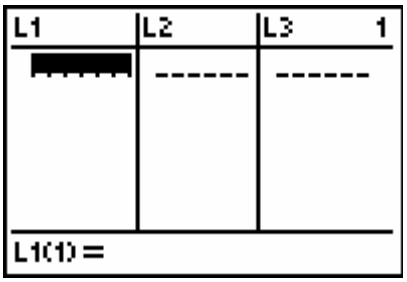
TI Technology Guide for The USA's Expanding Weight Problem

TI-83 Plus and TI-84 Plus Families

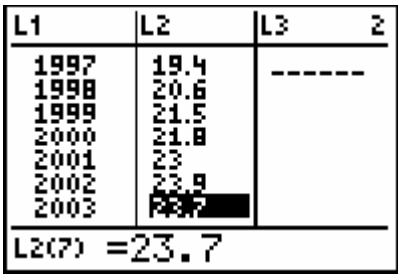
Creating Lists of Data, Displaying the Graph, Using the Regression Capabilities of the Calculator, and Predicting Using the Regression Model

Creating Lists of Data

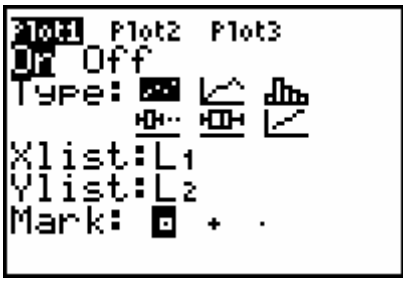
1. To enter the data from the Snapshot in the activity, press [STAT] and select **1:Edit** to access the **List Editor** window. Be sure to clear any existing data in the lists by highlighting the list name and pressing [CLEAR] [ENTER]. If you see a list other than L1 through L6, press and select [STAT] 5:SetUpEditor [ENTER] and then follow the above instructions.



2. Move the cursor to the first data position in L1. Enter data from the table that represent the years shown. Move the cursor to the first data position in L2 and enter the corresponding percentage for that year.



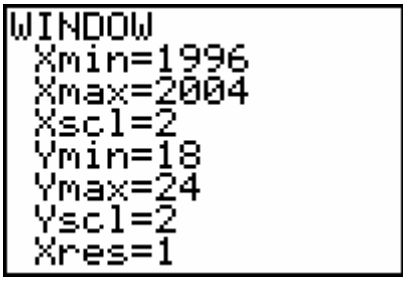
3. Access the STAT PLOTS menu screen by pressing [2nd] [Y=]. Select (press [ENTER] or the number 1) 1:Plot1 to get the screen shown. Notice that Plot1 and On are highlighted To turn on or off any plot, place the cursor over the name, press [ENTER], then select either On or Off, and press [ENTER] again. This process acts like a toggle switch to turn the plots on and off the graphing display. Plot1 should have the same settings as shown at the right.



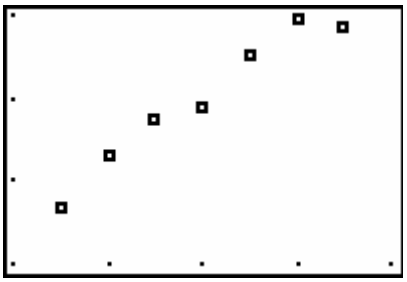
TI Technology Guide for The USA's Expanding Weight Problem

TI-83 Plus and TI-84 Plus Families

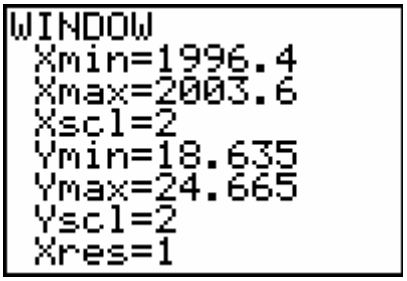
4. To insure that all the data points are visible, press [WINDOW] and enter values for the x-axis and y-axis that contain the range of values from both sets of data shown in the graphic (see suggested values at the right).



5. Press [Y=] and clear any equations listed. Press [GRAPH] to view the scatter plot. Years (L1) are on the horizontal axis, and percentages (L2) are on the vertical axis. Press [TRACE] and use the [◄] or [►] keys to read the values of the data points.



6. Another way to set the window for a scatter plot is to press [ZOOM] [9]. This will select 9:ZoomStat which will automatically set the viewing window and display all the data points from the scatter plot. You can view the new window settings (as shown on the right) by pressing [WINDOW].

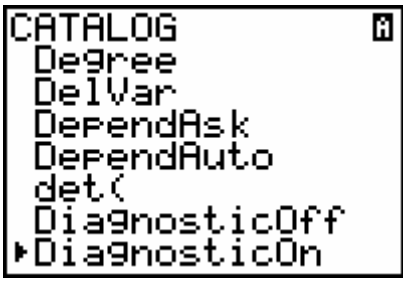


TI Technology Guide for The USA's Expanding Weight Problem

TI-83 Plus and TI-84 Plus Families

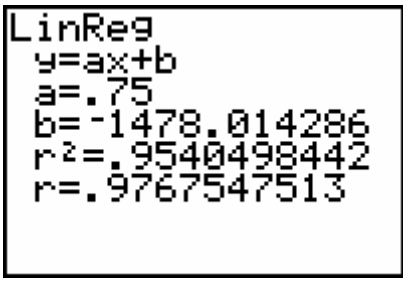
Regression Capabilities of the Calculator

7. To activate the values of r (correlation coefficient) and r^2 (coefficient of determination) for the regression analysis press [2nd][CATALOG] D and use the [▼] to find DiagnosticOn and press [ENTER][ENTER]. (If you repeat this step but choose DiagnosticOff the display of the values of r and r^2 will be turned off.)



8. To use the regression capabilities, press [STAT][▶] to access the CALC menu. Select **4:LinReg** and enter [2nd][L1] [,] [2nd][L2] [,] [VARS][▶][1][1] as shown at the right.

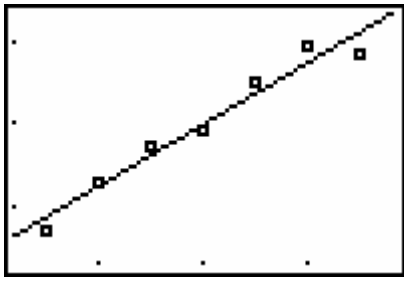
9. Press [ENTER] to have the handheld calculate the linear model and the values for r and r^2.



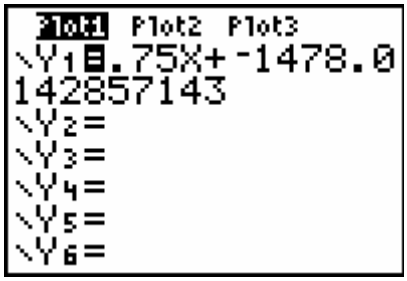
TI Technology Guide for The USA's Expanding Weight Problem

TI-83 Plus and TI-84 Plus Families

10. Press [GRAPH]. The linear model and the scatter plot are displayed.



11. Press [Y=] to view the function. Notice that Plot 1 is highlighted, which indicates that the data points for L1 and L2 are showing on the graph. The = beside Y1 is also highlighted, which indicates that the function determined by the regression capabilities is also showing on the graph. Pressing [ENTER] when the cursor is in either of these highlighted areas acts as a toggle to turn on or off the display of that component on the graph.



12. Press [2nd][QUIT][CLEAR] to return to the home screen. Press [VARS][▸][1][1][(][2][0][1][0][)] to use the linear regression model to predict the percentage of the U.S. population that will be obese in the year 2010.

13. Press [ENTER]. The linear model predicts that about 29.5% of the U.S. population is expected to be obese by 2010.