Math 122

Calculator Instructions for plotting data and finding formulas

1. Preparing the STAT editor:

First steps: If you are plotting points for the first time or you haven’t used the Statistics editor for a while, start here.

Turning ON the STAT PLOT:
Go to the STAT PLOT menu by pressing \textbf{2nd} Y= \textbf{and then press \textbf{ENTER}} with the cursor on 1:Plot 1
Turn on the STAT PLOT by pressing \textbf{ENTER} with the cursor on ON and highlight the Type and Mark as shown

Clearing the STAT editor:
To clear the statistics editor press the \textbf{STAT} button and then \textbf{4} (ClrList)
Now type in \textbf{2nd} \textbf{1} to get L 1, then type a comma , and follow it with \textbf{2nd} \textbf{2} to get L 2, then press \textbf{Enter}

2. Recognizing data type

Example: Enter the table below in the statistics editor:

\begin{tabular}{rrrrrrr}
    \textit{x} & 0 & 1 & 2 & 3 & 4 & 5 & 6 \\
    \textit{y} & -7 & -4 & -1 & 2 & 5 & 8 & 11 \\
\end{tabular}

To put data into the statistics editor: Press the \textbf{STAT} button and then \textbf{ENTER} with the cursor on EDIT
Begin entering data by putting \textit{x} values in L 1 and \textit{y} values in L 2
Go to the \textbf{ZOOM} menu and press \textbf{9} (Zoom Stat) and the graph will follow.

Now that we recognize this as a linear function, we should find the equation of the function.

3. Finding the formula (Linear example, \#2 continued):

Press the \textbf{STAT} button
Use the \textbf{Right Arrow} to move over to CALC, then \textbf{Down Arrow} to 4:LinReg(ax + b) and press \textbf{ENTER}
In order to store the results in the y= editor, do the following:

Type a (a =
Then press the VARS button
Right Arrow over to Y-VARS and press ENTER
With the cursor on Y1 press ENTER again
Type a (a =
Press ENTER
To see that your equation matches the data, press the GRAPH button

4. Recognizing data type and finding the formula (Quadratic example):

Example: Enter the table below in the statistics editor (repeat steps 1 – 4 from #2)

<table>
<thead>
<tr>
<th>x</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>1</td>
<td>-4</td>
<td>-3</td>
<td>4</td>
<td>17</td>
<td>36</td>
<td>61</td>
</tr>
</tbody>
</table>

You should see that the data are not linear. In this case we will assume that they must be quadratic (the simplest curve).  
Press STAT then Right Arrow over to CALC, then Down Arrow to 5:QuadReg and press ENTER

In order to store the results in the y= editor, repeat steps 4 – 9 above

To see that your equation matches the data, press the GRAPH button

5. Turning Plots Off: If you don’t want to keep graphing the stats lists (or if you don’t have anything in your stats editor), go to the STAT PLOT menu (2nd Y=) and press 4 (PlotsOff) and then ENTER.

* If you get the following error when you are trying to graph something, follow the instructions above in #5.