

## Section 3.1

Measures of Central Tendency

Mean = Measure of the Center found by adding all the values and dividing the total by the number of values. Best to use if freq. dist. is roughly symmetric

Sample Mean      Population Mean

$$\bar{x} = \frac{\sum x_i}{n}$$

$$\mu = \frac{\sum x_i}{N}$$

### 1-VarStats

1. Input numbers, then "2<sup>nd</sup>" "mode" to exit out
2. "stat" button, "right arrow" to CALC, "enter" on 1-varstats, "enter"

Note: down arrow to see more results below and up arrow to go back up

### Mean (TI-83/84)

1. Enter Values Into L1 ("Stat" button – Edit)
2. "2<sup>nd</sup>" button, "Stat" button
3. Choose "Math"
4. Choose "Mean"
5. "Enter" button
6. "2<sup>nd</sup>" button, "1" button
7. ")" button
8. "Enter" button

1. Find the mean of the following data

25, 33, 37, 41, 42, 58, 91, 103

### Trimmed Mean

Drop the smallest and largest values and then find the mean.

Median = the measure of center that is the middle value when the original data values are arranged  
Denoted by M. Best to use if freq. dist. is skewed left or right

### Finding Median (By Hand)

1. Arrange Them in Order
2. If the number of values is odd: median is exact number in the middle
3. If the number of value is even: find the mean of two middle numbers

### Median (TI-83)

1. Enter Values Into L1 ("Stat" button – Edit)
2. "2<sup>nd</sup>" button, "Stat" button
3. Choose "Math"
4. Choose "Median"
5. "Enter" button
6. "2<sup>nd</sup>" button, "1" button
7. ")" button
8. "Enter" button

2. Find the median of the following data:

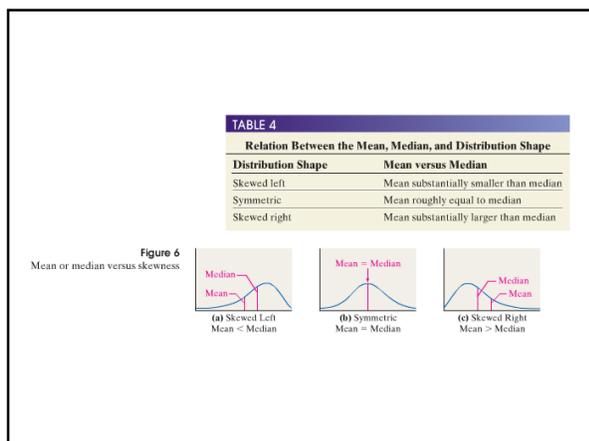
83, 25, 90, 4, 55

3. Find the median of the following data:

5, 12, 2, 53, 45, 87

### Note

A numerical summary of data is said to be resistant if extreme values (very large or small) relative to the data do not affect its value substantially



## Note

- If the data are skewed left or skewed right then the median is the better measure of central tendency. If the data are symmetric, the mean is the better measure of central tendency

4. Decide if the mean or median is a better measure for the data on the right

90  
84  
90  
91  
73  
85  
83  
90  
97  
19  
45  
78  
71  
90  
72  
76  
91

## Mode (Only By Hand)

- Mode = The value that occurs most frequently
- Bimodal = Two values occur with same greatest frequency
- Multimodal = More than 2 values occur with same greatest frequency

Note: Mode is often used where our measurement is names, categories, etc.

5. Find the mode of the following data

red, red, blue, blue, red, red, yellow, yellow,  
blue, red, red

6. Find the mode of the following data

black, yellow, black, yellow, red, orange,  
mauve

Midrange = Value midway  
between highest and lowest  
values in the data

$$\text{Midrange} = (\text{high value} + \text{low value}) / 2$$