Name: Date: Period:

Measures of Central Tendency

Mean Average	Add all the #s and divide by # of #s added.		**Mode** Most	# or #s that appear most often. You can have one, multiple or no mode.
Median Middle	**PUT #S IN ORDER FIRST!!**	Odd # of data – middle # Even # of data – add two middles divide by 2 (Average of 2 middle #s)	**Range**	Take the highest # minus the lowest #.

Lower and Upper Quartiles (also called percentiles)

To find the lower quartile (25th percentile) and upper quartile (75th percentile) **manually**:

1- The data must be in order from least to greatest.
2- Find the median (50th percentile), which divides the data into two halves.
3- The lower quartile is the median of the lower half of the data.
4- The upper quartile is the median of the upper half of the data.

Find the lower and upper quartiles: 62, 23, 27, 56, 52, 34, 42, 40, 68, 45, 83

23 27 34 40 42 45 52 56 62 68 83

LQ — **25th % ile** | **Median** — **50th % ile** | **UQ** — **75th % ile**

If we add the # 90 to the data in part a, find the revised quartiles.

23 27 34 37 40 42 45 48.5 52 56 62 65 68 83 90

$\frac{34+40}{2}$ = **37** — **LQ**

$\frac{45+52}{2}$ = **48.5** — **Median**

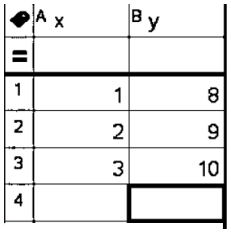
$\frac{62+68}{2}$ = **65** — **UQ**

*Note: the median and quartiles may be values in the set (example a) or they may not belong to the original set of data (example b).

1 - From **HOME**, choose the List & Spreadsheets App (#4)

2 - Arrow to the TOP of the column and NAME your list.

3 - Input your data in the cells below



4 - Press **MENU** / **4: STATISTICS** / **1: STAT CALCULATIONS / 1: ONE VARIABLE STATISTICS /** Select the column name you want to choose, press **ENTER.**

5 - The information on the right will appear on your screen

$\bar{x}$ = mean
σx = standard deviation
n = number of entries
min = minimum number
Q1 = lower quartile
Med = median
Q3 = upper quartile
max = maximum value

* To clear a list: **CTRL** W

1. Aimee wants to buy a house. Houses in her community have recently sold for: $125,000, $80,000, $140,000, $135,000, $136,000, $140,000, and $350,000. Find:

The mean ($\bar{x}$)	The median	The mode	The range

Using these different measures of central tendencies, explain which one is the best one to represent the cost of a house in Aimee's community.

2. Renaldo has marks of 75, 82, & 90 on three math tests. What mark must he obtain on the next test to have an average of exactly 85 on the 4 tests?

Measures of Central Tendency for *Grouped Data*

Mean
1. Multiply the interval by the frequency.
2. Add the products.
3. Divide by the Total Frequency.

Median
1. Calculate the total frequency.
2. Divide by 2.
3. Count the ***frequency*** until you get to that # and record the value where the frequency falls.

Mode Look for the highest frequency.

Example 1:

In the table, data is given to indicate heights (in inches) of 17 basketball players. Find:

Height	Frequency
77	2
76	0
75	5
74	3
73	4
72	2
71	1

The Mean	The Median	The Mode

Example 2:

Consider the data in the table to the right. Find:

The Modal Interval (Interval with the greatest frequency)	The Interval containing the Median

Interval	Frequency
50 - 59	1
40 - 49	0
30 - 39	9
20 - 29	4
10 - 19	15
0 - 9	21