

# Howdy!!!!

Mr. Watson  
**Algebra**

What you need:

Pencil  
Calculator

**MEAN** - (the average) add up all of the numbers and divide by the total number of numbers.

$$\bar{X} = \bar{x} \text{ bar} = \text{symbol}$$

ex 1) 12, 15, 17, 18, 18, 19, 27

$$\frac{126}{7} = \boxed{18}$$

ex 2) -7, -14, 20, 0, 12, -14, 21, 22

$$\boxed{5}$$

**MEDIAN** - the number that is in the middle of a data set (list of numbers) that are listed from smallest to largest.

ex 1) 12, 15, 17, 18, 18, 19, 27

median

ex 2) -7, -14, 20, 0, 12, -14, 21, 22

-14, -14, -7, 0, 12, 20, 21, 22

$$\frac{0+12}{2} = \boxed{6}$$

median

**MODE** - the number that appears the most amount of times in a data set. (Mode, Bimodal, Trimodal)

ex 1) 12, 15, 17, 18, 18, 19, 27

mode = 18

ex 2) -7, -14, 20, 0, 12, -14, 21, 22

mode = -14

**RANGE** - the difference between the highest and lowest number in a set of data.  $\text{max} - \text{min}$

ex 1) 12, 15, 17, 18, 18, 19, 27

$$27 - 12 = \boxed{15}$$

ex 2) -7, -14, 20, 0, 12, -14, 21, 22

$$22 - (-14) = \boxed{36}$$

**QUARTILES** - when data can be split up into four different sections. (Think about quarters)

1. Start by finding the MEDIAN (Q2).
2. Find the MEDIAN (Q1) of the first half of data.
3. Find the MEDIAN (Q3) of the second half of data.

ex 1) 12,  $\boxed{15}$ , 17,  $\boxed{18}$ , 18,  $\boxed{19}$ , 27  
 $\text{Q1}$   $\text{Q2}$   $\text{Q3}$   
 $\text{med}$

ex 2) -7, -14, 20, 0, 12, -14, 21, 22

-14,  $\boxed{-14, -7}$ , 0, 12,  $\boxed{20, 21}$ , 22  
 $\text{Q1}$   $\text{Q2}$   $\text{Q3}$   
 $\text{med}$

**INTERQUARTILE RANGE (IQR)** - the difference between Q3 and Q1.  $\text{Q3} - \text{Q1}$

ex 1) 12, 15, 17, 18, 18, 19, 27

$$\text{Q3} - \text{Q1} \\ 19 - 15 = \boxed{4}$$

ex 2) -7, -14, 20, 0, 12, -14, 21, 22

$$\text{Q3} - \text{Q1} \\ 20.5 - -10.5 = \boxed{31}$$

**MEAN ABSOLUTE DEVIATION (MAD)** - how far a number is on average from the mean.

ex 1) 12, 15, 17, 18, 18, 19, 27

$$\textcircled{1} \bar{x} = 18 \quad 6, 3, 1, 0, 0, 1, 9$$

$$\text{MAD: } \frac{21}{7} = \boxed{3}$$

ex 2) -7, -14, 20, 0, 12, -14, 21, 22

$$\textcircled{1} \bar{x} = 5 \quad 12, 19, 15, 5, 7, 19, 16, 17$$

$$\text{MAD: } \frac{119}{8} = \boxed{13.75}$$

① Find  $\bar{x}$

② How far from  $\bar{x}$  is each #

③ Find new  $\bar{x}$

CCGPS Coordinate Algebra  
Measures of Central Tendency

Name: \_\_\_\_\_  
Date: \_\_\_\_\_ Block: \_\_\_\_\_

Round to 1 decimal place  
Use the data set below to answer the following questions:

1.) Find the mean. **7.1**

2.) Find the median(Q2). **6.5**

3.) Find the mode. **2**

4.) Find the range. **18 - 1 = 17**

5.) Find Q1. **2.5**

6.) Find Q3. **9.5**

7.) Find the IQR. **Q3 - Q1 = 9.5 - 2.5 = 7**

8.) Find the MAD.  **$\bar{x} = 7.1$   
 $\frac{61.4}{16} = \text{MAD } 3.8$**

CALCULATOR

CCGPS Coordinate Algebra  
Unit 4 - Mean, Median, Mode, Range, Quartiles, IQR, MAD

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Measures of Central Tendency			
<b>Mean, <math>\bar{X}</math></b> The average	<b>Median, or Quartile</b> The middle number when the data is written in order	<b>Mode</b> The data value that appears the most	<b>Range</b> The difference between the greatest value and the least value
<b>Upper Quartile</b> The median of the upper half of an ordered set of data	<b>Lower Quartile</b> The median of the lower half of an ordered set of data	<b>Interquartile Range</b> The difference between the upper quartile and the lower quartile	
<b>Mean Absolute Deviation (MAD)</b> The average deviation of each value from the mean $\frac{\sum  x_i - \bar{x} }{N}$			

Complete the table below for the given data.

1) 5, 9, 3, 6, 12, 10, 8, 7, 12

a) Put the data in order: **3, 5, 6, 7, 8, 9, 10, 12, 12**

b) Mean? **8**

c) Median? **8**

d) Mode? **12**

e) Range? **12 - 3 = 9**

f) Upper Quartile? **Q3 = 11**

g) Lower Quartile? **Q1 = 5.5**

h) Interquartile Range? **11 - 5.5 = 5.5**

i) Mean Absolute Deviation **2.4**

2) 11, 16, 18, 27, 20, 10, 14, 10, 17, 12

a) Put the data in order

b) Mean? **15.5**

c) Median? **15**

d) Mode? **10**

e) Range? **27 - 10 = 17**

f) Upper Quartile? **18**

g) Lower Quartile? **11**

h) Interquartile Range? **18 - 11 = 7**

i) Mean Absolute Deviation **4.1**

calculator

Types of Distributions: Name: \_\_\_\_\_

John recently went on a golf outing. He played all 18 holes and got the following scores:

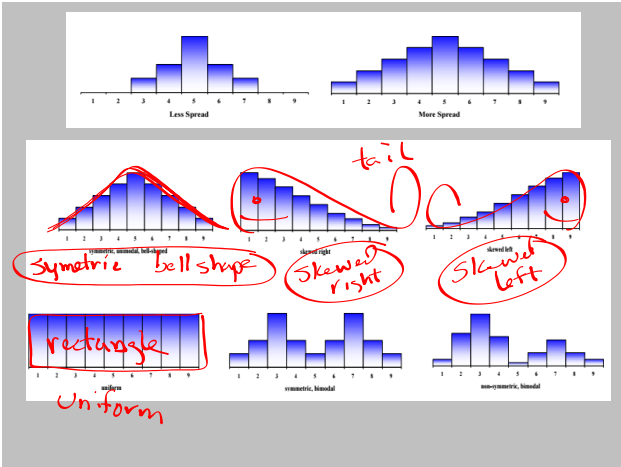
Hole	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Score	3	5	7	4	6	7	11	10	11	8	7	6	8	9	8	7	4	5

Mean: \_\_\_\_\_ Median: \_\_\_\_\_ Mode: \_\_\_\_\_ Q1: \_\_\_\_\_ Q3: \_\_\_\_\_  
Min: \_\_\_\_\_ Max: \_\_\_\_\_ IQR: \_\_\_\_\_ Range: \_\_\_\_\_

Create a dot plot for this data: NOTES:

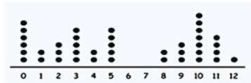
Create a Histogram with a bin width of three (1-3, 4-6, 7-9, 10-12) NOTES:

Create a Box and Whisker plot: NOTES:



DOT PLOT

The following dot plot represents the frequency of people that yawn during their first period class.



- 1. How many people only yawn 1 time during 1<sup>st</sup> period?
- 2. What is the mode of the data?
- 3. What is the maximum amount of times this group of people yawns in 1<sup>st</sup> period?
- 4. How many people yawn at least 6 times?

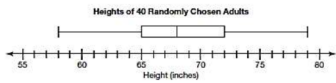
HISTOGRAM

Example: Use the histogram to answer the following questions about how long it takes students to get ready.

- a. How many students answered the question?
- b. How many students take less than 40 minutes to get ready?
- c. Based on the info given, could you redraw the current histogram with intervals half their current size? Why or why not?



BOX AND WHISKER PLOT



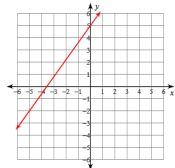
- A. What is the height range of the middle 50 percent of the surveyed adults?
- B. How many of the surveyed adults are exactly 68 inches tall?
- C. What percent of the surveyed adults are 72 inches or shorter?
- D. What is the height of the tallest adult surveyed?

EOC Review

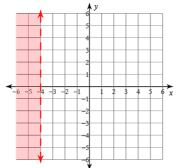
Algebra 1 Name \_\_\_\_\_ ID: 1  
EOC Review Graphing Date \_\_\_\_\_ Period \_\_\_\_

Sketch the following graphs:

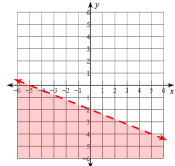
1)  $7x - 5y = -25$



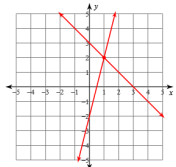
2)  $x < -4$



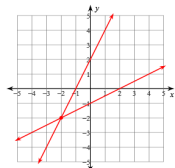
3)  $2x + 5y < -10$



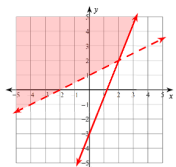
4)  $y = 4x - 2$   
 $y = -x + 3$



5)  $x - 2y = 2$   
 $2x - y = -2$



6)  $y \geq \frac{5}{2}x - 3$   
 $y > \frac{1}{2}x + 1$



Attachments

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Syllabus - Math I A.doc