

- Circle the outlier in each problem below.
- Determine the mean, median, mode, and range of the data set **without** the outlier.
- Determine the mean, median, mode, and range of the data set **with** the outlier.
- Describe the effect the outlier has on the mean, median, mode, and range.

1. 3, 2, 6, 4, 3, 5, 16

	Without Outlier	With Outlier
Mean		
Median		
Mode		
Range		

Effect:

2. 20, 17, 19, 22, 18, 17, 5

	Without Outlier	With Outlier
Mean		
Median		
Mode		
Range		

Effect:

3. 42, 38, 45, 68, 40, 39, 39, 41,

	Without Outlier	With Outlier
Mean		
Median		
Mode		
Range		

Effect:

3. 12, 24, 12, 15, 9, 11, 10, 13

	Without Outlier	With Outlier
Mean		
Median		
Mode		
Range		

Effect:

5. 4, 2, 8, 5, 6, 20, 7, 9,

	Without Outlier	With Outlier
Mean		
Median		
Mode		
Range		

Effect:

6. 105, 98, 101, 100, 99, 89, 40, 98

	Without Outlier	With Outlier
Mean		
Median		
Mode		
Range		

Effect:

- a) Circle the outlier in each problem below.
 b) Determine the mean, median, mode, and range of the data set **without** the outlier.
 c) Determine the mean, median, mode, and range of the data set **with** the outlier.
 d) Describe the effect the outlier has on the mean, median, mode, and range.

1. 3, 2, 6, 4, 3, 5, **16**

	Without Outlier	With Outlier
Mean	3.8	5.6
Median	3.5	4
Mode	3	3
Range	4	14

2. 20, 17, 19, 22, 18, 17, **5**

	Without Outlier	With Outlier
Mean	18.8	16.9
Median	18.5	18
Mode	17	17
Range	5	17

Effect: **with outlier: mean increased, median increased, mode remained unchanged, range increased**

Effect: **with outlier: mean decreased, median decreased, mode remained unchanged, range increased**

3. 42, 38, 45, **68**, 40, 39, 39, 41,

	Without Outlier	With Outlier
Mean	40.6	44
Median	40	40.5
Mode	39	39
Range	7	30

3. 12, **24**, 12, 15, 9, 11, 10, 13

	Without Outlier	With Outlier
Mean	11.7	13.3
Median	12	12
Mode	12	12
Range	6	15

Effect: **with outlier: mean increased, median increased, mode remained unchanged, range increased**

Effect: **with outlier: mean increased, median remained unchanged, mode remained unchanged, range increased**

5. 4, 2, 8, 5, 6, **20**, 7, 9,

	Without Outlier	With Outlier
Mean	5.9	7.6
Median	6	6.5
Mode	none	none
Range	7	18

6. 105, 98, 101, 100, 99, 89, **40**, 98

	Without Outlier	With Outlier
Mean	98.6	91.3
Median	99	98.5
Mode	98	98
Range	16	65

Effect: **with outlier: mean increased, median increased, mode remained unchanged, range increased**

Effect: **with outlier: mean increased, median increased, mode remained unchanged, range increased**