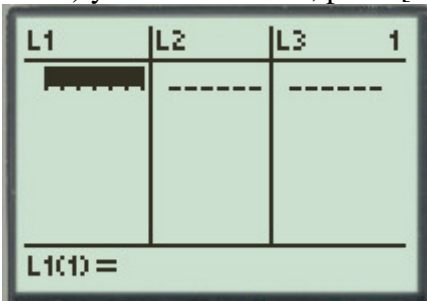# Descriptive Statistics and Graphs
TI-83 & TI-84 Calculators

Use the following sample data set:
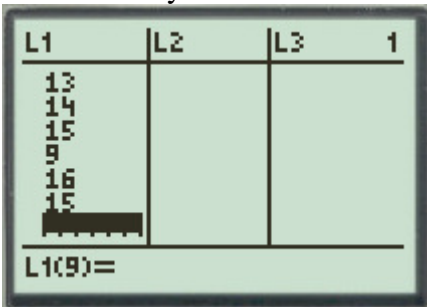
     15   13   13   14   15   9   16   15

Entering Data in the List Editor

- Press [STAT] the first option is already highlighted (1:Edit) so you can either press [ENTER] or 1.
- To clear a previously stored list of data values, arrow up to the list name (L1, L2, L3, etc…) you want to clear, press [CLEAR], then press enter.
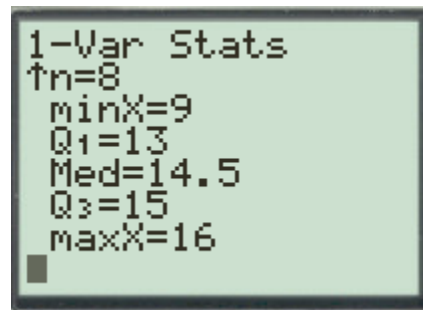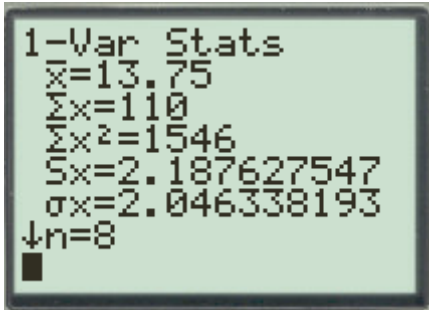

- Make sure the cursor is in the list, not on the list name (L1, L2, L3, etc…) and type the desired values pressing [ENTER] after each one. For x-y data pairs, enter all x-values in one list. Enter all corresponding y-values in a second list. Double check that the data you entered is correct.

- Press [2nd] [QUIT] to return to the home screen.
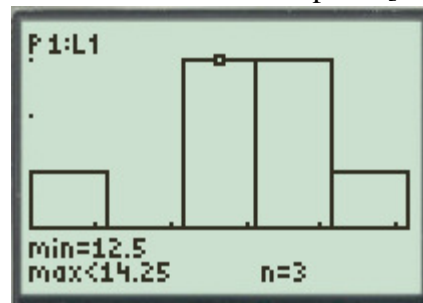
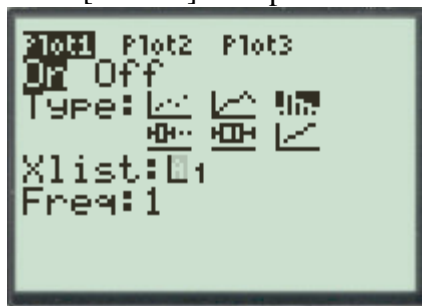## One Variable Statistics

- Press [STAT]. Use the right cursor key to highlight **CALC**. Press 1 or [ENTER] to select **1:1-Var Stats**. Press [2nd], then press the number key corresponding to your data list. Press Enter to calculate the statistics. Note: the calculator always defaults to L1 if you do not specify a data list. Press the up or down cursor keys to scroll through the descriptive statistics.
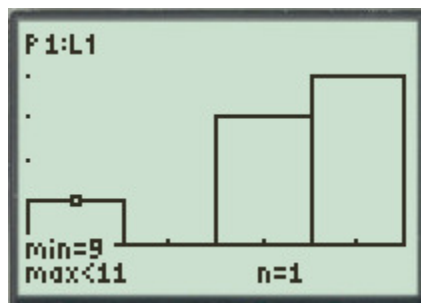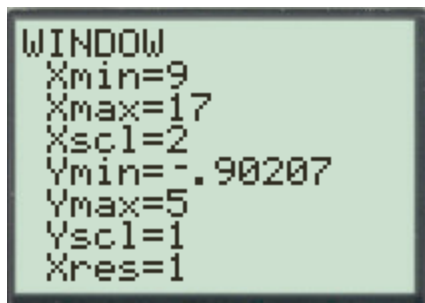
```
1-Var Stats
 x̄=13.75
 Σx=110
 Σx²=1546
 Sx=2.187627547
 σx=2.046338193
↓n=8
■
```

```
1-Var Stats
↑n=8
 minX=9
 Q₁=13
 Med=14.5
 Q₃=15
 maxX=16
■
```

- Note: Sx is the sample standard deviation, not σx. The quartiles calculated by the TI calculators differ sometimes from the quartiles computed by hand.

Histograms

- Enter your data in the list editor.
- Press [Y=] and clear any equations that are in the y-editor.
- Press [2nd] then [STAT PLOT] (above the [Y=] button.) Press 4 or scroll down to **PlotsOff** and press enter. Press [ENTER] once more to turn off all of the existing plots.
- Press [2nd] then [STAT PLOT] then press 1 or hit [ENTER] to select **Plot1.** Select **On** and press [ENTER] to activate plot 1. For "Type" select the third graph that looks like a histogram and press [ENTER]. For "Xlist" enter whichever list where your data is stored. For our example, enter L1.
- Press [ZOOM] then press 9 or scroll down to **ZoomStat** and press [ENTER].
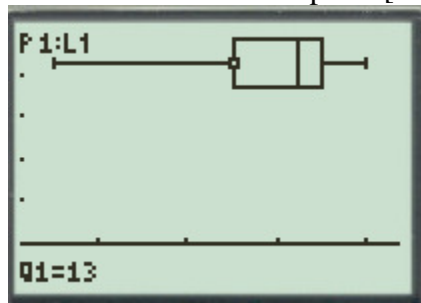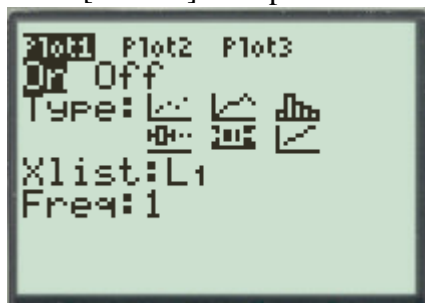
```
Plot1  Plot2  Plot3
On  Off
Type: ⌐ ⌐ ⊞
      ⊞ ⊞ ⌐
Xlist:L₁
Freq:1
```

```
P1:L1

min=12.5
max<14.25    n=3
```

- Press [TRACE] and use the left and right arrow keys to scroll along the bars. The "min" and "max" shows the minimum and maximum for each class, and "n" shows the frequency or count for each class.
- Note: ZoomStat will automatically fit the data to the window. But remember that changing the class min/max and class widths will change the appearance of the histogram.
- Press [WINDOW]. Xmin and Xmax will set the first class minimum and last class maximum. Xscl will set the class widths. You may need to adjust Ymin and Ymax to show the full graph.

```
WINDOW
 Xmin=9
 Xmax=17
 Xscl=2
 Ymin=-.90207
 Ymax=5
 Yscl=1
 Xres=1
```

```
P1:L1
min=9
max<11          n=1
```

Boxplots

- Enter your data in the list editor.
- Press [Y=] and clear any equations that are in the y-editor.
- Press [2nd] then [STAT PLOT] (above the [Y=] button.) Press 4 or scroll down to **PlotsOff** and press enter. Press [ENTER] once more to turn off all of the existing plots.
- Press [2nd] then [STAT PLOT] then press 1 or hit [ENTER] to select **Plot1.** Select **On** and press [ENTER] to activate plot 1. For "Type" select the fifth graph that looks like a boxplot and press [ENTER]. For "Xlist" enter whichever list where your data is stored. For our example, enter L1.
- Press [ZOOM] then press 9 or scroll down to **ZoomStat** and press [ENTER].

```
Plot1  Plot2  Plot3
On Off
Type: ⌐ ⌐ ⌐
      ⌐ ⌐ ⌐
Xlist:L₁
Freq:1
```

```
P1:L1
Q1=13
```

- Press [TRACE] and use the left and right arrow keys to scroll along the boxplot.
- You may need to adjust Ymin and Ymax to show the full graph.
- You can graph up to 3 boxplots simultaneously to compare 3 samples by using Plot1, Plot2, and Plot3.

Normal Quantile Plots

- Enter your data in the list editor.
- Press [Y=] and clear any equations that are in the y-editor.
- Press [2nd] then [STAT PLOT] (above the [Y=] button.) Press 4 or scroll down to **PlotsOff** and press enter. Press [ENTER] once more to turn off all of the existing plots.
- Press [2nd] then [STAT PLOT] then press 1 or hit [ENTER] to select **Plot1.** Select **On** and press [ENTER] to activate plot 1. For "Type" select the sixth graph that looks like a normal quantile plot and press [ENTER]. For "Xlist" enter whichever list where your data is stored. For our example, enter L1.

- Press [ZOOM] then press 9 or scroll down to **ZoomStat** and press [ENTER].