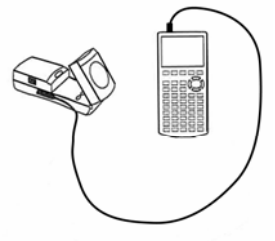
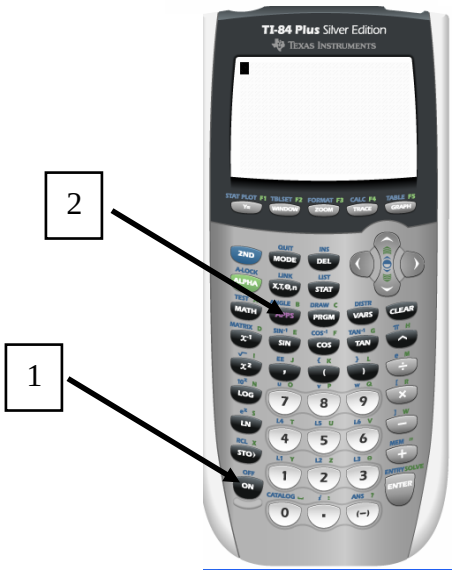
Part 1: CBR Setup Using a TI-83 Plus/TI-84 Plus

1. Connect the calculator to the CBR using the graph link cable.



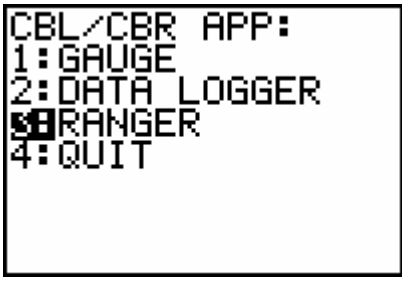
2. Press [ON] (1) then Press [APPS] (2).



3. From the APPLICATIONS Menu, select **CBL/CBR**.

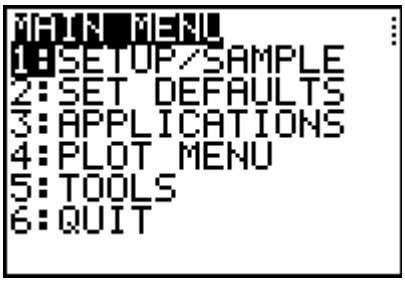
4. When the screen to the right appears, press any key to continue.

5. From the **CBL/CBR APP** menu, select the **RANGER** program.



6. When the screen to the right appears, press [ENTER], to continue.

7. From the **MAIN MENU**, select **SETUP/SAMPLE** and press [ENTER].



8. Use the arrow keys [▲] and [▼] on the calculator to move up and down the list. Press [ENTER] to change REALTIME, DISPLAY, BEGIN ON, SMOOTHING and UNITS to the settings shown to the right. Use the number key to change TIME (S) to 3. Finally arrow up so the [▶] is next to START NOW.

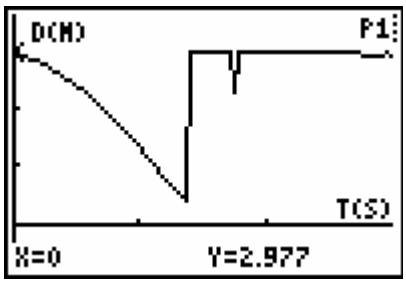
9. Press [ENTER]. The following screen should appear:

Part 2: Using a CBR to collect the data.

1. Place the CBR on the floor next to a meter stick so that the action figure will be traveling toward the CBR. Be sure the CBR is off to the side enough so that it will not be hit by the action figure. Also tilt the top of the CBR so that the face of the CBR is perpendicular to the zip line. Be sure it will pick up the movement of the action figure without interference from other objects.

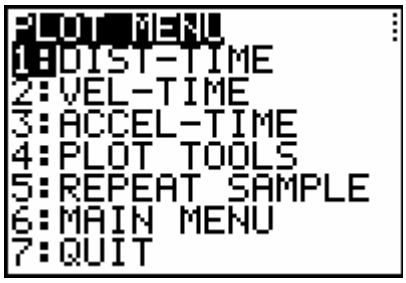
2. The CBR operator should press [ENTER] on the calculator when he or she says, "GO."

3. The calculator will say, TRANSFERRING……, then a graph should appear. The graph should be similar to the one on the right.



> Note: If your graph is not similar to the graph on the right, something may be interfering with the CBR or you may not have positioned the CBR correctly. Try moving to a different location and check to be sure nothing is in the path of the CBR.

4. If you are not satisfied with your graph, press [ENTER]. The screen to the right should appear.



5. Select REPEAT SAMPLE and press [ENTER].

6. Once the screen to the right appears, you are ready to repeat the trial.

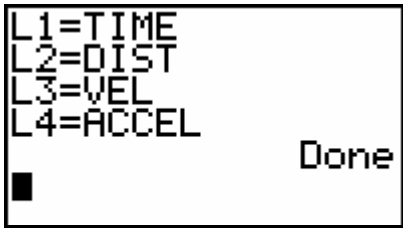
> When you are satisfied with your graph, follow the directions in Part 3.

Part 3: Graphing a Function Rule over the Scatterplot.

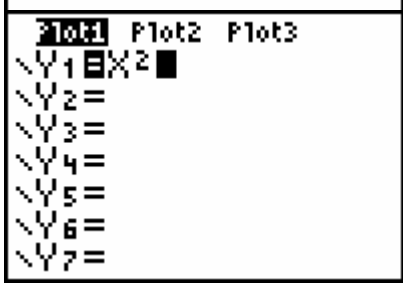
1. To graph a function rule over the scatterplot, press ENTER. The screen to the right should appear.

2. Select QUIT and press ENTER. (Your data and graph will not be lost.)

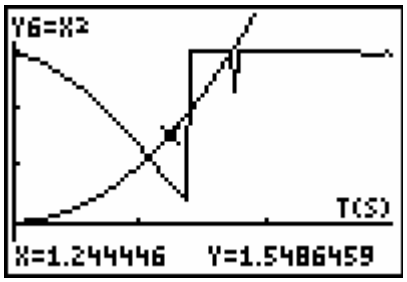
3. The screen to the right should appear. (This screen tells you Time was stored in List 1, Distance in List 2, Velocity in List 3 and Acceleration in List 4.)



4. Press Y= on the calculator and enter your function.



5. Press GRAPH on the calculator to graph your function.



Repeat steps 5 and 6, adjusting your rule until it fits the data.