

## Using the Graphing Calculator to Find Standard Deviation and Measures of Central Tendency

Use the following data set to find SD, mean, median, and mode.

**44          38          59          62          51          56          48          60**

### Steps to enter data:

1. Press STAT
2. Select EDIT
3. If there is anything in the lists, arrow up to highlight the list (ex L1), hit clear, then enter. This should clear the entire column. DO NOT PRESS DELETE while at the top of the list.
  - You could also go to 2<sup>nd</sup> + (MEM), and select 4 to clear all lists
4. Enter the data into L1 (if you make a mistake, go to the incorrect number and just type over it, or hit Delete to remove it. Clear will NOT get rid of the number.

### Steps to calculate:

1. Press STAT
2. Arrow to the right to CALC. Select #1 (1-Var Stats)
  - a. Make sure that the List says: L1 (if not, you can enter that by hitting 2<sup>nd</sup> then 1)
  - b. There should not be anything in the FreqList at this point, so if there is, clear that out.
3. Press ENTER or arrow down to get to Calculate, then press ENTER

\*\*\*You will then find an abundance of information

- ❖  $\bar{x}$  is the mean
- ❖ Sx is the standard deviation.
- ❖ Med is the median
- ❖ If you arrow down you will also see some other data points we will discuss later in this unit.

What is the mean? \_\_\_\_\_

What is the standard deviation? \_\_\_\_\_

What is the median? \_\_\_\_\_

**What if you were given a huge list with a lot of repeating numbers?**

1. First clear out the data from the previous problem.
  - a. See step 3 from “steps to enter data”

2. Press STAT, then EDIT

14    14    19    19    34    25    25    25    25    26    26    26    26    26  
 17    17    17    22    22    22    22    22    22    22

3. Instead of typing them all into L1, let’s make a frequency table
  - a. Let L1 be the number that appears in the list, and then next to it, in L2, put the number of times that number appears in the list
4. Create a frequency table by hand by filling in the table below.

L1	L2

5. Now to calculate, press STAT →CALC, press #1 1-Var Stats.
6. List should still say L1, but this time the FreqList should say L2 (hit 2<sup>nd</sup> 2)
7. Press ENTER or arrow down to get to Calculate, then press ENTER

What is the mean? \_\_\_\_\_

What is the standard deviation? \_\_\_\_\_

What is the median? \_\_\_\_\_

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**Practice:** Find the mean, median, mode and SD of the following data. Use a frequency table if necessary.

1.

17	23	65	94	33	33	8
57	75	44	12	11	68	39

- a. Mean ( $\bar{x}$ ) = \_\_\_\_\_
- b. Median = \_\_\_\_\_
- c. Mode = \_\_\_\_\_
- d. Standard Deviation ( $S_x$ ) = \_\_\_\_\_

2. The following data represents the birth weight of the last 15 babies born at the local hospital.

8.8    11.0    4.7    7.0    7.1    7.0    9.2    6.6    7.4    5.5    5.6    6.2    7.0    10.3  
6.2

- a. Mean ( $\bar{x}$ ) = \_\_\_\_\_
- b. Median = \_\_\_\_\_
- c. Mode = \_\_\_\_\_
- d. Standard Deviation ( $S_x$ ) = \_\_\_\_\_

3. The following data represents the cost of 10 breakfast cereals at Walmart.

3.64    3.98    3.64    3.28    3.28    2.86    2.93    3.64    3.98    3.12

- a. Mean ( $\bar{x}$ ) = \_\_\_\_\_
- b. Median = \_\_\_\_\_
- c. Mode = \_\_\_\_\_
- d. Standard Deviation ( $S_x$ ) = \_\_\_\_\_

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4. The following data represents the number of games played by 24 American League baseball players.

141	139	139	141	136	135	138	141
136	140	138	139	138	138	140	139
138	137	137	140	136	135	135	141

- a. Mean ( $\bar{x}$ ) = \_\_\_\_\_
- b. Median = \_\_\_\_\_
- c. Mode = \_\_\_\_\_
- d. Standard Deviation ( $S_x$ ) = \_\_\_\_\_

5. The following data represents the GPAs of 30 students in an honors math class.

4.2	3.8	3.6	4.3	4.0	4.2	3.8	3.7	3.8	3.9
3.9	4.0	4.0	3.7	4.0	3.9	3.9	3.6	4.2	4.1
4.0	3.5	4.2	4.2	3.8	4.0	3.8	3.6	4.1	4.1

- a. Mean ( $\bar{x}$ ) = \_\_\_\_\_
- b. Median = \_\_\_\_\_
- c. Mode = \_\_\_\_\_
- d. Standard Deviation ( $S_x$ ) = \_\_\_\_\_