

THE PHONE BILL PROBLEM TI-92 STYLE

c:\winword\

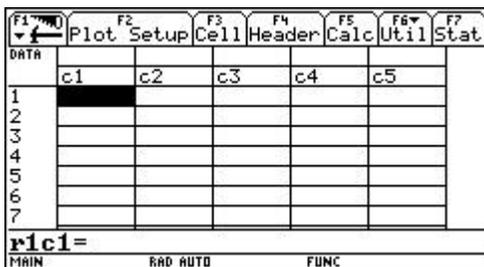
- Turn on the TI-92.
Press APPS, 6 Data/Matrix Editor
3 New



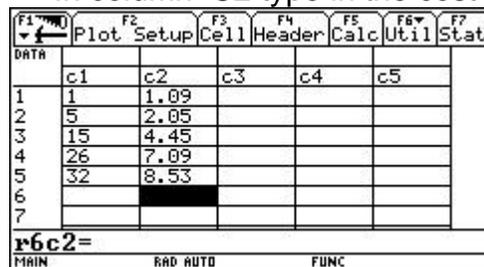
- For Type: Data
Folder: nov2497
Type in phone for variable and <Enter> twice



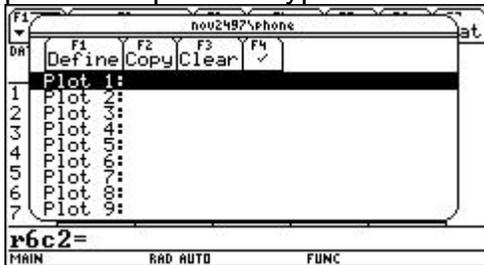
- This screen should appear:



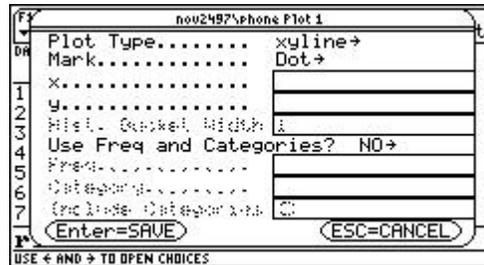
- In column C1 type in the length of call (in min.)
In column C2 type in the cost of the call (in \$)



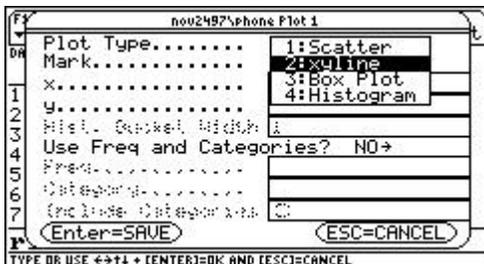
- Next we want to setup how we want to plot these points. Type F2 for Plot Setup.



- Press F1 to Define the Plot:



- For Plot Type, press the right cursor to see the submenu:



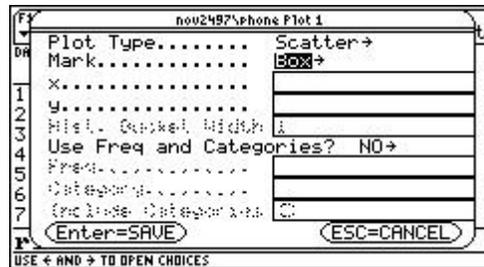
- Move cursor to highlight 1: Scatter and <Enter>



9. Cursor down to Mark and press the right cursor once to see the submenu:



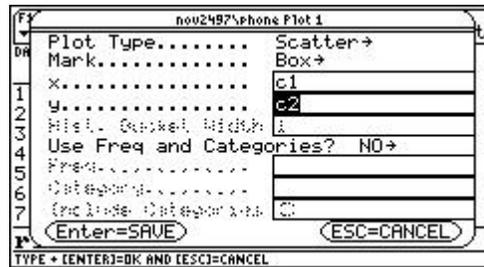
10. Cursor to 1: Box and <Enter>



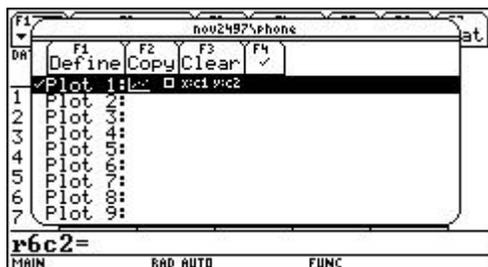
11. Cursor down to x... and type c1 and <Enter>



12. Cursor down to y... and type c2 and <Enter>



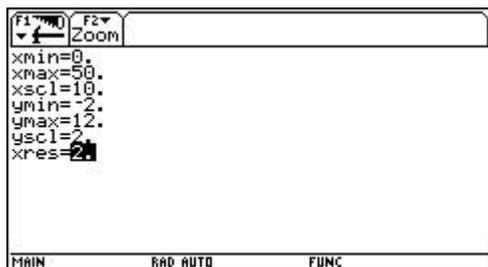
13. Press <Enter> another time:



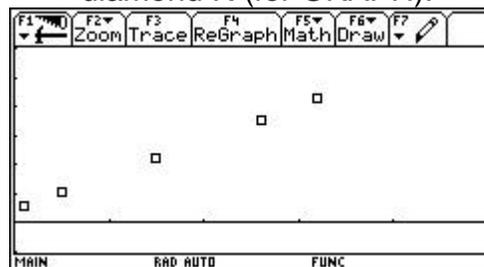
14. Type green diamond E (window) to set window size:



15. Type in min and max values as below:



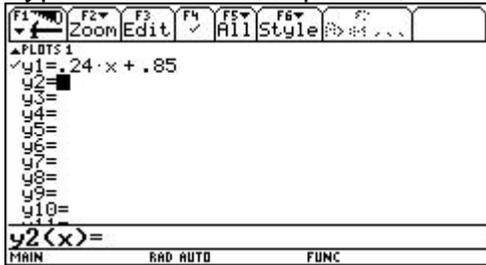
16. To view plotted points, press diamond R (for GRAPH):



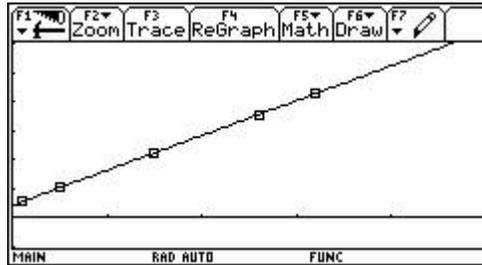
17. At this time, after all the "ooh's" and "aah's" by the students, you would want them to discuss what type of relationship this is. Hopefully they will decide that it is a linear relationship, that is, it appears that the points can best be connected with a line. Now to come up with an equation that we can use to "model" this behavior.

18. My suggestion is to give each group of students a different pair of points to find the equation of the line that contains those two points. First find the slope, m , and then the y -intercept, b . Then have the students type their equation into $y1 =$ and GRAPH (diamond R). More "ooh's" and "aah's" should follow.

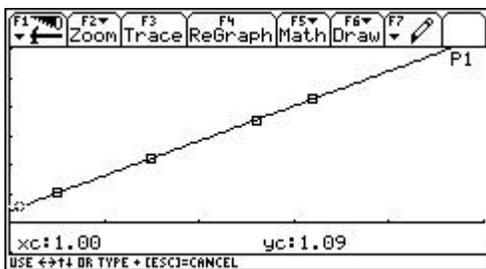
19. Since this data is EXACTLY linear, any linear equation (correctly found) will fit the data perfectly: $y_1 = .24x + .85$
Type diamond W, equation, <Enter>



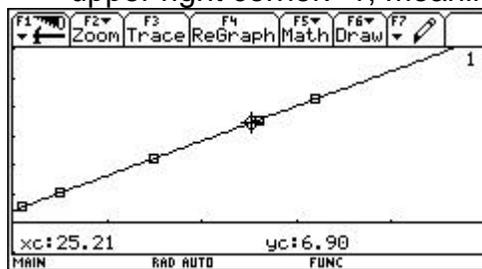
20. Type diamond R (GRAPH) to view the graph:



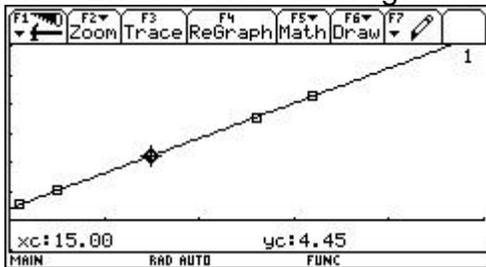
21. It looks like a pretty good fit, but just HOW GOOD. Press F3 (Trace)



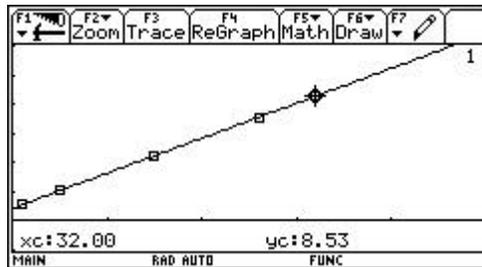
22. Notice in the upper right corner P1. That means that you are tracing on Plot 1. So press the down cursor once until 1 is in upper right corner. 1, meaning Y1.



23. Type in 15, this means $x = 15$ and <Enter>. The cursor "goes" there.



24. Type in 32 and <Enter>.



Ask your students to tell you what this means. That when the call is 15 minutes long, the model equation in Y1 says that the call should cost \$4.45. But ...

Discuss what this means. Have your students explore here a little.

25. Continue with "The Phone Bill Problem" questions.