CCM6+ - Quarter 4 - Week 3

Thursday

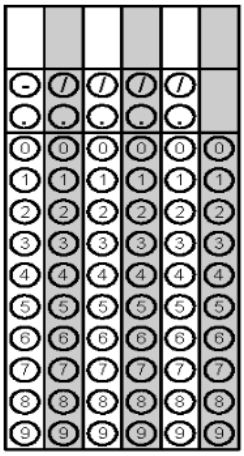
Which is greater?

9^0 or $\left(\frac{1}{9}\right)^2$

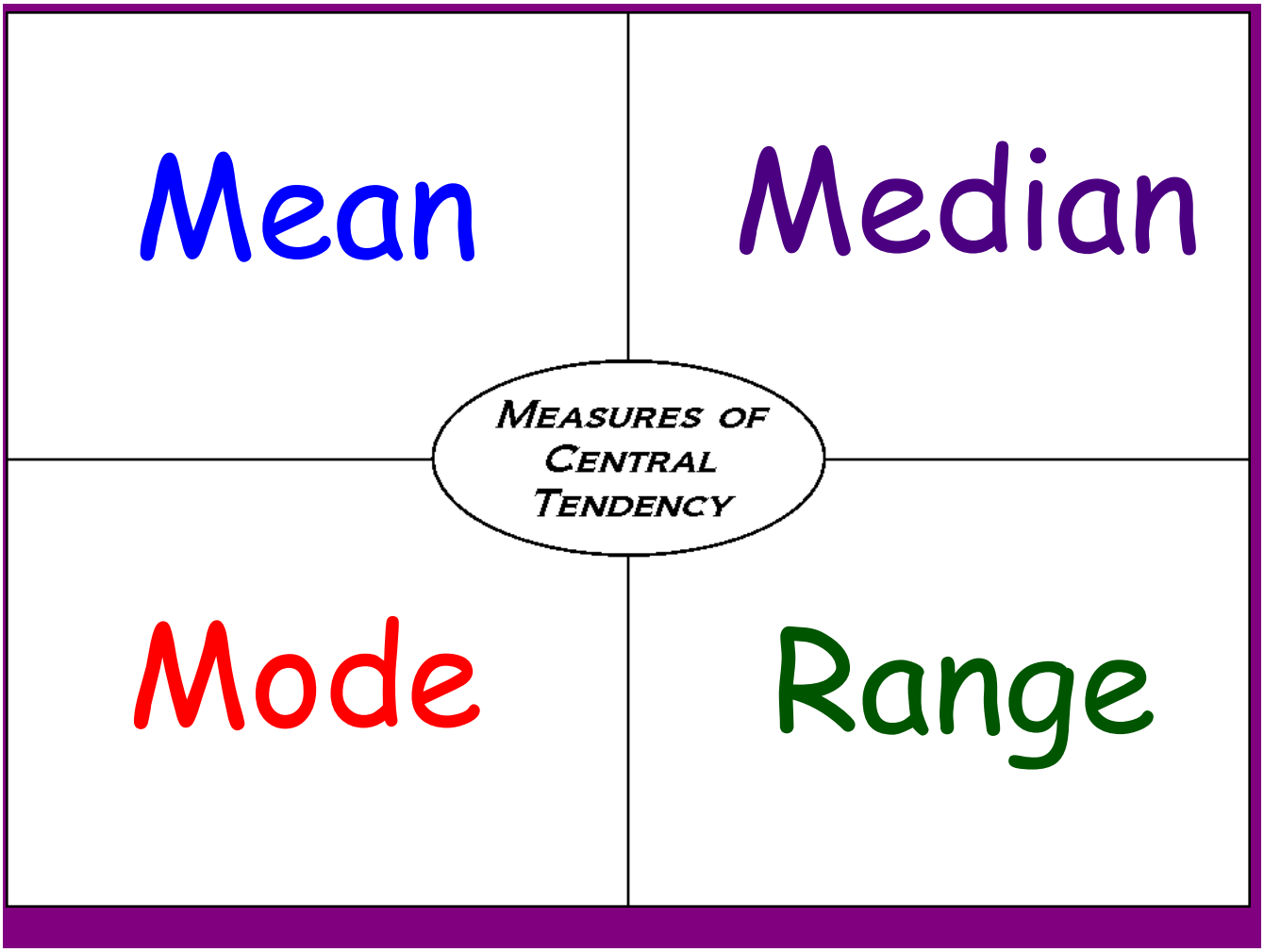
The Newman family spent $276 on groceries one week, $179 the next week, $212 the third week, and $103 the last week of the month. What was their average weekly grocery cost? *Express your answer in dollars and cents.*

197.5
197.5

Problem 2



Created by E. Nash


Mean
Median
Measures of Central Tendency
Mode
Range

Mean (Average)

To find the mean, you add up all the numbers and then divide by how many numbers you had.

Ex: Find the mean of the set of numbers.

14, 26, 39, 30 27.25

Median (Middle)

To find the median, first write the numbers in order. Then find the middle number or the average of the two middle numbers.

32 35 36 37 41 41 51 53

Ex: Find the median of the set of numbers.

Mode

To find the mode put the numbers in order. Then find the number or numbers that appear most often.

You can have more than one mode or no mode depending on the set of numbers.

Ex: Find the mode(s) of the set of numbers.

34 34

33 37 33 36 31 35 34 33

Range

To find the range of a set of numbers, first put the numbers in order. Then subtract the smallest number from the largest number.

32 36 37 41 49 51

Ex: Find the range of the set of numbers.

19

Weight in pounds of boxes loaded onto a semi truck: 201, 201, 200, 199, 199

Find the mean, median, and mode for the set of data.

200 200 199 201

Mean

Median

Mode

An OUTLIER is a data value that is much greater or much less than the other data values

Ex. What is the outlier?

1, 5, 4, 2, 6, 25, 3, 2

An outlier can affect the **mean** of a group of data.

Example: Using the data below, find the outlier and tell how it affects the mean. Round to the nearest tenth.

9 10 12 13 8 9 31 9

70

10

Outlier: 31

Mean without outlier: 10

Mean with outlier: 12.625 -> 12.6

How does the outlier affect the mean?

The outlier is higher, so it causes the mean to be higher

Find an outlier for each group of data below and tell how it affects the mean. Round to the nearest tenth.

B) 1, 17.5 , 18 , 19.5 , 16 , 17.5

Find an outlier for each group of data below and tell how it affects the mean. Round to the nearest tenth.

C) 37, 4 , 7 , 3 , 11 , 9, 13 , 5

Find an outlier for each group of data below and tell how it affects the mean. Round to the nearest tenth.

D) 126 , 123 , 115 , 125 , 123

Rita's Quiz scores are:
72 , 96, 74 , 80, and 79.

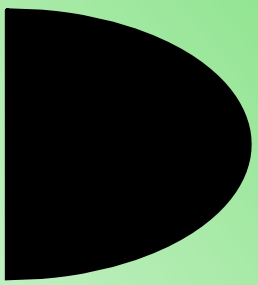
Find the outlier and tell how it **affects** Rita's mean Quiz score.

Sometimes one measure of central tendency is a better indicator of the data than the others.

For example, consider the eight hourly wage rates show below.

Hourly Wages
$5.50
$6.20
$5.50
$6.30
$5.50
$8.00
$6.00
$17.00

Mode: $5.50
Mean: $7.50
Median: $6.10



The Mode is the lowest wage listed. It does not describe the data well.

The Mean is above the hourly wage of all but two. It is influenced by the outlier, $17.

The Median is the best measure of c.t. since it's not influenced by the size of the outlier.

Hourly Wages	
$5.50	$6.20
$5.50	$6.30
$5.50	$8.00
$6.00	$17.00

Mode: $5.50
Mean: $7.50
Median: $6.10

How to Determine the Best Measure

*When determining the most frequently chosen item, or when the data is not numerical, use the MODE.

*When the data has no outliers, use the MEAN.

*When an outlier may significantly influence the mean, use the MEDIAN.

Mean Mode Median

Which measure of c.t. best describes the situation? Explain.

1. The favorite movies of students in the eighth grade.

Mode; since the data is not numerical

2. The daily temperatures during a week in July.

Mean, since the daily temps. in July are likely to not have an outlier.

3. The distance students in your class travel to school.

Median, since some students may live much further from school and be considered outliers

4. Ages of students in a 7th grade classroom.

Mean, there are likely no outliers

Examples:

4.) Numbers of apples in 2-lb bags

5.) Favorite brand of jeans 11- year olds wear

6.) Shoe colors in a classroom

7.) Widths of computer screens at a bank

8.) Number of pets owned by a classmate

Sam found the following prices for sports shirts:

$20 , $26, $27, $28, $21 , $42, $18 , and $20

Find the mean, median, and mode for the shirt prices.

Which measure of central tendency best describes the data?

Find the mean, median, and mode:

3,456 , 560 , 435 , 456

Which measure of central tendency best describes the data?

Find the mean, median, and mode:

33 76 86 92 86

Which measure of central tendency best describes the data?