0-9 Measures of Center, Spread, and Position

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

1. number of pages in each novel assigned for summer reading:
224, 272, 374, 478, 960, 394, 404, 308, 480, 624

2. height in centimeters of bean plants at the end of an experiment:
14.5, 12, 16, 11, 14, 11, 10.5, 14, 11.5, 15, 13.5

3. number of text messages sent each day during the last two weeks:
18, 35, 53, 44, 26, 57, 23, 27, 47, 33, 4, 35, 39, 41

State whether the data in sets A and B represent *sample* or *population* data. Then find the range, variance, and standard deviation of each set. Use the standard deviations to compare the variability between the data sets.

4.

Wait Times (min)					
Ride A			Ride B		
45	22	40	35	50	32
48	11	51	31	35	45
36	55	60	45	49	40
32	24	37	43	37	45

5.

Number of Sponsors Obtained by Participants					
Charity Walk A			Charity Walk B		
44	14	61	8	28	15
22	27	25	100	42	19
38	50	49	25	75	82

6.

Number of Days Each Student Missed This Year							
Class A							
10	8	5	9	7	3	6	8
5	13	0	15	9	7	9	10
14	11	8	4	7	8	2	
9	11	14	8	12	10	1	
Class B							
5	8	13	7	9	4	10	2
12	6	7	8	11	12	8	9
12	9	6	11	3	8	5	
3	10	5	13	9	1	8	

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Find the minimum, lower quartile, median, upper quartile, and maximum of each data set. Then interpret this five-number summary.

7.

Number of Students In Each Math Class at Central High							
25	27	26	26	19	27	24	23
24	26	18	28	29	29	26	24
19	28	25	24	20	22	22	
24	23	23	25	25	29	28	

8.

State Mean ACT Scores				
20.2	21.3	21.5	20.4	21.6
20.0	21.7	21.3	20.2	21.6
20.8	22.4	21.4	22.2	18.8
20.1	22.3	20.3	21.2	21.4
21.5	20.5	20.3	21.5	22.7
20.3	22.5	21.5	17.8	20.5
22.0	21.6	20.3	19.8	22.6
21.5	21.7	21.2	22.5	21.2
20.6	22.5	21.8	21.9	19.3
20.9	22.5	22.2	21.4	20.7

Identify any outliers in each data set, and explain your reasoning. Then find the mean, median, mode, range, and standard deviation of the data set with and without the outlier. Describe the effect on each measure.

9. fuel efficiency in miles per gallon of 15 randomly selected automobiles:
40, 36, 29, 45, 51, 36, 48, 34, 36, 22, 13, 42, 31, 44, 32, 34

10. number of posts to a certain blog each month during a particular year:
25, 23, 21, 27, 29, 19, 10, 21, 20, 18, 26, 23

11. **CEREAL** The weights, in ounces, of 20 randomly selected boxes of a certain brand of cereal are shown.
16.7, 16.8, 15.9, 16.1, 16.5, 16.6, 16.5, 15.9, 16.7, 16.5,
16.6, 14.9, 16.5, 16.1, 15.8, 16.7, 16.2, 16.5, 16.4, 16.6
a. Identify any outliers in the data set, and explain your reasoning.
b. If the outlier was removed and an additional cereal box that was 17.35 ounces was added, would this value be an outlier of the new data set? Explain.
c. What are some possible causes of outliers in this situation?