Algebra 1 ~ U6 Day 1


## Describe

The average a data set, found by adding all values and dividing by the number of data points
The middle value of a data set: $50 \%$ of the data is less than this value, and 504 is greater than it
Measures of Variability (spread)

Range

## Outlier

## (Lower)

First Quartile
(upper)
Third

The difference between the highest and lowest numbers in the data set.

A data value that is much
$\qquad$ than or much less than the rest of the data in a data set.

The value that identifies the lower $25 \%$ of the data; the median of the 10 WeV half of the data set; written as $\mathrm{Q}_{1}$.
Value that identifies the upper $25 \%$ of the data; the median of the UPPer half of the data set; $75 \%$ of all data is less than this value: written as Q3.

## Example

Mean

## Median

Mode Most occured
Find the mean:
$5+4+2+6+3=20$

$$
\frac{20}{5}=4
$$

$$
80=\text { Med } 1 a y
$$

$65,65,70,75,80,80,85,90,95,100$

## Range

Interquartile Range (IQR)
$65,65,70,75,80,80,85,90,95,100$
Range $=$ highest $\#-$ lowest $\#$ in the data
Range $=100-65=35$



[^0]


1. Given the following data for temperatures in the first two weeks of February 2014.

$$
51,44,28,25,17,71,62,32,37,54,47,31,60,39
$$

| Mean: |  |  |  |
| :--- | :--- | :--- | :--- |
| $X=42.71$ | Min: 17 | Max: |  |
| Q1: | Median: | 41.5 | Q3: |
|  |  | 54 |  |
| Box Plot: |  |  |  |

Box Plot:

data -4

## Statistics Measures and Graphs Practice

1. Use the box and whisker plot for questions 1-8.

## Name:

$\qquad$
Period: $\qquad$
a. What is the median? 6 in
b. What is the lower quartile ( $Q_{1}$ )? 60 in
c. What is the upper quartile (Q3)? 64 in
d. What are the upper and lower extremes (maximum and minimum)? $\mathrm{Max}=$ Q $\mathrm{Min}=58$
e. What is the range ( $\operatorname{Max}-\mathrm{Min})$ ? $66-58=8 \mathrm{in}$
f. What is the interquartile range ( $\left.Q_{3}-Q_{1}\right)$ ? $44-40=4$ in
g. What percentage of data is located between 60 in and 64 in ? $50 \%$
h. What percentage of data is located below 64 in ? $75 \%$
i. What percentage of data is located below 60 in ? $25 \%$
2. Analyze the given histogram which displays the ACT composite score of several randomly chosen students.

a. How many students are represented by the histogram?

23
b. How many student scores fall between 15 and 25 ? $6+5=11$
c. How many students have scores less than 30 ? $4+5+6+5=20$
d. How many students have scores between 10 and 15 and between 20 and 25 ?
e. Can you determine how many students scored a 20? Why or why not?

NO, histograms show ranges
3. Analyze the given dot plot which displays the number of home runs by each of the members of the Atlanta Braves team during the month of April and answer the questions accordingly.

a. How many players are on the team? 16
b. How many players hit more than 2 home runs? $\varphi$
c. How many players hit at least 1 home run? 12
d. How many players hit more than 1 and fewer than 9 home runs? 7
e. How many players scored more than 9 home runs? D
f. How many players hit more than 1 and fewer than 5 home runs? 3
g. How many players scored less than 3 home runs? 10
4. Mrs. Warren's recent Algebra 1 test had the following scores:

$$
90,95,100,70,85,65,90,80,65,70,75,80,85,80,60,80,75,85
$$

Construct a box-and-whisker plot.


Min: $\qquad$ Qi: 70 Median: 80 QB: 85 Max: 100
$\qquad$
R
$\qquad$
品

1) The heights (in inches) of eight tomato plants are:
$36,45,52,40,38,41,50$, and 48 Find the range, mean, median, and modes) of the tomato plant heights.

$$
\bar{x}=43.75 \quad \text { Range: } 16
$$

Median: 43 Mode: $\qquad$
2) You and your friend have a friendly competition going on about the scores on your math quizzes. Both of your scores for the first five quizzes are given below.

Your quiz scores: $\quad 18,16,19,15,17$
Friend's quiz scores: $20,20,13,12,17$
a) Find the mean, median, and mode of both sets of data.

You: $\bar{x}=\frac{17}{16.4}$
Median: $\qquad$ Mode:

b) Do you or your friend have the higher mean? Who has the highest median?
you have higher mean, the medians are the same
3) Below are percentages of all doctorates earned by men and women between 1980 and 1989.

| College | Women | Men |
| :--- | :---: | :---: |
| Boudoin | 45 | 48 |
| Carleton | 38 | 61 |
| Grinnell | 34 | 47 |
| Middlebury | 36 | 46 |
| Oberlin | 20 | 34 |
| Swarthmore | 34 | 46 |

a) What is the difference between the means of the percentages of doctorates earned by women and men? Women: $\bar{x}=34.5$ Men: $\bar{x}=47^{4}=12.5$
b) What is the difference in the ranges of the percentages of doctorates earned by men and women? Range: Women: 25

$$
45-20
$$


c) How much higher is the median of the percentage of doctorates earned by men than the median of the percentage earned by-women? Median: Women: 35

$$
\text { Median: Men: } 46.5
$$

4) Suppose the students in a class received the following test scores:

$$
85,90,65,75,90,95,80,80,70,85,85,1.00,60,75,80,85,9,0
$$

Create a box-and-whisker plot for this data.

5) A research scientist recorded the following readings for an experiment she was working on: $173,206,179,257,198,251,239,246,295,181,261$

## Create a box-and-whiskers plot for this data.


6) Identify the requested values by analyzing the box and whisker plots below.
a)


Min: 124
Q1: 129 Median: $13 \mid$
Q3: 135
Max: 160
Range: 36
IQR: $\qquad$
7) Which box and whisker plots has the greatest IQR?
b)

a)

b)

c)
d)



[^0]:    median of lower part
    first quartile

