

Algebra 1  
**Unit 4**  
 Describing Data

Monday	Tuesday	Wednesday	Thursday	Friday
			April 15 <sup>th</sup>	April 16 <sup>th</sup>
			Summary Statistics	
April 19 <sup>th</sup>	April 20 <sup>th</sup>	April 21 <sup>st</sup>	April 22 <sup>nd</sup>	April 23 <sup>rd</sup>
Data Displays Data Distributions	Comparing Data <b>Unit 4 Quiz</b> (due at midnight)	Two Way Frequency Tables	Two Way Frequency Tables	
April 26 <sup>th</sup>	April 27 <sup>th</sup>	April 28 <sup>th</sup>		
Linear Regression	Review <b>Unit 4 Test</b> (opens)	<b>Unit 4 Test</b> (due at midnight)		



## Summary Statistics

In Unit 4, we will be discussing data – both quantitative and categorical. First, we will begin with quantitative data. Quantitative data is data that is \_\_\_\_\_.

Some examples of quantitative data are:

When given a list of data, there are several different calculations we can give to describe the data.

### The Five Number Summary

The five number summary is a numerical summary of your data. It has five parts:

Minimum: \_\_\_\_\_

Lower Quartile: \_\_\_\_\_

Median: \_\_\_\_\_

Upper Quartile: \_\_\_\_\_

Maximum: \_\_\_\_\_

Practice: Find the five number summary for each of the following data sets.

\*If you are calculating by hand, the first thing you must do is order your data from least to greatest\*

10    18    14    13    17    12    12    18    14

20    28    24    26    33    25    29    27    24    26

**Measures of Center**

Mean: \_\_\_\_\_

Median: \_\_\_\_\_

Mode: \_\_\_\_\_

**Measures of Spread**

Range: \_\_\_\_\_

Interquartile Range: \_\_\_\_\_

Mean Absolute Deviation: \_\_\_\_\_

Below is a list of mens heights. Find the five number summary, mean, mode, range, and interquartile range for this data.

71 63 67 69 76 76 73 68  
71 75 69 62 69 73 64 72

Ordered data:

Minimum: \_\_\_\_\_

Lower Quartile: \_\_\_\_\_

Median: \_\_\_\_\_

Upper Quartile: \_\_\_\_\_

Maximum: \_\_\_\_\_

Mean: \_\_\_\_\_

Mode: \_\_\_\_\_

Range: \_\_\_\_\_

Interquartile Range: \_\_\_\_\_

## Summary Statistics – Using Calculator

To calculate summary statistics on your graphing calculator, follow these steps.

1) Press **STAT**, then **ENTER**.

2) To clear L<sub>1</sub>, press **↑** to go to the very top, **CLEAR**, **↓**.

**★NEVER PRESS DELETE TO CLEAR THE LIST.★**

3) Type your data into L<sub>1</sub>. Be sure to hit **ENTER** after each number. You do NOT need to order your data first.

**★ALWAYS TYPE YOUR DATA INTO L1.★**

4) Once all of your data is entered, press **STAT**, then **→** and **ENTER**.

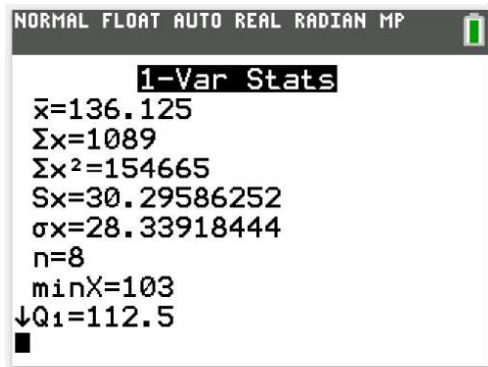
5) Your screen will then look like one of the following:



Make sure it says List: L<sub>1</sub> and that the FreqList is blank. Press **ENTER** until screen changes.

Press **ENTER**. Your calculator defaults to using L<sub>1</sub>.

6) Your screen will then change to this:



Press **↓** and **↑** to scroll down and up to find the information that you need.

- $\bar{x}$  = mean
- min* = minimum
- Q1 = lower quartile
- med* = median
- Q3 = upper quartile
- max* = maximum

You will have to calculate the range and interquartile range.

Using your calculator, find the summary statistics listed below for the following data set.

Below is a list of hours slept on school nights for a sample of high school students. Round the nearest tenth if necessary.

9    6    6    5    7    12    7    5    7    6    8.5    11    9    6.5

Minimum		Lower Quartile		Median		Upper Quartile	
Maximum		Average		Range		Interquartile Range	

## Summary Statistics – Practice

For the following data sets, find the five number summary, mean, range, and interquartile range. Round the nearest hundredth if needed.

### 1) Academy Awards

Movie	# Awards	Movie	# Awards
The Bridge on the River Kwai	7	Lord of the Rings: Return of the King	11
On the Waterfront	8	The French Connection	5
Ordinary People	4	All Quiet on the Western Front	2
A Beautiful Mind	4	My Fair Lady	8
Crash	3	Ben-Hur	11
The Deer Hunter	5	The English Patient	9
Mutiny on the Bounty	1	Titanic	11
West Side Story	10		

Minimum		Lower Quartile		Median		Upper Quartile	
Maximum		Average		Range		Interquartile Range	

### 2) Age at First Job (in years)

15    17    13    14    18    14    15    16  
 20    21    15    17    17    15    13

Minimum		Lower Quartile		Median		Upper Quartile	
Maximum		Average		Range		Interquartile Range	

### 3) Test Scores (points)

50    39    50    49    47    55    44    39    41    48    48    53    52    39

Minimum		Lower Quartile		Median		Upper Quartile	
Maximum		Average		Range		Interquartile Range	

## 4) Life Expectancy (in years)

State	Years	State	Years	State	Years	State	Years
New Jersey	82.4	Ohio	81	Louisiana	78.2	Massachusetts	83.8
Florida	81.7	Tennessee	77.9	Texas	80.3	New Mexico	77.7
District of Columbia	77.9	South Carolina	78.3	West Virginia	74.1	Minnesota	80.3
South Dakota	74.3	New York	82.5	Mississippi	74.2		

Minimum		Lower Quartile		Median		Upper Quartile	
Maximum		Average		Range		Interquartile Range	

## 5) Mountain Heights

Name	Feet	Name	Feet	Name	Feet	Name	Feet
Saser Kangri II E	24,649	Annapurna Dakshin	23,684	Rimo I	24,229	Diran	23,839
Chogolisa	25,148	Sia Kangri	24,350	Saser Kangri III	24,590	Singhi Kangri	23,629
Malubiting	24,469	Mamostong Kangri	24,659	Teram Kangri III	24,219	Baintha Brakk	23,901
Jongsong Peak	24,482	Kamet	25,446	Annapurna I	26,545	Ngadi Chuli	25,823
Annapurna II	26,040						

Minimum		Lower Quartile		Median		Upper Quartile	
Maximum		Average		Range		Interquartile Range	

## 6) Number of Runs in a Baseball Game

12 8 19 4 5 4 12 3 1 8 5 6 7 9

Minimum		Lower Quartile		Median		Upper Quartile	
Maximum		Average		Range		Interquartile Range	