Name _____ Date _____ Class _____

LESSON 1-1

Practice B

Measures of Central Tendency and Variation

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

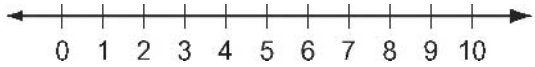
1. { 12, 11, 17, 3, 9, 14, 16, 2 }
   a. Mean _____
   b. Median _____
   c. Mode _____

2. { 6, 9, 9, 20, 4, 5, 9, 13, 10, 1 }
   a. Mean _____
   b. Median _____
   c. Mode _____

Make a box-and-whisker plot of the data. Find the interquartile range.

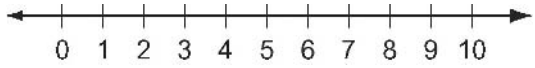
3. { 3, 7, 7, 3, 10, 1, 6, 6 }

_____



4. { 1, 2, 3, 5, 3, 5, 8, 2 }

_____



Find the variance and standard deviation.

5. { 7, 4, 3, 9, 2 }

_____

6. { 35, 67, 21, 16, 24, 51, 18, 32 }

_____

7. { 19, 23, 17, 20, 25, 19, 15, 22 }

_____

8. { 5, 12, 10, 13, 8, 11, 15, 12 }

_____

Solve.

9. The probability distribution for the amount of rain that falls on Boston in May each year is given below. Find the expected amount of rain for Boston in May. _____

Inches of Rain, *n*	5	6	7	8
Probability	0.05	0.10	0.64	0.21

10. A biologist is growing bacteria in the lab. For a certain species of bacteria, she records these doubling times: 41 min, 45 min, 39 min, 42 min, 38 min, 88 min, 43 min, 40 min, 44 min, 39 min, 42 min, and 40 min.
    a. Find the mean of the data. _____
    b. Find the standard deviation. _____
    c. Identify any outliers. _____
    d. Describe how any outlier affects the mean and the standard deviation.

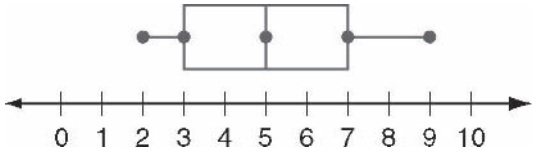
_____

Answers for Unit 1

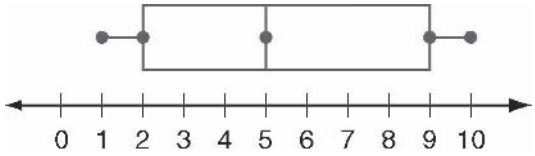
1-1 MEASURES OF CENTRAL TENDENCY AND VARIATION

Practice A

1. a. 5.25
   b. 5
   c. 2, 5
2. a. 9
   b. 9.5
   c. 11
3. 6.07
4. 2.05
5. Interquartile range is 4.



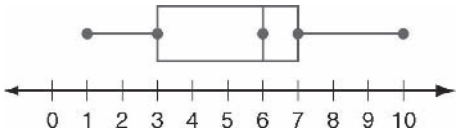
6. Interquartile range is 7.



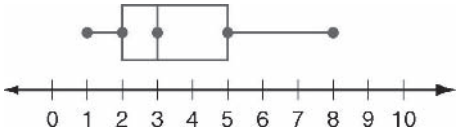
7. 13; 3.6
8. 4.7; 2.2

Practice B

1. a. 10.5
   b. 11.5
   c. None
2. a. 8.6
   b. 9
   c. 9
3. Interquartile range is 4.



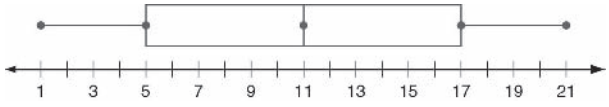
4. Interquartile range is 3.



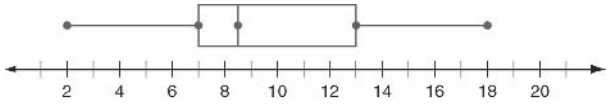
5. 6.8; 2.6
6. 278; 16.7
7. 9.3; 3.0
8. 8.4; 2.9
9. 7.01
10. a. 45.1
    b. 13.1
    c. 88
    d. The mean increases from ≈41.2 to ≈45.1, and the standard deviation increases from ≈2.1 to ≈13.1.

Practice C

1. Possible answer: {4, 4, 8, 9, 10}
2. Possible answer: {3, 6, 12, 14, 15}
3. Interquartile range is 12.



4. Interquartile range is 6.



5. 35.1; 5.9
6. 176.2; 13.3
7. 18.6; 4.3
8. 37.6; 6.1
9. 2.28
10. a. 17.7
    b. 14.3
    c. 65
    d. The mean increases from ≈13.4 to ≈17.7, and the standard deviation increases from ≈1.2 to ≈14.3.

Review for Mastery

1. 5
2. Expected value $= x_1p_1 + x_2p_2 + x_3p_3 + x_4p_4 + x_5p_5$
3. ≈6.9
4. 3
5. –1, –2, 2, 0, –2, 2, 0, 1
6. 1, 4, 4, 0, 4, 4, 0, 1
7. 2.25
8. 1.5

Challenge

1. Greater than; the sum is the same for both, and in the first case you divide by 94 rather than 100.