

CHAPTER
5

Data and Probability

Lesson 5.1 Average

Find the mean or average of each set of data.

The table shows the number of books Sophia borrowed from the library in four months.



Number of Books Borrowed

Month	March	April	May	June
Number of Books	12	10	8	14

1. **Step 1** Find the total number of books.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

2. **Step 2** Divide the total number of books by 4.

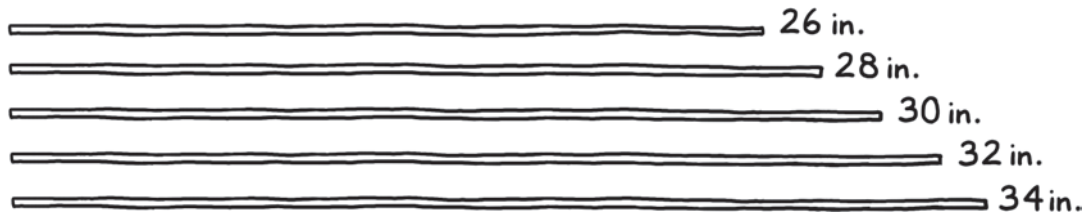
$$\underline{\hspace{2cm}} \div 4 = \underline{\hspace{2cm}}$$

3. **Step 3** Sophia borrowed an average of _____ books every month.

Name: _____

Date: _____

David has 5 sticks of different lengths.



4. **Step 1** Find the total length of the 5 sticks.

_____ in. + _____ in. + _____ in. +

_____ in. + _____ in. = _____ in.

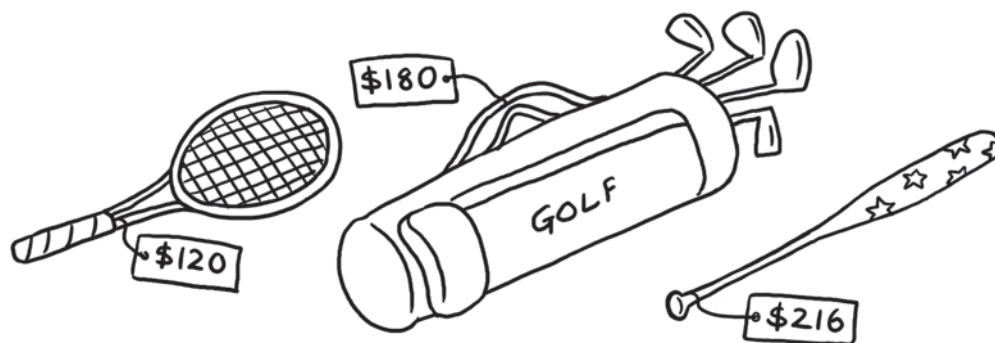
5. **Step 2** Divide the total length by 5.

_____ \div 5 = _____ in.

6. **Step 3** The average length of the sticks is _____ inches.

Find the mean or average.

7.



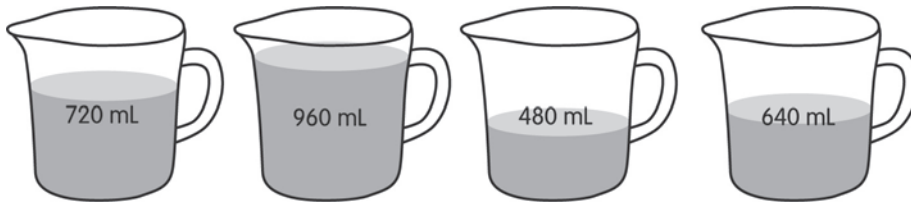
The mean price of the sporting goods is \$ _____.

Name: _____

Date: _____

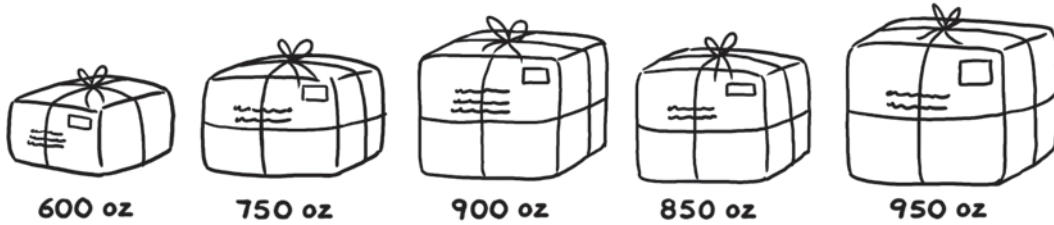
Find the mean or average.

8.



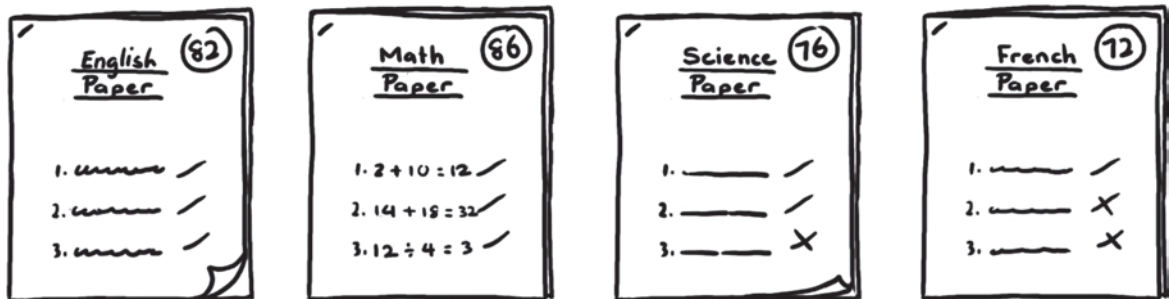
The average volume of the jugs is _____ milliliters.

9.



The mean weight of the parcels is _____ ounces.

10.



Jared's average test score is _____ points.

Name: _____

Date: _____

Answer the questions.

The table below shows the ages of 4 students.

Students' Ages

Name	Age
Alisha	15
Daniel	12
Jose	16
Matthew	17

- 11.** Which student is the same age as the average age?

- 12.** Which student(s) is/are older than the average age?

- 13.** Which student(s) is/are younger than the average age?

Name: _____

Date: _____

Solve.

14. The mean height of 3 boys is 150 centimeters. The mean height of 2 girls is 145 centimeters. Find the mean height of the 5 students.

15. An average of 1,896 people visited a museum in each month of March and April. Another 2,736 people visited the museum in May. What is the average number of visitors at the museum for these three months?

Name: _____

Date: _____

16. The average number of red, blue, and green beanbags in a store is 136. There are 30 more red beanbags than blue beanbags. There are 15 fewer green beanbags than blue beanbags. How many green beanbags are in the store? Use bar models to help you.

17. Joleen's total test score in English, math, and science is 264. She scores 1 point more in science than her average score and 5 points more in math than in science. What is her score in English?

Name: _____

Date: _____

Lesson 5.2 Median, Mode, and Range

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

7, 4, 9, 5, 10, 3, 4

1. Order the numbers from the least to the greatest: _____

2. Median: _____

3. Mode: _____

4. Range: _____

5. Mean: _____

18 ft, 16 ft, 16 ft, 12 ft, 19 ft, 15 ft

6. Order the distances from the least to the greatest: _____

7. Median: _____

8. Mode: _____

9. Range: _____

10. Mean: _____

Name: _____

Date: _____

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

35 yd, 38 yd, 30 yd, 38 yd, 34 yd

11. Order the distances from the least to the greatest: _____

12. Median: _____

13. Mode: _____

14. Range: _____

15. Mean: _____

Find the range, mode, median, and mean.

The table shows the time it takes a group of students to travel to school.

Travel Time

Travel Time (minutes)	10	15	20	25	30
Number of Students	1	3	2	1	2

16. The range of the travel times is _____ minutes.

17. The mode of the travel times is _____ minutes.

18. The median travel time is _____ minutes.

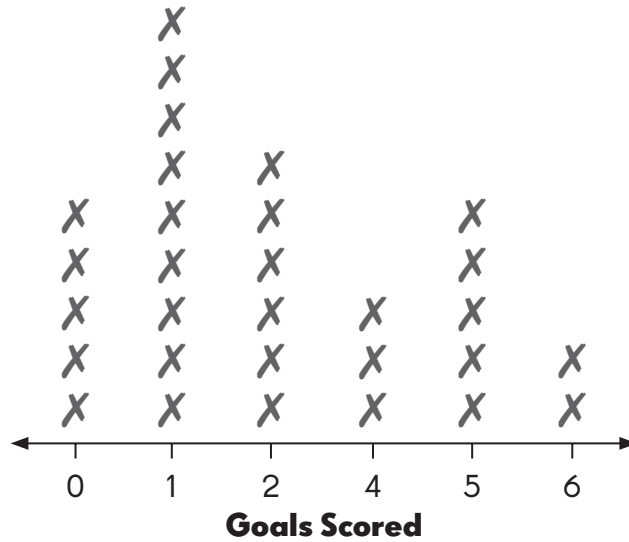
19. The mean travel time is _____ minutes.

Name: _____

Date: _____

Use the line plot to complete the table.

The line plot shows the number of goals scored by each player in a soccer competition. Each X represents one player.



20.

Goals Scored

Number of Goals	0	1	2	4	5	6
Number of Players	5					

Complete. Use the data in the line plot or the table.

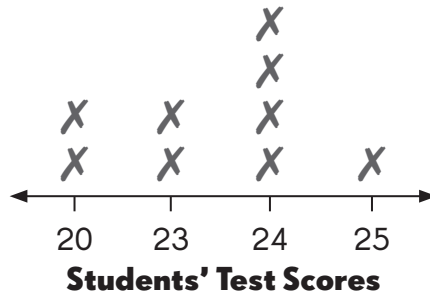
- 21. _____ players were in the soccer competition.
- 22. The median number of goals scored is _____.
- 23. The mode of the set of data is _____.
- 24. The total number of goals scored is _____.

Name: _____

Date: _____

Fill in the blanks. Use the data in the line plot.

The line plot shows the points scored by students in a test. Each **X** represents one student.



- 25. _____ students took the test.
- 26. The mode of the set of data is _____.
- 27. The median of the set of data is _____.
- 28. The range of the set of data is _____.
- 29. The total number of points scored is _____.
- 30. The mean of the set of data is _____.

Name: _____

Date: _____

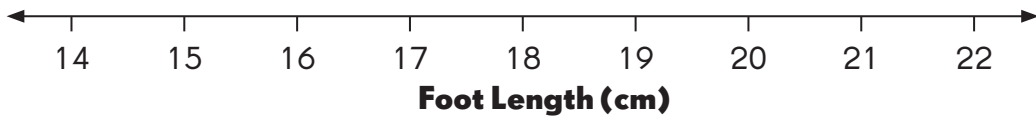
Make a line plot to show the data in the table.

The table shows the foot length, in centimeters, of a group of students.

Foot Length

Length (cm)	14	16	18	20	22
Number of Students	3	2	2	4	1

31. Make each **X** represent one student.



Complete. Use the data in your line plot.

32. There are _____ students.

33. The median of the set of data is _____ centimeters.

34. The mode of the set of data is _____ centimeters.

35. The range of the set of data is _____ centimeters.

Name: _____

Date: _____

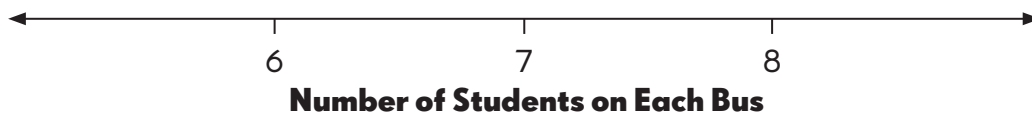
Make a line plot to show the data in the table.

The school uses 8 buses. The table shows the number of students on each bus.

Number of Students on Each Bus

Number of Students	6	7	8
Number of Buses	3	2	3

- 36.** Make each \times represent one student.



Complete. Use the data in your line plot.

- 37.** The median of the set of data is _____.
- 38.** The mode of the set of data is _____.
- 39.** The range of the set of data is _____.
- 40.** Find the mean number of students who are on each bus. _____

Name: _____

Date: _____

Lesson 5.3 Stem-and-Leaf Plots

Complete. Use the data in the stem-and-leaf plot.

The stem-and-leaf plot shows the time taken by 10 students to play the same video game.

Video Game Times (min)	
Stem	Leaves
2	8
3	0 0 0 5 5 8
4	0 5
5	9

$$2 \mid 8 = 28$$

1. The median, the middle time, is _____ minutes.
2. The mode, the most frequent time, is _____ minutes.
3. The range of the times is _____ minutes.
4. The outlier, the time farthest from the others, is _____ minutes.

Name: _____

Date: _____

Complete. Use the data in the stem-and-leaf plot.

The stem-and-leaf plot shows the heights of 8 children.

Heights of Children (in.)	
Stem	Leaves
2	4
3	0 3 4
4	2 5 5
5	9

$$2 \mid 4 = 24$$

5. The modal height is _____ inches.
6. The median height is _____ inches.
7. The range of the heights is _____ inches.
8. The outlier is _____ inches.
9. The mean height is _____ inches.

Name: _____

Date: _____

Complete. Use the data in the stem-and-leaf plot.

Nine motorists were surveyed to find the amount of money they spend every month on gas.

Amount Spent on Gas (\$)	
Stem	Leaves
20	5
26	4 8
27	5 5 6
28	4
29	2
30	9

$$20 \mid 5 = 205$$

10. The median of the set of data is \$_____.
11. The mode of the set of data is \$_____.
12. The range of the set of data is \$_____.
13. The outlier of the set of data is \$_____.
14. The mean of the set of data is \$_____.

Name: _____

Date: _____

Make a stem-and-leaf plot to show the data.

The data shows the number of dogs walked by a pet service in 9 days.

10, 25, 32, 25, 27, 33, 26, 28, 28

15.

Number of Dogs Walked	
Stem	Leaves

____ | ____ = ____

Complete. Use the data in the stem-and-leaf plot.

16. The modes of the set of data are _____ and _____.

17. The median of the set of data is _____.

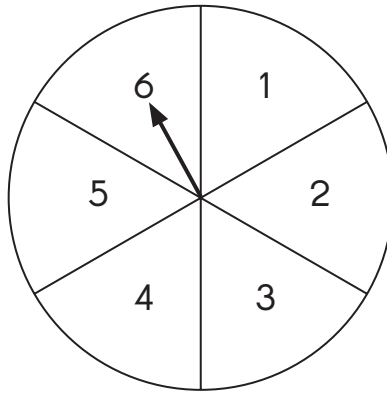
18. The range of the set of data is _____.

19. The average of the set of data is _____.

20. The number of dogs walked was less than 30 on _____ days.

Lesson 5.4 Outcomes

Complete. Write *more likely*, *less likely*, *certain*, *impossible*, or *equally likely*.



1. It is _____ that the spinner will land on 6.
2. It is _____ that the spinner will land on a number from 1 to 6.
3. It is _____ that the spinner will land on a number less than 5.
4. It is _____ that the spinner will land on 8.
5. It is _____ that the spinner will land on an even or an odd number.

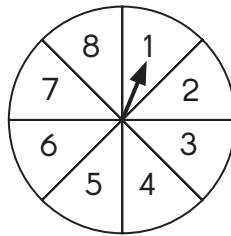
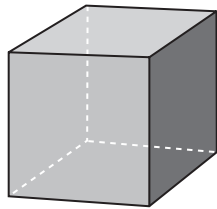
Write *more likely*, *less likely*, *certain*, *impossible*, or *equally likely* for each of these statements.

6. I will go to college. _____
7. I will grow 5 inches this week. _____
8. My father is older than me. _____
9. A coin will land on heads when it is tossed. _____
10. A coin will land on heads or tails when it is tossed. _____

Name: _____

Date: _____

Write the number of possible outcomes.



11. There are _____ possible outcomes when a coin is tossed.
12. There are _____ possible outcomes when the cube is tossed.
13. The spinner has _____ possible outcomes.

Study the data in the table. Write *more likely*, *less likely*, *certain*, *impossible*, or *equally likely* to describe each outcome.

Number of Caps in Three Boxes

Color of Caps	Box A	Box B	Box C
Orange	9	0	6
Purple	3	8	6
Red	3	6	4

14. A purple cap is drawn from Box A. _____
15. An orange cap is drawn from Box B. _____
16. An orange or purple cap is drawn from Box C. _____
17. A green cap is drawn from Box C. _____

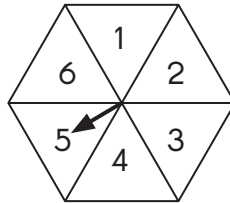
Name: _____

Date: _____

Lesson 5.5 Probability as a Fraction

Find the probability as a fraction in simplest form.

1. Aleesha spins the spinner once. She wants to land on a number greater than 4. What is the probability of a favorable outcome?



a. There are _____ favorable outcomes.

b. There are _____ possible outcomes.

c. Probability of a favorable outcome =

=

Aleesha spins the spinner again.

2. What is the probability that the spinner will land on 4?

3. What is the probability that the spinner will land on an even number?

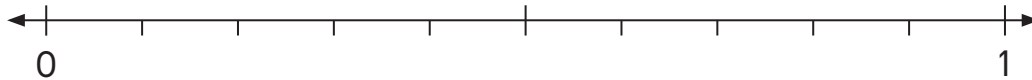
4. What is the probability that the spinner will land on a number less than 5?

5. What is the probability that the spinner will land on a number less than 7?

Name: _____

Date: _____

**Find the probability of each outcome on the number line.
Write each probability as a fraction in simplest form.
Then describe the outcome as *more likely*, *less likely*, *certain*, *impossible*,
or *equally likely*.**



A bag contains 3 red balls, 4 blue balls, 2 green balls, and 1 yellow ball.
Find the probability of drawing

6. a yellow ball:

It is _____ that a yellow ball will be drawn from the bag.

7. a green ball:

It is _____ that a green ball will be drawn from the bag.

8. a yellow ball or a green ball:

It is _____ that a yellow or a green ball will be drawn from the bag.

9. a green ball, a red ball, or a blue ball:

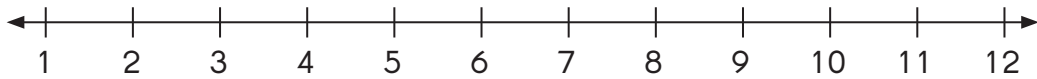
It is _____ that a green, red, or a blue ball will be drawn from the bag.

Name: _____

Date: _____

Find the probability as a fraction in simplest form.

A set of 12 cards is numbered from 1 to 12.



Find the probability of drawing

10. a card greater than 7:

11. an odd number:

12. a card less than 10:

13. an even number:

14. a 1-digit number:

15. a 2-digit number:

Name: _____

Date: _____

Draw.

A spinner has 8 equal parts. Four of the parts are green, 2 of the parts are purple, and the last 2 parts are blue and red.

16. Draw the spinner with the correct colored parts.

Find the probability as a fraction in simplest form.

Find the probability of landing on

17. purple:

18. green:

19. blue or red:

20. yellow:

Name: _____

Date: _____

Lesson 5.6 Real-World Problems: Data and Probability

Solve. Show your work.

- 1.** In a basketball game, Miguel, Tony, Jason, and Finch scored an average of 16 points. Jason scored 20 points and Finch scored 8 points. How many points did Miguel and Tony score altogether?

- 2.** Three dolphins are born at a zoo. The total weight of the baby dolphins is 196 pounds. The first baby dolphin weighs 88 pounds. What is the mean weight of the other two dolphins?

Name: _____

Date: _____

3. Adrian, Dakota, and Calvin made an average of 52 snacks. Adrian and Dakota made an average of 61 snacks. Dakota and Calvin made an average of 44 snacks. How many snacks did each of them make?

4. A group of 100 students took a quiz. Their average score was 76 points. If the average score for the boys was 80 points and the average score for the girls was 70 points, how many girls participated in the quiz?

Name: _____

Date: _____

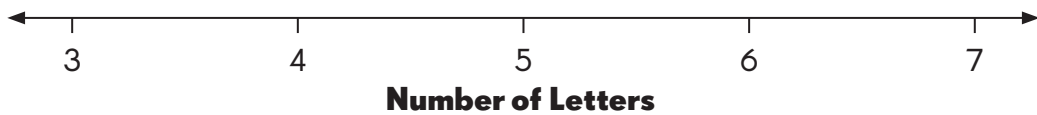
Use the data to complete the table and the line plot.

5. Complete the table with the number of letters in each name.

Number of Letters

Name	Number of Letters
Jessica	
Brenda	
Carl	
Fiona	
Jeremy	
Barry	
Nicole	
Zoe	
Ann	

- a. Make a line plot to show the data.



- b. Find the mode.
- c. Find the range.
- d. Find the mean.
- e. Ann forgot to add her full name, Annemarie, to the set of data. Does this change the mode, range, or mean?

Name: _____

Date: _____

Solve. Use the data in the stem-and-leaf plot. Show your work.

The data shows the scores from a bowling tournament.

Bowling Scores	
Stem	Leaves
4	6
5	4
6	3
7	
8	1 7 7
9	2 8

$$4 \mid 6 = 46$$

6. What is the modal score?
7. What is the median score?
8. What is the range of the scores?
9. What is the mean score?
10. Another player joins the tournament. The new mean score is 76. What is the new player's score?

Name: _____

Date: _____

11. There are 20 students in a classroom. If students leave randomly, the probability that the first student to leave the classroom is a girl is $\frac{3}{5}$.
How many girls are there?

12. A bag contains 3 red crayons, 2 blue crayons, 4 yellow crayons, and 3 green crayons. A crayon is drawn from the bag.

a. Find the probability that the crayon is a yellow crayon.

b. Find the probability that the crayon is a red or a green crayon.

Name: _____

Date: _____

- 13.** A parking lot has 20 vehicles in it. There are 8 cars, 4 buses, 6 motorcycles, and 2 vans. The first vehicle that leaves the parking lot is a car. If vehicles leave randomly, what is the probability that the second vehicle to leave is a bus?

- 14.** The mean of Susan's math and science scores is 74 points. The mean of her math and English scores is 83 points. How many more points did Susan score in English than in science?

Name: _____

Date: _____



Put On Your Thinking Cap!

1. Mr. Peterson sells an average of 147 newspapers on each weekday, and an average of 217 newspapers on each day of the weekend. What is the average number of newspapers Mr. Peterson is able to sell on each day of the week?

2. Pauline scores an average of 78 points on three tests. How many points will Pauline need to score on her next test to raise her average score to 82 points?

Name: _____

Date: _____

3. Box B contains $\frac{1}{2}$ as many paper clips as Box A. Box C contains $\frac{2}{3}$ as many paper clips as Box B. The average number of paper clips in each box is 88. How many paper clips are in Box A?

4. Mr. Clarkson and Ms. Rose had an average of \$180. After Mr. Clarkson spent \$73 and Ms. Rose received \$38 from her father, Mr. Clarkson had $\frac{1}{4}$ as much money as Ms. Rose. How much money did each have at first?

Name: _____

Date: _____

- 5.** Tracy, Joyce, Mark, and Sarah collect key chains. They have an average of 68 key chains. Tracy has 78 key chains. Joyce has half as many key chains as Mark. Sarah has 28 fewer key chains than the total number of key chains that Joyce and Mark have. How many key chains does Mark have?
- 6.** A group of students calculated their average score at a spelling bee. They realized that if one of them scored 9 more points, their average score would be 81 points. If one of them scored 3 points less, their average score would be 78 points. How many students were in the group?

Name: _____

Date: _____

- 7.** The mean height of Jason, Peter, and Edward is 145 centimeters. Jason is 7 centimeters taller than Peter. Peter is 10 centimeters taller than Edward. What is each boy's height?