Math 112
Notes for Statistics

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 \( \text{2nd} \ Y= \) and then press \( \text{ENTER} \) with the cursor on 1:Plot 1

Turn on the STAT PLOT by pressing \( \text{ENTER} \) with the cursor on ON and highlight the Type and Mark as shown

Clearing the STAT editor:

To clear the statistics editor press the \( \text{STAT} \) button and then 4 (ClrList) 

Now type in \( \text{2nd} \ 1 \) to get L 1, then type a comma, and follow it with \( \text{2nd} \ 2 \) to get L 2 (etc.)

2. Recognizing data type

Example: Enter the table below in the statistics editor:

<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>-7</td>
<td>-4</td>
<td>-1</td>
<td>2</td>
<td>5</td>
<td>8</td>
<td>11</td>
</tr>
</tbody>
</table>

To put data into the statistics editor: Press the \( \text{STAT} \) button and then \( \text{ENTER} \) with the cursor on EDIT

Begin entering data by putting \( x \) values in L 1 and \( y \) values in L 2

Go to the \( \text{ZOOM} \) menu and press 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. Generating Best Fit Line (Linear example, #2 continued):

Press the \( \text{STAT} \) button

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

Type a \((\)

Then press the \(\text{VARS}\) button

Right Arrow over to \(Y-VARS\) and press \(\text{ENTER}\)

With the cursor on \(Y_1\) press \(\text{ENTER}\) again

Type a \((\)

Press \(\text{ENTER}\)

To see that your equation matches the data, press the \(\text{GRAPH}\) button

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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 \(\text{STAT}\) then Right Arrow over to \(\text{CALC}\), then Down Arrow to \(5:\text{QuadReg}\) and press \(\text{ENTER}\)

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 \(\text{GRAPH}\) button

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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 \(\text{ENTER}\).

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