

Frequency Distributions on TI 83/84

A **Frequency Distribution** is a list of data values (either individually or by groups of intervals), along with their corresponding frequencies (or counts).

The following chart shows the weight in kg of 30 yokozuna ranked sumo wrestlers.

| Weight (kg) | Range Midpoint | Frequency |
|-------------|----------------|-----------|
| 104-115 | 109.5* | 7 |
| 116-127 | 121.5 | 5 |
| 128-139 | 133.5 | 11 |
| 140-151 | 145.5 | 6 |
| 152-163 | 157.5 | 1 |

***Note:** To enter a Frequency Distribution in the graphing calculator, you will need to have the Range Midpoint for each of class. This can be calculated by adding the lower limit of the class to the upper limit of the class and dividing by 2. For example, the first range midpoint in the data above is $104+115=219$ and $219/2=109.5$

Entering a dataset

1. Press the **STAT** key, then under the *EDIT* menu choose the first selection, *Edit...*, and press **ENTER**
2. All data should be cleared before entering current data. To do this, use the **arrow key** to scroll up so that *L1* is highlighted, press **CLEAR** then press **ENTER**. Use the **arrow keys** to scroll right and up so that *L2* is highlighted, press **CLEAR** then press **ENTER**, now both *L1* and *L2* should be cleared.
3. Enter the data points under *L1*, pressing the **ENTER** key after each number. In a Frequency Distribution the data points for *L1* will be the range midpoints.
4. After the last data point is entered into *L1*, use the **right arrow** key to move the cursor to *L2*. Enter the data points under *L2*, pressing the **ENTER** key after each number. In a Frequency Distribution the data points for *L2* will be the frequency values.
5. After the last data point is entered into *L2*, press **2ND** and then press **MODE** to exit data entry.

```

[2ND] [MODE] CALC TESTS
1: Edit...
2: SortA(
3: SortD(
4: ClrList
5: SetUpEditor
  
```

| L1 | L2 | L3 | 1 |
|-------|-------|-------|---|
| ----- | ----- | ----- | |

L1 =

| L1 | L2 | L3 | 1 |
|-------|-------|-------|---|
| 109.5 | ----- | ----- | |
| 121.5 | | | |
| 133.5 | | | |
| 145.5 | | | |
| 157.5 | | | |

L1(6) =

| L1 | L2 | L3 | 2 |
|-------|----|-------|---|
| 109.5 | 7 | ----- | |
| 121.5 | 5 | | |
| 133.5 | 11 | | |
| 145.5 | 6 | | |
| 157.5 | 1 | | |
| ----- | | | |

L2(6) =

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Descriptive Statistics are the values that show or summarize information about the data set. They include mean, standard deviation, minimum, median, maximum, etc.

Descriptive Statistics:

1. Press the **STAT** key, then use the **right arrow** to go to the *CALC* menu choose the first selection, *1-Var Stats*, and press **ENTER**.

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

2. If using a TI 84 Plus Silver Edition calculator follow the steps in part a. If using a TI 83 Plus or TI 84 Plus follow the steps in part b.

- a. TI 84 Plus Silver Edition: the screen should display prompts for *List:*, *FreqList:*, and *Calculate*. Verify that the *List* prompt displays L_1 ; if it doesn't press **2ND** key then press **1** to display L_1 . Next use the down arrow to get to *FreqList:*. Press the **2ND** key then press **2** to display L_2 . Next use the down arrow to highlight **Calculate** and press **ENTER**.

```
1-Var Stats
List:L1
FreqList:L2
Calculate
```

- b. TI 83 Plus or 84 Plus: *1-Var Stats* should appear on the calculator's main screen. Press the **2ND** key then press **1** to display L_1 . Next press **,** (the button with a comma) then press the **2ND** key then press **2** to display L_2 . *1-Var Stats L_1, L_2* should appear on the calculator's main screen. Press **ENTER** to execute the command.

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

3. Descriptive statistics such as mean (\bar{x}), standard deviation (S_x and σ_x), min, max and median, and many other statistics will be displayed on your calculator's main screen. The **down arrow** can be used to scroll down to see even more data.

```
1-Var Stats
x̄=129.1
Σx=3873
Σx²=505615.5
Sx=13.9100559
σx=13.6762568
↓n=30
```