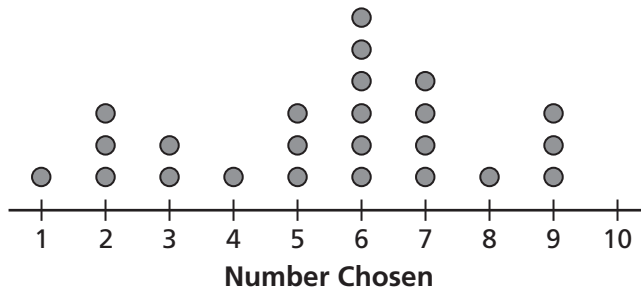


Additional Practice

Investigation 1

Data About Us

1. Ms. Snow’s students wrote down a whole number between 1 and 10 on a slip of paper. She collected the numbers and displayed the data in the dot plot below.



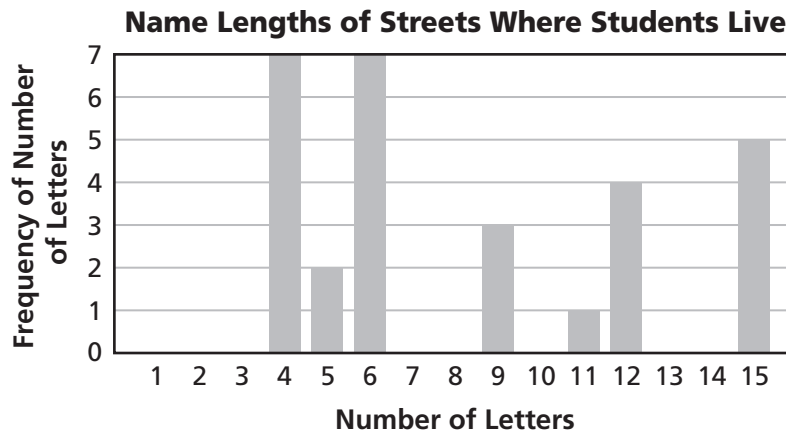
- a. What is the typical number chosen by students in this class?
 - b. Two students were absent on the day Ms. Snow collected the data. How many students are enrolled in the class? Explain your reasoning.
2. Mr. Watkins arranged the quiz scores of his afternoon math class from least to greatest: 5, 5, 6, 6, 6, 7, 7, 7, 7, 7, 8, 8, 8, 8, 8, 8, 9, 9, 9, 10, 10
- a. How many students are in Mr. Watkins’s afternoon math class?
 - b. How do the quiz scores vary?
 - c. What is the mode of the scores?
 - d. What is the median of the scores?

Additional Practice *(continued)*

Investigation 1

Data About Us

3. The students in Mr. Furgione’s math class counted the letters in the names of the streets where they lived. Then they made the bar graph below.



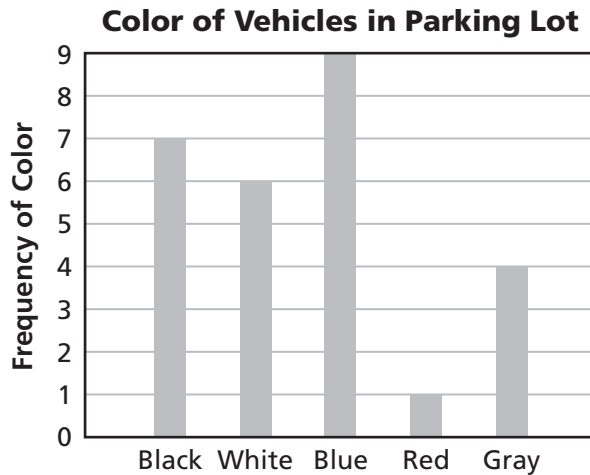
- a. Use the bar graph to make a table showing each name length and the number of students who live on streets with names of that length. Then make a dot plot showing these name lengths.

- b. Nobody was absent when the data were collected. How many students are in Mr. Furgione’s class? Explain your reasoning.

- c. What is the typical street-name length for this class? Use the mode, median, and range to help you answer this question.

Additional Practice *(continued)***Investigation 1****Data About Us**

8. Mr. Wanko's classroom looks out over one of the school's parking lots. His class made the bar graph below of the colors of the vehicles parked in the lot.



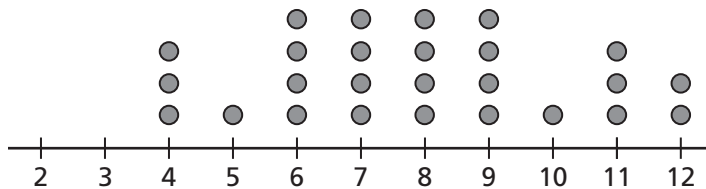
- a. Make a frequency table to show the same information as the bar graph.
- b. How many vehicles are parked in the lot?
- c. Which vehicle color seems most popular? Explain.
- d. Suppose Mr. Wanko's class collected data on the colors of vehicles parked in the same lot next week and represented the data in a bar graph. Would you expect this new bar graph to be the same as the one above? Why or why not?

Additional Practice *(continued)*

Investigation 1

Data About Us

9. Edna rolled a pair of six-sided number cubes several times and recorded the sums on the dot plot at right.



a. Which roll(s) occurred most often? Explain your reasoning.

b. How many times did Edna roll the cubes? Explain how you found your answer.

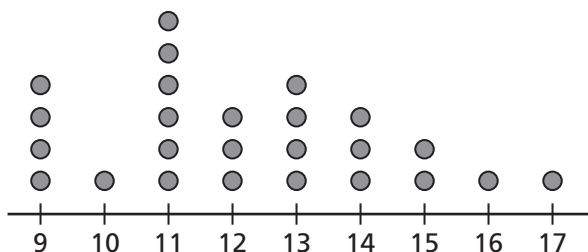
c. How do the sums on Edna's dot plot vary?

d. What is the median sum? Explain.

e. Suppose you roll a pair of number cubes the same number of times as Edna did. Would you expect a dot plot of your results to look exactly like Edna's? Explain.

Use this dot plot for questions 10 and 11 below.

Name Lengths of Mr. Samuel's Students



10. What is the median name length for this class?

A. 13

B. 12

C. 11

D. 3

11. How do the name lengths for this class vary?

F. 1 to 6

G. 9 to 17

H. 4 to 1

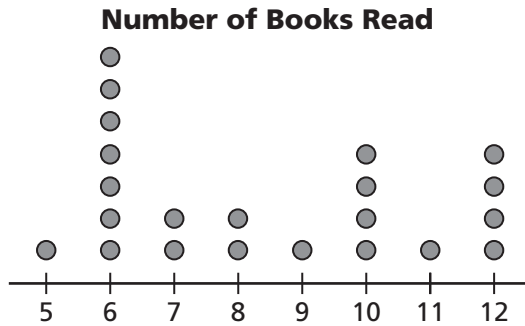
J. none of these

Additional Practice: Digital Assessments

Investigation 1

Data About Us

12. Mr. Chen made a dot plot to show the number of books his students read over the summer. Use the dot plot to answer parts (a) and (b).

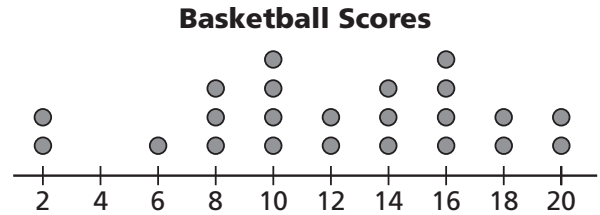


Circle the numbers and symbols that make each statement true.

a. The dot plot shows that $\left[\begin{array}{c} 4 \\ 5 \\ 13 \\ 17 \end{array} \right]$ students read fewer than 10 books over the summer.

b. Most students read $\left[\begin{array}{c} 6 \\ 7 \\ 12 \\ 17 \end{array} \right]$ books over the summer.

13. The dot plot shows the scores for the sixth-grade basketball teams. Use the dot plot to answer parts (a) and (b).

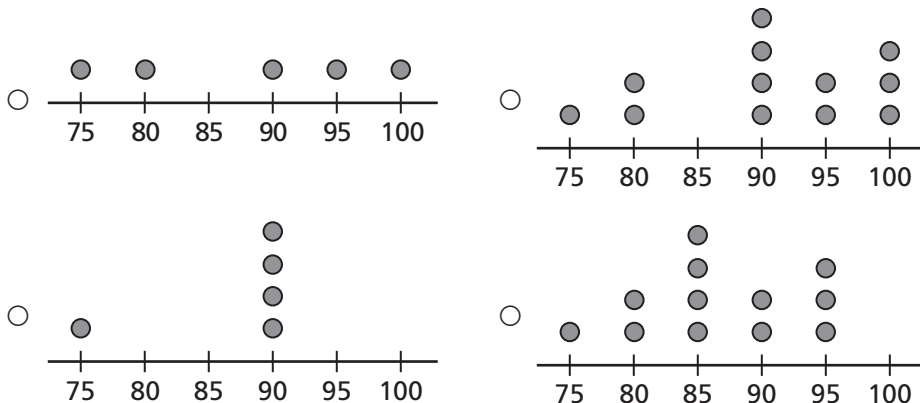


Complete the statements using the values from the bank.

- 2 6 10 20 22 23 24 25

- a. The basketball teams played a total of games.
- b. The scores vary from to .

14. Ms. Janice recorded her students' test scores in order from least to greatest: 75, 80, 80, 90, 90, 90, 90, 95, 95, 100, 100, 100. Which dot plot represents this data?



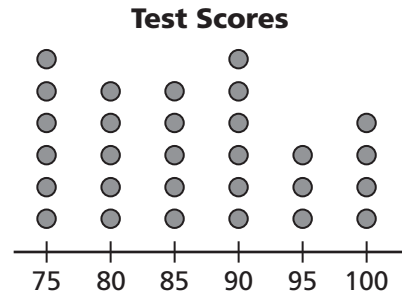
Skill: Dot Plots

Investigation 1

Data About Us

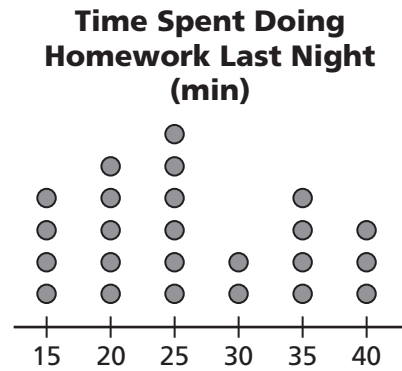
Ms. Makita made a dot plot to show the scores her students got on a test. The dot plot is shown at the right.

1. What does each data item or ● represent?
2. How many more students scored 75 than scored 95?
3. How many students scored over 85?
4. What scores did the same number of students get?



For Exercises 5–8, use the dot plot at the right.

5. What information is displayed in the dot plot?
6. How many students spent time doing homework last night?
7. How many students spent at least half an hour on homework?
8. How did the time spent on homework last night vary?



9. A kennel is boarding dogs that weigh the following amounts (in pounds).

5	62	43	48	12	17	29	74
8	15	4	11	15	26	63	

- a. How do the dogs' weights vary?
- b. How many of the dogs weigh under 50 pounds?

Additional Practice**Investigation 2****Data About Us**

1. The mean amount of change that Betty, Bill, and Susan have in their pockets is 79 cents. What is the total value of the change they have together? Explain.

2. Glenda rolled two six-sided number cubes nine times and computed the sum of the numbers rolled each time.
 - a. If the mean sum of Glenda's rolls was 6, what was the total of the nine sums Glenda rolled?

 - b. Suppose Glenda's rolls were 12, 7, 3, 10, 9, 2, 11, 7, and 8.
 - i. What is the median of Glenda rolls?

 - ii. What is the mean of Glenda's rolls?

 - iii. What is the mode of Glenda's rolls?

 - iv. Which do you think is the best indicator of a typical roll Glenda made, the median, mean, or mode? Explain your reasoning.
 - c. Suppose Glenda rolled a total sum of 60 for her nine rolls.
 - i. What is the mean sum for the rolls Glenda made?

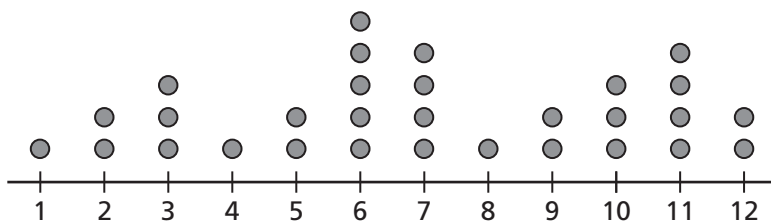
 - ii. Give an example of nine rolls that Glenda could have made. Explain.

Additional Practice *(continued)*

Investigation 2

Data About Us

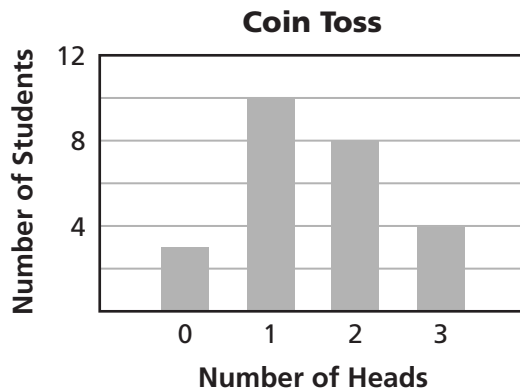
3. Mrs. Wilcox asked each of her students to spin a spinner with 12 equal sections labeled with whole numbers between 1 and 12. The dot plot shows the results of the students' spins.



- How many students are in Mrs. Wilcox's class?
 - What is the mean value of the spinner results by Mrs. Wilcox's class?
 - What is the median value of the spinner results by Mrs. Wilcox's class?
 - Which do you think is the better indicator of a typical result of a student's spin in Mrs. Wilcox's class, the median or the mean? Explain your reasoning.
4. The students in North Middle School had a contest to see who could save the most money. The mean savings in Ms. Jones' class (25 students) was the same as the mean savings for the whole school (300 students). The mean amount was \$16.00.
- What is the total savings for Ms. Jones' students? Explain.
 - What is the total savings for the whole school? Explain.

Additional Practice *(continued)***Investigation 2****Data About Us**

5. Every student in Mr. Smith's class tossed 3 coins and counted the number of heads. The bar graph below displays their results.



- a. How many students are in Mr. Smith's class?

- b. What is the mean number of heads?

- c. What is the median number of heads?

- d. How many heads did the students toss altogether?

- e. How many tails did the students toss altogether?

Additional Practice *(continued)*

Investigation 2

Data About Us

6. The Cycle Shoppe sells 10 brands of bicycles with these prices:
\$90, \$90, \$110, \$120, \$120, \$150, \$150, \$150, \$180, \$240
- Biker's Haven sells 10 similar brands of bicycles with these prices:
\$90, \$100, \$100, \$100, \$140, \$150, \$150, \$170, \$180, \$250
- Make two dot plots, one for each bike shop. Use the same scale on each dot plot.
 - What is the mean price for each bike shop?
 - What is the median price for each bike shop?
 - For each bike shop, which measure of central tendency seems to most accurately reflect the prices of the bikes? Explain.

Additional Practice *(continued)*

Investigation 2

Data About Us

For Exercises 7 and 8, use this information.

Mr. Johnson's class of 20 students collects 180 cans of food for the food drive.

Ms. Smith's class of 25 students collects 200 cans of food.

7. Which class has a greater mean number of cans of food?
- A. Mr. Johnson's class
 - B. Ms. Smith's class
 - C. The means are equal.
 - D. There isn't enough information to tell.
-
8. Which class has a greater median number of cans of food?
- F. Mr. Johnson's class
 - G. Ms. Smith's class
 - H. The means are equal.
 - J. There isn't enough information to tell.

Additional Practice: Digital Assessments

Investigation 2

Data About Us

9. The students in Ms. Allen’s class collected aluminum cans for a recycling program. The numbers of cans collected per student were 10, 14, 10, 17, 11, 9, 3, 15, and 10.

Circle the numbers that make each statement true.

a. The median number of cans collected is $\begin{bmatrix} 10 \\ 11 \\ 14 \\ 20 \end{bmatrix}$.

b. The mean number of cans collected is $\begin{bmatrix} 10 \\ 11 \\ 14 \\ 20 \end{bmatrix}$.

c. The mode number of cans collected is $\begin{bmatrix} 10 \\ 11 \\ 14 \\ 20 \end{bmatrix}$.

10. The table shows the number of movie tickets sold over four days at different theaters.

Number of Movie Tickets Sold Over Four Days

Fun Time Theater	Royalty Cinema	Five Star Movies
508	356	490

Select *true* or *false* for each statement.

- | | true | false |
|---|-----------------------|-----------------------|
| The Fun Time Theater sold a mean number of 127 tickets per day. | <input type="radio"/> | <input type="radio"/> |
| There is not enough information to determine the mode for the number of tickets sold at Royalty Cinema. | <input type="radio"/> | <input type="radio"/> |
| There is not enough information to determine the mean number of tickets sold at all three theaters. | <input type="radio"/> | <input type="radio"/> |

Skill: Mean, Median, and Mode**Investigation 2****Data About Us**

For Exercises 1–3, use the table.

1. What is the mean height of the active volcanoes listed to the nearest foot?

Active Volcanoes	
Name	Height Above Sea Level (ft)
Cameroon Mt.	13,354
Mount Erebus	12,450
Asama	8,300
Gerde	9,705
Sarychev	5,115
Ometepe	5,106
Fogo	9,300
Mt. Hood	11,245
Lascar	19,652

2. What is the median height of the active volcanoes listed?

3. What is the mode of the heights of the active volcanoes listed?

The sum of the heights of all the students in a class is 1,472 inches.

4. The mean height is 5 feet 4 inches. How many students are in the class?
(1 ft = 12 in.)
5. The median height is 5 feet 2 inches. How many students are 5 feet 2 inches or taller? How many are shorter?

Skill: Mean, Median, and Mode *(continued)***Investigation 2****Data About Us**

The number of pages read (to the nearest multiple of 50) by the students in history class last week are shown in the tally table.

Pages	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750
Tally				 		 									

- Find the mean, the median, and the mode of the data.
- Are there any outliers in this set of data?
- Do any outliers raise or lower the mean?
- Would you use the mean, median, or mode to most accurately reflect the typical number of pages read by a student? Explain.

Additional Practice**Investigation 3****Data About Us**

The members of a chess club sell raffle tickets to earn money for their activities.

1. On the first day, Paula records how much each person earned from selling tickets.

Chess Club Ticket Sales

Student	Paula	Quin	Robert	Stephanie
Amount	\$13.25	\$10.40	\$15.65	\$12.70

- a. Find the range of the sales amounts.
 - b. The four chess club members share the sales equally. How much does each member receive?
 - c. The fifth member of the chess club, Tucker, brings his money in late. He brings \$13.65. Paula then recalculates each person's share using all five members' earnings. Without doing any computation, how does this affect the amount each member receives? Explain.
2. On the second day, Tucker sold \$18.50 in raffle tickets. After sharing the sales equally, each member's share was \$11.45. What does this say about the Day 2 sales for the other four students? Explain.

Additional Practice *(continued)***Investigation 3****Data About Us**

3. Kiaya and Kendrick are preparing for the long jump at a track meet. The long jumps are measured in meters.

Kiaya records the following jumps: 4.4, 5.0, 4.9, 5.1, 4.8, 4.8, 4.9, 4.9

Kendrick records the following jumps: 4.8, 4.7, 3.8, 5.3, 4.9, 4.8, 4.5, 5.2

- a. Make a line plot of each person's jumps.

- b. What are the median and IQR for each distribution?

- c. What are the mean and MAD for each distribution?

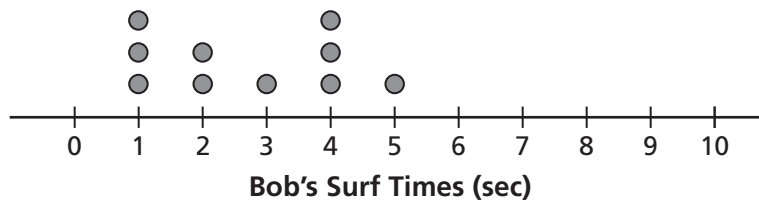
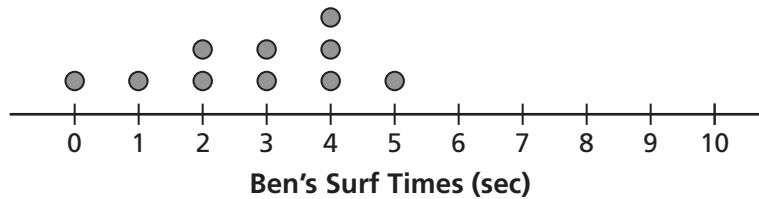
- d. At the track meet, who is more likely to make the longest jump? Explain your answer using measures of center and variability.

Additional Practice *(continued)*

Investigation 3

Data About Us

4. Ben and Bob are learning to surf. Their mother times how many seconds the boys stand on their surfboards during each ride. The dot plots below show the distributions of ten surf times for each boy.



- Find the mean of each data set.
- Find the MAD of each data set.
- Compare the MADs. In which distribution do the data vary more from the mean? Explain.
- Bob's friend Brian is learning to surf. Ben records Brian's times, in seconds: 3, 3, 3, 4, 4, 4, 4, 5, 5, and 6.
 - Draw a dot plot to show Brian's data.
 - Compute the MAD of Brian's data set.
 - Compare the three distributions. In which distribution do the data vary most from the mean? Explain your thinking.

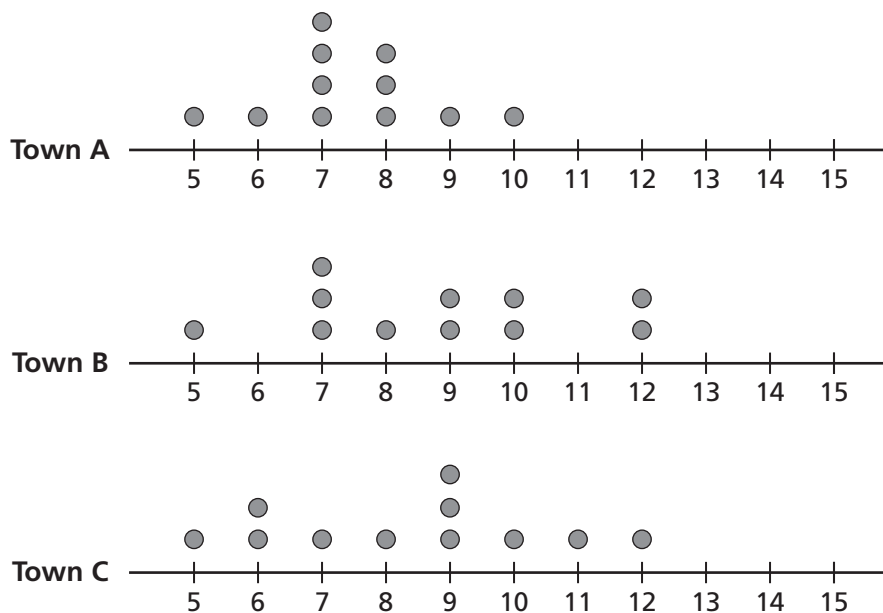
Additional Practice *(continued)*

Investigation 3

Data About Us

For Exercises 5–7, use the line plots below. Each line plot shows the hourly pay teenagers earn at similar jobs in different towns.

Hourly Pay in Three Towns



5. Find the interquartile range (IQR) and mean absolute deviation (MAD) of each data set.

6. Using the MAD, which distribution has the least variation from the mean?
The most?

7. Using the IQR, which distribution has the greatest spread in the middle 50% of the data? The least?

Additional Practice *(continued)***Investigation 3****Data About Us**

8. The frequency table shows the number of points scored by 3 players on the basketball team in 15 games.

Player's Points

Game	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Player A	5	4	5	2	8	5	6	2	4	0	5	10	6	4	5
Player B	2	1	0	2	3	2	3	1	0	3	1	3	2	0	3
Player C	3	4	3	2	5	3	4	3	2	5	2	4	3	3	5

- a. Draw a line plot or dot plot of each player's data. Use the same scale on each graph so you can easily compare the distributions.
- b. Compute the median and IQR for each player. Write a statement that compares the players using the median and IQR.
- c. Compute the mean and MAD for each player. Write a statement that compares the players using the mean and MAD.

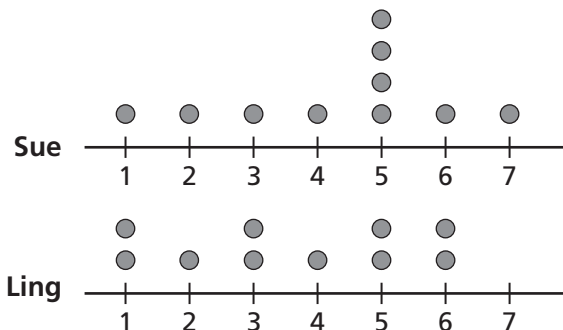
Additional Practice: Digital Assessments

Investigation 3

Data About Us

9. The dot plots show the number of goals made by two members of a soccer team for ten games.

Soccer Goals Per Game



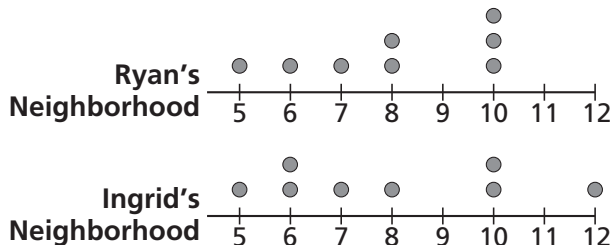
Which statements describe the data?

Select all that apply.

- Based on the mean of the data sets, Ling had a greater average number of goals per game.
- Based on the IQR, Sue's distribution had the greater spread in the middle 50% of the data.
- The MAD of Ling's data set is 1.6.
- The MAD of Sue's data set is 4.3.
- Based on the MAD of the data sets, Sue's distribution has the least variation from the mean.

10. Ryan and Ingrid earn money by mowing lawns. The dot plots show how much each of them earn per lawn in their neighborhoods.

Rate (in Dollars) Per Lawn



Using the tiles provided, fill in the spaces to complete the statements.

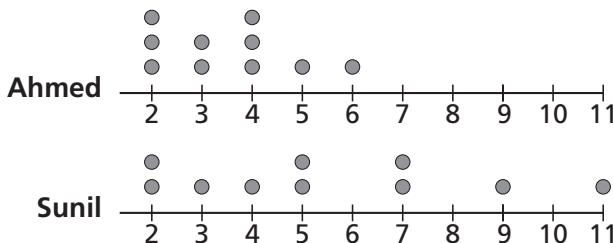
Ryan's Ingrid's

8 1.5 9 2

- a. The MAD of Ryan's data set is .
- b. The MAD of Ingrid's data set is .
- c. Based on the MAD, data distribution had the greater variation from the mean.

11. Ahmed and Sunil are in a math contest. They are completing math problems in a speed round. The dot plots show how many minutes they each spent completing ten math problems.

Number of Minutes Per Problem



Circle the numbers and name that make each statement true.

a. The MAD of Ahmed's data set is $\begin{bmatrix} 1.1 \\ 3.5 \\ 5 \\ 10 \end{bmatrix}$ and the MAD of Sunil's data set is $\begin{bmatrix} 2.4 \\ 5 \\ 5.5 \\ 10 \end{bmatrix}$.

b. When comparing the distributions, the data vary least from the mean in $\begin{bmatrix} \text{Ahmed's} \\ \text{Sunil's} \end{bmatrix}$ data set.

Additional Practice**Investigation 4****Data About Us**

For Exercises 1–3, use the information below.

Pete plays quarterback on his school's football team. He records the length of each pass in yards in the table below.

Length of Passes (yd)

14	42	36	51	12	8
19	14	12	27	18	19
4	12	18	13	21	24
21	6	16	14	9	6
11	6	12	9	8	5

- Draw a box-and-whisker plot to display the data.
 - Which whisker is longer? Why?
 - What information does the median give about the distances Pete threw?
 - Find the mean of the distances. Compare the mean and the median distances. What does this comparison tell you about the shape of the distribution?

Additional Practice *(continued)***Investigation 4****Data About Us****Length of Passes (yd)**

14	42	36	51	12	8
19	14	12	27	18	19
4	12	18	13	21	24
21	6	16	14	9	6
11	6	12	9	8	5

2. a. Draw a histogram showing the distribution of the data. Use an interval size of 10 yards.
- b. How many passes did Pete complete that were at least 10 yards long, but less than 20 yards long? Explain how you can use the histogram to find your answer.
- c. How many passes did Pete complete that were 30 yards or longer? Explain how you can use the histogram to find your answer.
- d. In what interval of the histogram does the median fall? How is this possible?

Additional Practice *(continued)*

Investigation 4

Data About Us

3. a. Compare the shape of the histogram in Exercise 2 to the shape of the box plot in Exercise 1.
- b. How does the height of the first bars in the histogram relate to the length of the left-hand whisker in the box plot?
- c. How does the histogram help you understand the length of the right-hand whisker in the box plot?
- d. Can you find the mean of the data using the histogram? Can you find the mean of the data using the box-and-whisker plot? Explain your answer.
- e. Can you find the number of data values using the histogram? Can you find the number of data values using the box-and-whisker plot? Explain your answers.

Additional Practice *(continued)***Investigation 4****Data About Us**

For Exercises 4 and 5, use the information below.

Mr. Keeler's class and Mrs. Booth's class competed in a push-up contest. The tables below show the data from each class.

Mr. Keeler's Class

Gender	Number of Push-ups
G	6
B	9
G	10
B	11
G	12
B	13
G	14
B	15
G	15
G	16
B	17
G	18
B	19
G	20
G	20
G	21
B	22
G	24
B	25
G	30

Mrs. Booth's Class

Gender	Number of Push-ups
G	6
B	10
B	13
G	14
G	14
G	16
G	18
B	20
G	21
B	21
B	21
B	24
B	24
G	25
B	26
B	27
B	29
G	30
G	35
B	35

4. Draw two box plots to compare the boys in Mr. Keeler's class to the boys in Mrs. Booth's class. From which class did the boys do better? Explain your reasoning.

Additional Practice *(continued)***Investigation 4****Data About Us****Mr. Keeler's Class**

Gender	Number of Push-ups
G	6
B	9
G	10
B	11
G	12
B	13
G	14
B	15
G	15
G	16
B	17
G	18
B	19
G	20
G	20
G	21
B	22
G	24
B	25
G	30

Mrs. Booth's Class

Gender	Number of Push-ups
G	6
B	10
B	13
G	14
G	14
G	16
G	18
B	20
G	21
B	21
B	21
B	24
B	24
G	25
B	26
B	27
B	29
G	30
G	35
B	35

5. a. Make a box plot that shows the data for all of the girls in Mr. Keeler's and Mrs. Booth's classes combined. Make a box plot that shows the data for all of the boys in Mr. Keeler's and Mrs. Booth's classes combined.

Additional Practice *(continued)*

Investigation 4

Data About Us

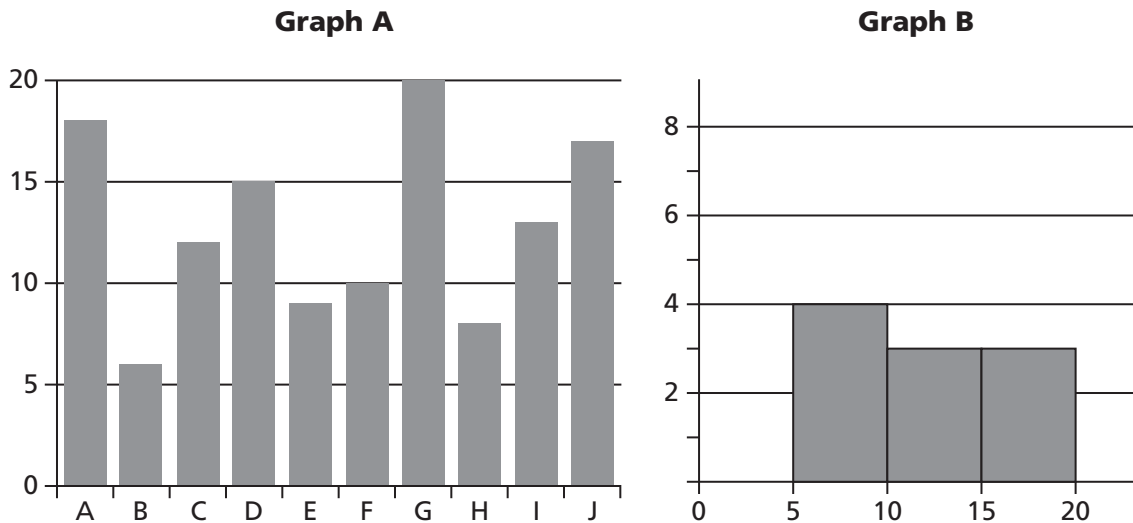
- b. Compare the box plots in part (a). Who did better, the boys or the girls? Explain your reasoning.
- c. Does that data for the girls include outliers? Does the data for the boys include outliers? Explain your reasoning.
- d. Consider what you know about the outliers in the data. Does this change your answer to question (b)? Explain.

Additional Practice *(continued)*

Investigation 4

Data About Us

6. Kelly gives each of her friends the same 100-piece puzzle. She displays the number of minutes it takes each friend to complete the puzzle in the graphs below.



- a. What title and axis labels would be appropriate for Graph A? For Graph B?

- b.
 - i. Which friend completed the puzzle in the least amount of time? Which friend took the most time to complete the puzzle? What were their times?

 - ii. Which graph did you use to find your answers for part i? Why?

- c. Which graph can you use to find the typical length of time it takes to complete the puzzle? What is the typical length of time? Explain your reasoning.

- d. If you were given only Graph A, would you have enough information to draw Graph B? Explain your reasoning.

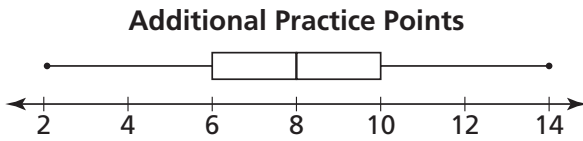
- e. If you were given only Graph B, would you have enough information to draw Graph A? Explain your reasoning.

Additional Practice: Digital Assessments

Investigation 4

Data About Us

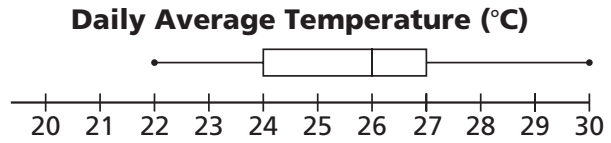
7. The box plot represents the number of Additional Practice points Carla earned last month for 10 different assignments.



Use the tiles provided to complete the statements.

- a. The range of the data is .
- b. The median number of Additional Practice points earned is .

8. Andreas recorded the daily temperature for several days. The box plot represents his data.



Which statements describe the data?

Select all that apply.

- The median temperature was 26°C.
- The range of temperatures is 3 degrees.
- The box plot cannot be used to find the mean temperature.
- The box plot can be used to find the mode of the data set.

9. The histogram shows the number of hours Kenya's friends spent exercising last month.

Circle the numbers that make each statement true.

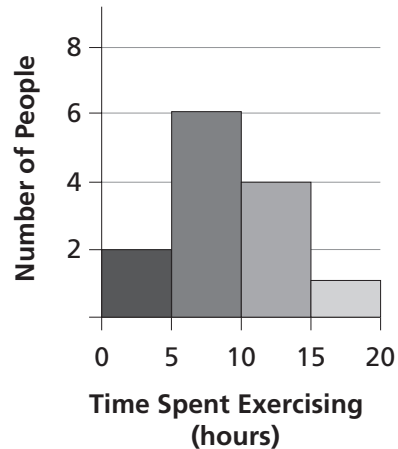
a. Kenya collected data about exercising

from $\begin{bmatrix} 6 \\ 13 \\ 20 \\ 25 \end{bmatrix}$ friends.

b. A total of 4 friends spent between $\begin{bmatrix} 0 \text{ and } 5 \\ 5 \text{ and } 10 \\ 10 \text{ and } 15 \\ 15 \text{ and } 20 \end{bmatrix}$ hours exercising.

c. A total of $\begin{bmatrix} 2 \\ 4 \\ 6 \\ 10 \end{bmatrix}$ friends spent between 5 and 15 hours exercising.

Exercise Data



Skill: Quartiles, Interquartiles, and Ranges**Investigation 4****Data About Us**

For each data set, find the quartiles, IQR, and the range.

1. 50, 60, 55, 70, 30, 50, 25, 90, 45

$$Q_1 =$$

$$Q_2 =$$

$$Q_3 =$$

$$\text{IQR} =$$

$$\text{Range} =$$

2. 30, 25, 15, 20, 20, 25, 35, 40, 30, 15, 25

$$Q_1 =$$

$$Q_2 =$$

$$Q_3 =$$

$$\text{IQR} =$$

$$\text{Range} =$$

3. 85, 70, 50, 65, 90, 80, 75, 80, 90, 95, 65, 80

$$Q_1 =$$

$$Q_2 =$$

$$Q_3 =$$

$$\text{IQR} =$$

$$\text{Range} =$$

4. 40, 70, 80, 65, 75, 85, 90, 85, 60, 55

$$Q_1 =$$

$$Q_2 =$$

$$Q_3 =$$

$$\text{IQR} =$$

$$\text{Range} =$$