SUMMARY STATISTICS WITH THE TI-83/84

Summary statistics are one of the most fundamental concepts in statistics. These are the numbers that we calculate when we first have a data set so that we can understand it. In our text, summary statistics are covered in chapter 3.

Most summary statistics can be found with one calculator function. First, you must enter your data.

To enter the data, press `[STAT] [ENTER]`, which takes you into the “Data Editor”. There are six lists in the data editor that... surprise!... hold data. The lists are denoted by L1, L2, ... L6. Use the direction keys to move from one list to another. If there is data in your lists, the data editor may look something like this.

![Data Editor with data](image)

If your lists are empty, it'll look like this. Find an empty list and type your data into the list. Press `[ENTER]` or `[▲]` after each entry. To clear a list, see below.

To clear a list, use the direction arrows to move the cursor onto the name of the list like this.

![Clearing a list](image)

Then press `CLEAR ▼`. You won't see that the list has cleared until you press the down arrow.

To calculate summary statistics, press `[STAT] 1 ▼` to the “CALC” menu and `[1]` or `[ENTER]` to select “1-Var Stats” which will bring that command to your home screen like this.

![1-Var Stats on Home Screen](image)

You now need to “tell” the calculator which list to calculate 1-var stats on. To do this, press `[2nd] [1]` to enter L1. Note that the names of the lists are the second functions on the 1-6 keys on the keypad. If your data is in a different list, just type in the correct location. You should now see this.

![1-Var Stats Input Screen](image)

Press `[ENTER]`. You should now see this. The \( \bar{x} \) is the mean. Since the sample and population means are calculated exactly the same way, it represents both the population mean (\( \mu \)) and the sample mean (\( \bar{x} \)). You just have to interpret/write the correct notation when you transfer it from the calculator. Skipping down the list of output,
Sx is the sample standard deviation, \( \sigma X \) is the population standard deviation and n is the sample size. Again, if the data is population data, n is N. The little arrow on the bottom left corner indicates that there’s more good stuff below. Scroll down using your \( \text{©} \) arrow to this. MinX is the smallest value, Q1 and Q3 are the first and third quartiles and Med is the median, aka Q2. MaxX is the largest value. The only summary stat you won’t get is the mode. To easily spot the mode, you might want to arrange the data in order.

To do so, enter the data, and then press \( \text{STAT} \) to get this menu. Number 2 is sort smallest to largest, 3 is sort largest to smallest. Say you want to sort smallest to largest. Press 2 and “SortA(“ is now on your home screen. Enter the name of the list after the open paren and close the paren like this. Press \( \text{ENTER} \) and the calculator will say “Done”. To view the sorted data, either type the list name on the screen and press \( \text{ENTER} \) like this. \( \text{L1} 2 \ 3 \ 3 \ 3 \ 5 \ 8 \ ... \) Note that the … after the 8 means there’s more numbers off the screen. Use the directional arrows to see them. Or you can go back into the data editor and view the sorted data there in its list.

**SUMMARY STATISTICS OF A FREQUENCY TABLE**

To estimate the mean and standard deviation of a frequency table, type the midpoints (or single values if the data is discrete) into one list and the frequencies into another list. Be sure that the frequencies are directly across from their corresponding midpoint. Use 1-Var Stat, but enter both the list holding the midpoints AND the one holding the frequencies (in that order) separated by a comma after 1-Var Stat. The calculator will know you have a frequency distribution and will calculate all the summary statistics for it.