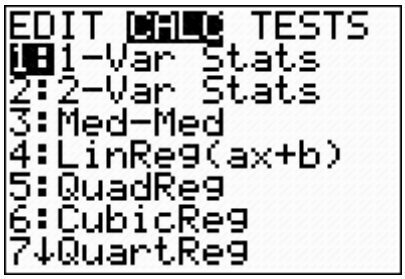


Press [ENTER] and set up as shown.

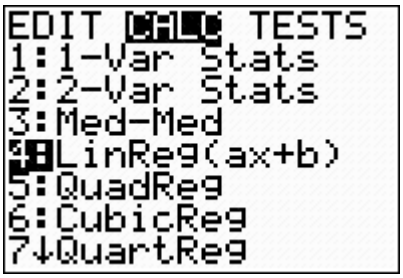
Press [WINDOW] and set up appropriately
or choose Zoom:Stat.



Press [STAT][▸] to get this screen.

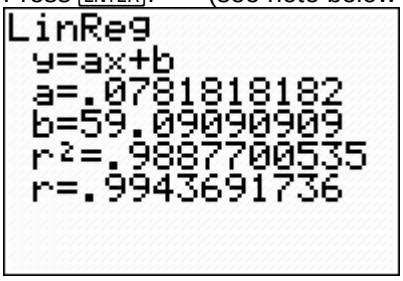


If the data looks linear,
select 4:LinReg(ax +b) as shown.

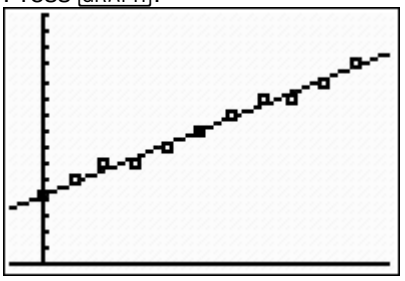


Press [ENTER][2nd][L1][,][2nd][L2][,][VARS][▸][ENTER][ENTER]
to get this screen. This will calculate the best fitting line
for your data whose x-values are in L1 and y-values are in L2.
Your regression equation will appear in Y1.

Press [ENTER]. ***(see note below if no r and r^2)

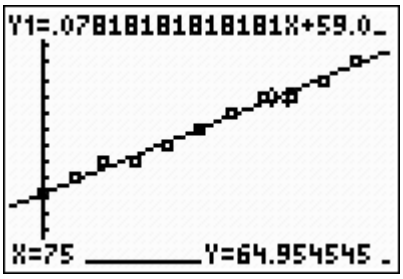


Press [GRAPH].

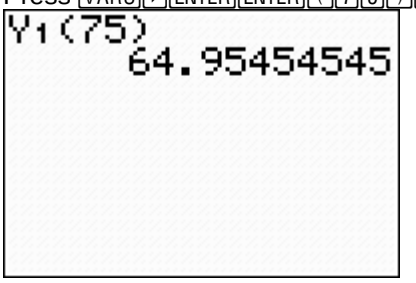


You can evaluate the function as shown. For example, evaluate for x = 75 by performing one of the following:

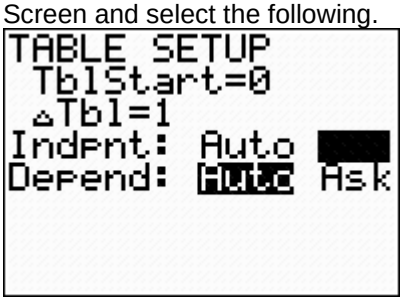
Press 2nd TRACE ENTER 7 5 ENTER.



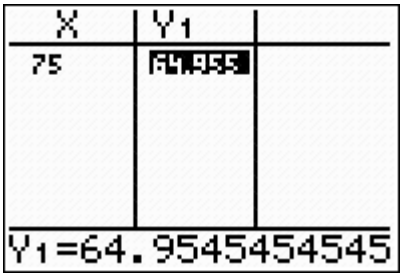
On the home screen,
Press VARS ▸ ENTER ENTER (7 5) ENTER.



Press 2nd WINDOW to get to the Table Setup Screen and select the following.



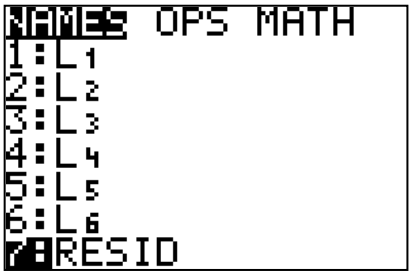
Press 2nd GRAPH 7 5 ENTER.

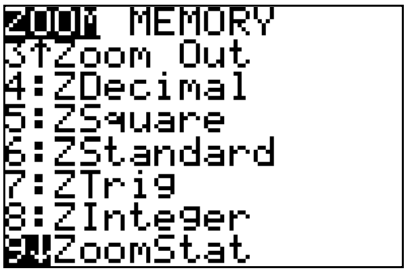


*** If you did not get r and r^2, you will need to turn your diagnostics on as follows.
Press 2nd 0 to get the Catalog, scroll down until you see Diagnostics On. Press ENTER ENTER to get the message "Done".

Recalculate the LinReg and this time you will see r and r^2. If you really want to understand what they are, take AP Stats!

Residuals are calculated as the difference between the actual y-value from the data and the predicted y-value (from the regression equation). Plotting these will help you determine (along with r and r^2) whether or not the model is appropriate. **Each time you calculate a new regression equation, your calculator automatically creates a new list of residual values.** Set up the residual plot as shown. Then choose Zoom:Stat.





Modify accordingly for other models.