Howdy!!!!

Mr. Watson

Algebra

What you need:

Pencil

Calculator

Factor the following problems

$3x^2 + 9x$

$\frac{3x}{3x} + \frac{9x}{3x}$

$3x(x+3)$

$x^2 + 7x + 10$

$(x+5)(x+2)$

$x^2 - 11x + 18$

$(x-9)(x-2)$

$2x^2 - 5x - 12$

x

$(2x+3)(x-4)$

$-8x$

$+3x$

$-5x$

3, 4

6, 2

12, 1

Types of Distributions: **Name:**_____

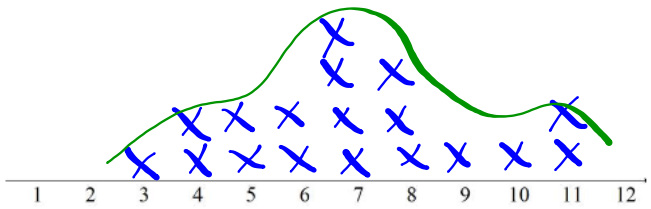
John recently went on a golf outing. He played all 18 holes and got the following scores:

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: 7 Median: 7 Mode: 7 Q1: 5 Q3: 8

Min: 3 Max: 11 IQR: 3 Range: 8

Create a dot pot for this data:



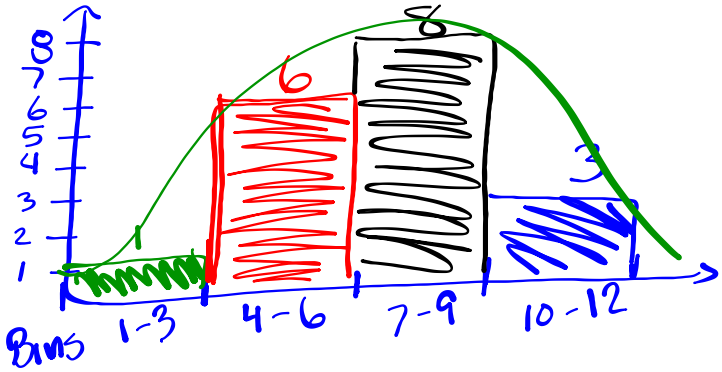
NOTES:

→ Slight bell shape

① Easily Identify mode

② Tells exact values

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

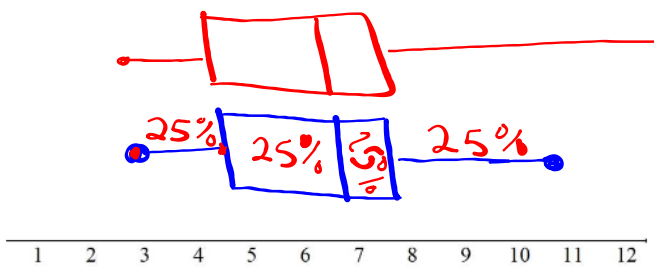


NOTES:

→ Tells shape of graph

→ Categorizes data

Create a Box and Whisker plot:



NOTES:

5 # Summary

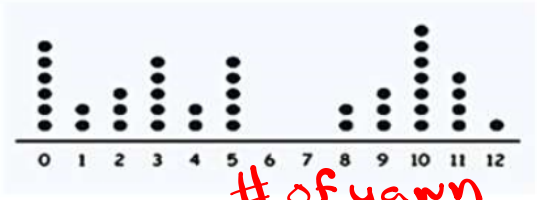
min: 3
Q1: 5
MED: 7
Q3: 8
MAX: 11

→ % of data

→ outlier

DOT PLOT

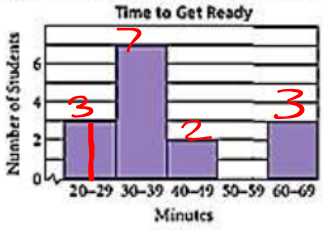
The following dot plot represents the frequency of people that yawn during their first period class.



1. How many people only yawn 1 time during 1st period? 2
2. What is the mode of the data? 10
3. What is the maximum amount of times this group of people yawns in 1st period? 12
4. How many people yawn at least 6 times? 17
   more than or =

HISTOGRAM

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



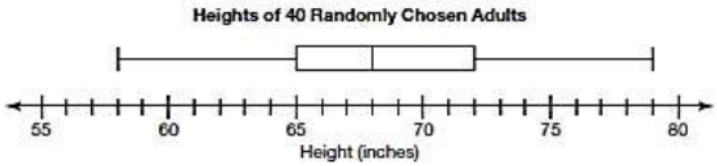
a. How many students answered the question? 15

b. How many students take less than 40 minutes to get ready? 10

c. Based on the info given, could you redraw the current histogram with intervals half their current size? Why or why not?

No, we do not know specific values

BOX AND WHISKER PLOT



A. What is the height range of the middle 50 percent of the surveyed adults?

65 to 72

B. How many of the surveyed adults are exactly 68 inches tall?

C. What percent of the surveyed adults are 72 inches or shorter?

75%

D. What is the height of the tallest adult surveyed?

79

As a group discuss how old you think Sheldon Cooper (Jim Parsons) is?

Actual Age

36, 32, 37, 33, 32, 39

10, 14, 9, 13, 14, 7

MAD: $11.1\overline{6}$

year off of actual age

As a group discuss how old you think Snoop Dogg is?

Actual Age

61, 67, 51, 55, 52, 62

13, 19, 3, 7, 4, 14

MAD: 10 yrs off

As a group discuss how old you think Betty White is?

Actual Age .

93, 73, 80, 97, 77, 92

4, 24, 17, 0, 20, 5

MAD: $11.\overline{6}$

Outliers

Mean vs. Median

Lower Outlier
Q1 - 1.5(IQR)

Upper Outlier
Q3 + 1.5(IQR)

Mean is best when there is no outlier or uniform.

Median is best when there is an outlier or skewed.

Outliers Coordinate Algebra **Name** _____

Answer the following questions below:

1) Find the outlier of the data set. 43, 69, 49, 78, 88, 54, 73, 194, 54, 59, 70

2) Find the outlier of the data set. 40, 62, 47, 68, 12, 78, 49, 65, 49, 52, 63

3) Find the outlier of the data set. 44, 67, 52, 72, 82, 55, 70, 200, 55, 57, 68

a) What effect will the outlier have on the median of the data if the outlier is excluded?

b) What effect will the outlier have on the mean of the data if the outlier is excluded?

c) What effect will the outlier have on the mode of the data if the outlier is excluded?

d) What effect will the outlier have on the range of the data if the outlier is excluded?

4) Find the outlier of the data set. 164, 175, 126, 135, 159, 143, 55

a) What effect will the outlier have on the median of the data if the outlier is excluded?

b) What effect will the outlier have on the mean of the data if the outlier is excluded?

c) What effect will the outlier have on the mode of the data if the outlier is excluded?

d) What effect will the outlier have on the range of the data if the outlier is excluded?

5) Find the outlier of the data set. 46, 39, 38, 47, 45, 34, 83

a) What effect will the outlier have on the median of the data if the outlier is excluded?

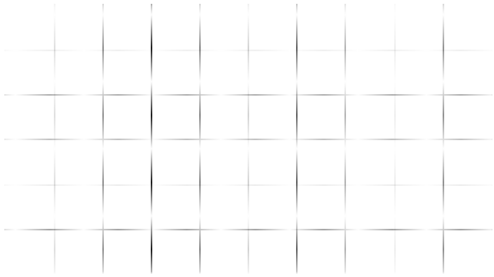
b) What effect will the outlier have on the mean of the data if the outlier is excluded?

c) What effect will the outlier have on the mode of the data if the outlier is excluded?

d) What effect will the outlier have on the range of the data if the outlier is excluded?

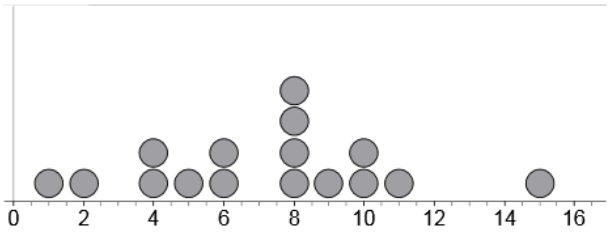
Coordinate Algebra – One-Variable Statistics Name: _____

1. Determine the 5-Number summary for the data below and then create its box and whisker plot.
   12, 18, 18, 19, 26, 11, 36, 30, 28, 29, 15, 14, 25, 51

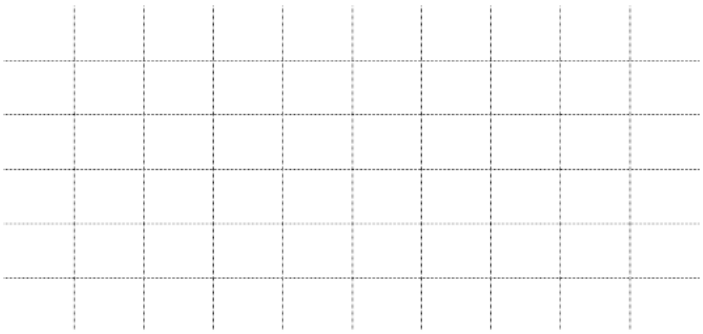


   a. Determine if this data has any outliers.

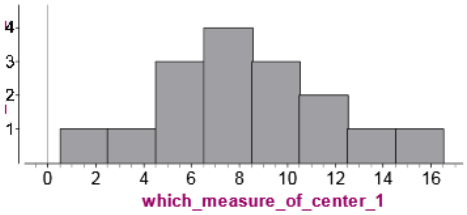
2. A dot plot is given below. Graph a box and whisker plot that corresponds to the same data.

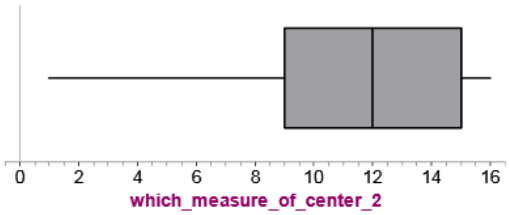


5-Number Summary



3. Two distributions are shown below. For one distribution, the mean is the best measure of center to use. For the other distribution, the median is the best to use. Decide which distribution should use the median and which should use the mean. Explain how you made your decision.





4. The mean absolute deviation (MAD) is one of the measures of spread you have learned about in this unit. In your own words, describe what is meant by the term "measure of spread." Be as specific as you can and write your response as a complete sentence.

5. How do you identify if a distribution is unimodal?

6. For each statement below, decide if it is TRUE or FALSE. If it is false, explain why.

   a. The term "normal distribution" is used to describe data with a tail on one end of the data.

   b. Bimodal data have exactly two distinct data values that are much more frequent than the other data values.

   c. Uniform distributions usually have a shape that resembles a triangle.

CLASSWORK!

Coordinate Algebra Unit 4 – Describing Data

Name: _____ Date: _____

Comparing Plots of Data

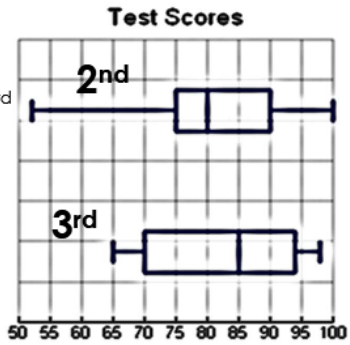
1. The table shows the scores from the top 10 players of our Homecoming basketball game.

Which player scored more than the upper quartile of the data?

A. Matt
B. Michael
C. Jim
D. Bobby

Player	Points	Player	Points
Michael	12	Dave	9
Brendan	6	Heath	15
Andrew	21	Jack	3
Jim	14	Bobby	10
Andre	5	Matt	18

For #2-3, use the graph to the right.



2. Which statement below is NOT true?
   A. 2nd period had the highest score on the test
   B. The median for 2nd period is 5 less than the median for 3rd
   C. The LQ for 2nd period is 5 less than LQ for 3rd period
   D. The UQ for 3rd period is 94

3. Fill in the blanks:
   - The median for 2nd period is _____
   - The median for 3rd period is _____
   - The lowest score for 3rd period is _____
   - The lower quartile for 2nd period is _____
   - The spread of the middle 50% for 2nd period is _____

Sample A: 2, 4, 4, 4, 8, 8, 10, 12, 12, 14 **Sample B: 0, 1, 4, 7, 9, 9, 10, 12, 12, 15**

4. Which statement accurately compares the two samples?
   A. The mean for Sample A is 1 greater than the mean of Sample B.
   B. The mean for Sample B is 1 greater than the mean of Sample A.
   C. The mean for Sample A is 0.1 greater than the mean of Sample B.
   D. The mean for Sample B is 0.1 greater than the mean of Sample A.

[redacted]

6. Which measure of central tendency is MOST EASILY affected by outliers?

7. Forty-five people were asked about how many miles they walked in one week. The results are shown in the graph. How does the median number of miles walked for boys compare with the median number of miles walked for girls?

8. The table below shows the running times for science-fiction movies. Find the Mean Absolute Deviation of the data.

Running Times for Movies (min)					
98	87	93	88	126	108

The summary statistics for all of the workers at a steel factory are shown. Three sample groups were taken from each of the three shifts. For which sample group is the mean deviation greater than that of the population?

Steel Factory Workers Ages

Population Mean Deviation: 12.23

Shift 1	Shift 2	Shift 3
23	29	21
19	22	23
50	24	25
41	40	40
67	45	35
34	29	19
30	33	70
59	29	40
40	39	22
33	59	23

Adapted from: Mathematics Vision Project

EOC Review

Algebra 1

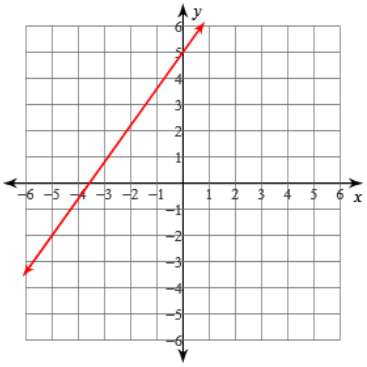
Name_____ ID: 1

EOC Review Graphing

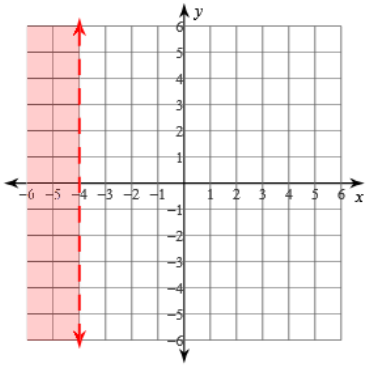
Date_____ Period____

Sketch the following graphs:

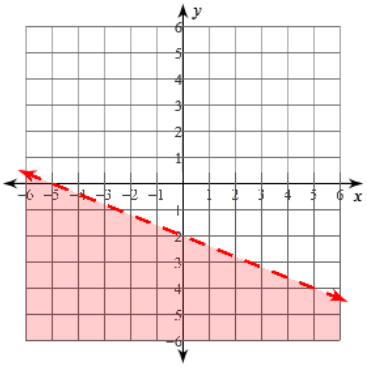
1) $7x - 5y = -25$



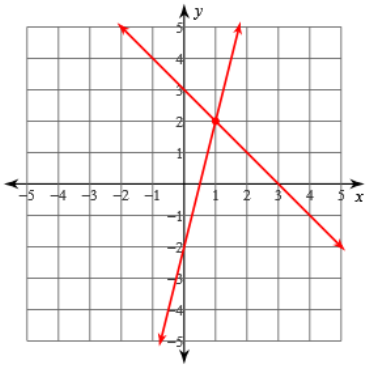
2) $x < -4$



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

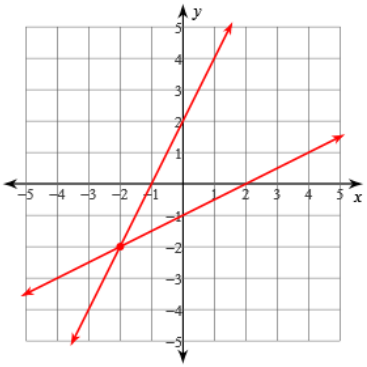


4) $y = 4x - 2$
$y = -x + 3$



(1, 2)

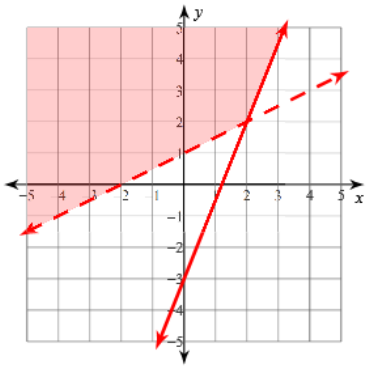
5) $x - 2y = 2$
$2x - y = -2$



(–2, –2)

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

$y > \frac{1}{2}x + 1$



Attachments

Syllabus - Math I A.doc