Math 52 Basic Statistical Functions for the TI83/TI84 (Plus)

Outline Order:
1. Entering Data
2. Getting the Descriptive Statistics
3. Getting Descriptive Statistics for a Frequency Distribution
4. To SORT Data
5. To Clear the Lists:

1. Entering Data:

1. Press the [STAT] key to get the following menu

```
1:Edit
2:SortA
3:SortD
4:ClrList
5:SetUpEditor
```

There are 3 menus to choose from: EDIT, CALC, and TESTS.
To enter data press [ENTER] while the 1:Edit choice is highlighted or just press the [1] key. The screen should change to:

```
<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>----</td>
<td>----</td>
<td>----</td>
<td>---</td>
</tr>
<tr>
<td>----</td>
<td>----</td>
<td>----</td>
<td>---</td>
</tr>
<tr>
<td>----</td>
<td>----</td>
<td>----</td>
<td>---</td>
</tr>
</tbody>
</table>
```

You can enter data into L1, L2, L3, L4, L5, or L6 (you can view L4, L5, and L6 by using the blue arrow keys to scroll over)

To enter the data into L1, type in the first data piece and press [ENTER], then the second data piece and press [ENTER], and so on.

Enter the data: 65, 67, 71, 72, 73, 84, 88, 89, 90 into L1, your screen should look like:
you can see the rest of the data by using the blue arrow keys to scroll down.

Note: The data will stay in the lists until you remove it, it will not be lost when you turn the calculator on/off.

2. Getting the Descriptive Statistics:

To find the mean, median, and standard deviation. Press the [STAT] key again and move the cursor to highlight the CALC menu, the screen should look like:

```
EDIT | CALC | TESTS
1:1-Var Stats
2:2-Var Stats
3:Med-Med
4:LinReg(ax+b)
5:QuadReg
6:CubicReg
7:QuartReg
```

The first choice (1-Var Stats) will find the basic descriptive statistics you will need, to access this, press 1 or press [ENTER] while that choice is highlighted. The screen should change to

```
1-Var Stats
```

L1 is the default list, it will be used unless otherwise noted, to be more specific, you can tell the calculator to find the 1-Var Stats for L1 (or any of the other lists), to do this type:
(The L1 key is found above the 1 key, so press [2^{nd}] and [1] to get L1)
Pressing ENTER will yield the following:

Notice the ↓ next to n = 9, this indicates that there is more information, use the blue arrow keys to scroll down. Notice all of the information that is given.

3. Getting Descriptive Statistics for a Frequency Distribution:

You can also get the calculator to acknowledge a frequency distribution such as

<table>
<thead>
<tr>
<th>x</th>
<th>Freq.</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
<td>5</td>
</tr>
<tr>
<td>67</td>
<td>6</td>
</tr>
<tr>
<td>71</td>
<td>4</td>
</tr>
<tr>
<td>72</td>
<td>8</td>
</tr>
<tr>
<td>73</td>
<td>2</td>
</tr>
<tr>
<td>84</td>
<td>5</td>
</tr>
<tr>
<td>88</td>
<td>2</td>
</tr>
<tr>
<td>89</td>
<td>3</td>
</tr>
<tr>
<td>90</td>
<td>5</td>
</tr>
</tbody>
</table>

Notice the x column is the same one we already used for L1, we can enter the frequencies into L2, your L1 and L2 should look like:
(so rather than type 65 in 5 times, we can just tell the calculator how many of each
x we have in the L2 column).

To get the descriptive statistics for data typed in this manner, we just need to tell
the calculator where the data and frequencies are, to do this type the following:

```
1-Var Stats L1,L2
```

The calculator interprets this as the data is in L1 and the frequencies are in L2,
after pressing ENTER, you should get the following:

```
1-Var Stats
\[ \bar{x} = 76.15 \]
\[ \sum x = 3846 \]
\[ \sum x^2 = 233384 \]
\[ \sigma_x = 9.379601435 \]
\[ \sigma_x = 9.26161433 \]
\[ n = 40 \]
```

Notice the numbers have changed to match the new data set.
You can scroll down to get the rest of the information.
4. To SORT Data:

From the main calculation menu (the screen you get when you first turn the calculator on) Press the [STAT] key to get:

```
4:Calc Tests
1:Edit...
2:SortA
3:SortD
4:ClrList
5:SetUpEditor
```

Choice 2 and 3 will sort the data. SortA sorts the data in ascending order, and SortD sorts the data in descending order. For example:

```
SortD(L1)
```

Will sort the data in L1 from highest to lowest, that is

```
<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>89</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>84</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

* note the data in L2 was not sorted, so the frequencies no longer correspond to the correct scores.

We can sort both lists so that the frequencies are sorted accordingly. The original L1 was in ascending order, so first we need to re-sort L1 to get back to where we started, we can do this by typing in SortA(L1) and Pressing [Enter]
after you press [ENTER] the screen will say DONE, if you go look at L1 and L2, the lists should look like:

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>84</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

L3(1)=

Notice these are the original lists.

To sort L1 and have the frequencies stay linked to the correct data in L1, type in the following:

SortA(L1)

Done will appear on the screen after you press enter.

Now when you look at the lists,

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>89</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>84</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

L3(1)=

L3(1)=
Notice that both L1 and L2 have changed, L1 has been ordered in descending order and the frequencies in L2 have been moved to stay linked to the correct data pieces in L1.

5. To Clear the Lists:

There are a few ways to clear out the data in the lists.

Method 1. Note when you press the STAT key the 4th choice is ClrList

Press [4] or scroll down to the 4th choice and press [Enter] to get

you can clear L1 by typing L1 in after ClrList and pressing [ENTER]

If you go look at the lists you should now get
Notice there L1 is now empty.

Method 2.

From the Lists of Data move the cursor to the name of the list, for example, if we want to clear out L2, then we would have

\[ L_2 = \{5, 6, 4, 8, 2, 5\} \]

Press the [Clear] key (the one by the blue arrow keys) and then move the cursor down (using the blue down arrow key) onto the first data piece (in this case the 5) when you do this L2 should clear itself out, that is;