

4-1-19

Aim: SWBAT determine the effects of outliers on the central tendencies of data.

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HOMEWORK

#7	#8
Data: 19, 16, 23, 35, 28, 20, 16, 36, 13, 26, 29, 31	Data: 19, 16, 23, 35, 28, 20, 16, 36, 98, 13, 26, 29, 31
Mean $24\frac{1}{3}$	Mean 30
Median 24.5	Median 26
Mode 16	Mode 16

#9	#10
Data: 58, 67, 94, 85, 78, 76, 99, 100, 88, 76, 82, 81, 94, 98	Data: 58, 67, 94, 85, 78, 76, 69, 99, 100, 88, 76, 2, 82, 81, 94, 98
Mean 84	Mean 74
Median 83.5	Median 81.5
Mode 76 and 94	Mode 76 and 94

Aim: SWBAT determine the effect of outliers on the central tendencies of data.

Do Now: Read the following definitions. Then, answer all parts of questions A and B.

- **Range** - A measure of variation that is the difference between the greatest and the least values in a data set.
- **Outlier** - A number that is much greater or much less than the other numbers in the data set.

A. Compare #7 and #8 from your homework. Circle how "98" affected the data.

Mean: Increased OR Decreased OR Remained the Same

Median: Increased OR Decreased OR Remained the Same

Mode: Increased OR Decreased OR Remained the Same

Outlier(s)	Range Excluding Outlier(s)	Range Including Outlier(s)
98	$36 - 13 = 23$	$98 - 13 = 85$

B. Compare #9 and #10 from your homework. Circle how "2" and "6" affected the data.

Mean: Increased OR Decreased OR Remained the Same

Median: Increased OR Decreased OR Remained the Same

Mode: Increased OR Decreased OR Remained the Same

Outlier(s)	Range Excluding Outlier(s)	Range Including Outlier(s)
2 and 6	$100 - 58 = 42$	$100 - 2 = 98$

Determine which measure of central tendency (mean, median, or mode) best describes the data set.

C. Extra Help Attendance: 1, 2, 3, 4, 5, 6, 7, 50

Outlier(s)	Range Excluding Outlier(s)	Range Including Outlier(s)
50	$7 - 1 = 6$	$50 - 1 = 49$

Based on the evidence, which measure of center best describes the data? median

D. One Student's Math Test Scores: ~~78, 85, 80, 83, 79~~
78, 79, 80, 83, 85

Outlier(s)	Range Excluding Outlier(s)	Range Including Outlier(s)
 	$85 - 78 = 7$	

Based on the evidence, which measure of center best describes the data? mean

E. Ages on a Baseball Team: 12, 12, 12, 12, 12, 12, 12, 12, 12, 10, 11, 10

Outlier(s)	Range Excluding Outlier(s)	Range Including Outlier(s)
 	$12 - 10 = 2$	

Based on the evidence, which measure of center best describes the data? mode

F. Ages at an Amusement Park: 5, 6, 7, 8, 9, 35, 36, 37, 42, 45

Outlier(s)	Range Excluding Outlier(s)	Range Including Outlier(s)
 	$45 - 5 = 40$	

Based on the evidence, which measure of center best describes the data? mean

HOMEWORK

Students in Mrs. Becker's class and Mr. Rolland's class sold boxes of popcorn for a school fundraiser. The tables below show the number of boxes that each student sold.

Popcorn Boxes Sold

Mrs. Becker's Class			
5	8	76	15
16	84	7	12
17	11	13	

Mr. Rolland's Class			
9	10	12	20
8	34	6	27
14	10	3	51

Mrs. Becker's Class	Mr. Rolland's Class
Mean	Mean
Median	Median
Mode	Mode

1. The mean for Mrs. Becker's class is _____ the mean for Mr. Rolland's class.
2. The median for Mrs. Becker's class is _____ the median for Mr. Rolland's class.
3. Why can't we compare the modes?

Conclusion: The average number of boxes sold by Mrs. Becker's students was _____ than the average number sold by Mr. Rolland's students.