Name: _____ Date: _____

CHAPTER 5

Data and Probability

PROBLEM SOLVING

Thinking Skills

Answer each question. Show your work.

1. Allison's average score on four tests is 65.
If her lowest test score is left out, her average score for the three remaining tests would be 69. What is Allison's lowest score?

2. Jamal has a deck of 52 playing cards. What is the probability of drawing a 3, 4, or 5 of diamonds in a single draw? Write your answer as a fraction in simplest form.

3. The mean of this set of data is 55.
What is the value of x?

23 34 67 x 23 73 87

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Complete.

4. A school club wanted to sell flavored drinks to raise money for their activities. The club conducted a survey of 50 students to choose the flavors. The table shows the results of the survey.

Complete the table and help the club fill in their report using *impossible*, *certain*, *more likely*, or *less likely*.

Flavor	Number of Students	Likelihood of High Sales
Cherry	21	
Lime	9	
Grape	3	
Raspberry	17	
Orange	0	

Report:

We were _____ that of the 50 students surveyed, no one liked orange-flavored drinks. It is _____ that we are going to sell a lot of lime-flavored and grape-flavored drinks. Both the cherry and raspberry flavors are _____ to sell very well. It would be _____ to sell orange-flavored drinks to the students surveyed.

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Solve.

The stem-and-leaf plot shows the weights of 15 crates of oranges and apples. The part of the plot showing the weights of the two heaviest crates was torn away.

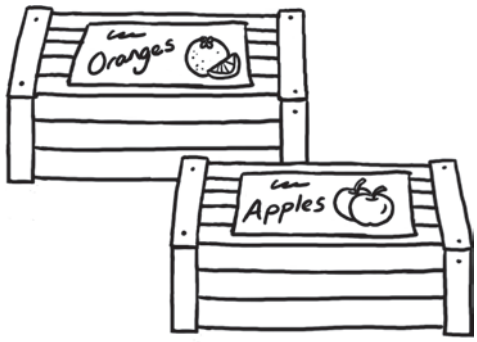
Weights of Crates (pounds)

Stem	Leaves
1	9
2	0 3 3 4 8
3	1 4 5 5 5
4	0 1

1 | 9 = 19

5. The mode of the set of data is _____ pounds.

6. The average weight of the four heaviest crates is 41 pounds. Find the range of the crate weights.



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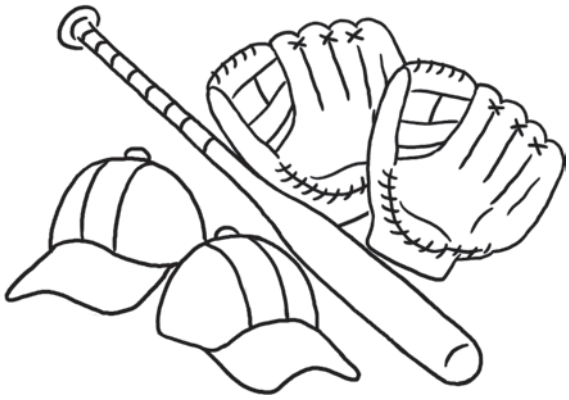
Answer the questions.

7. There are five prize coupons for 2 baseball gloves, 2 baseball caps, and 1 baseball bat in a bag. Austin picks out a coupon from the bag. What is the probability that Austin will win a baseball cap?



8. Shayla has 28 balls of yarn in a box. Twelve balls of yarn are red, two are purple, eight are blue, and the rest are white. She decides to pull a ball of yarn randomly from the box. Is it more likely that Shayla will pull out a red ball of yarn than a blue or white ball of yarn?

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PROBLEM SOLVING

Strategies

Solve. Show your work.

9. A mystery set of 5 numbers has a mean of 24, a median of 18, and a range of 42. The second greatest number is 36 and the least number is 6. List all the 5 numbers from the least to the greatest.

_____ _____ _____ _____ _____

least greatest

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10. There are seven cards labeled with the numbers 1 through 7.

a. Find the median of this set of cards.

b. Four cards are selected at random from these seven cards. The four cards selected have an average greater than the median of the seven original cards. Make a list of all possible combinations of the four random cards selected.

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PROBLEM SOLVING

Exploration

Solve.

11. You are given 5 bags, 10 red balls, and 10 green balls. Describe how you would distribute the balls in each bag so that the likelihood of drawing a green ball from any bag is

a. equally likely as drawing a red ball

b. impossible

c. certain

d. more likely than drawing a red ball

e. less likely than drawing a red ball

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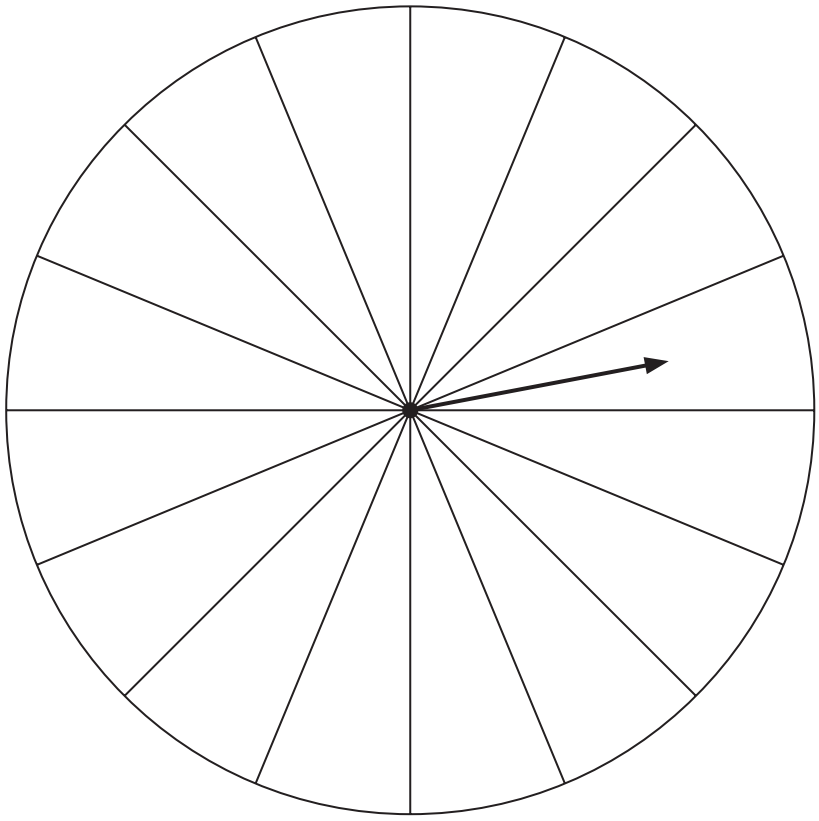
Solve.

12. Kathy made a spinner with 16 equal parts. She colored the parts yellow, green, and blue. When the spinner is spun, the probability of landing on yellow is $\frac{3}{16}$. The probability of landing on green is greater than the probability of landing on yellow but less than the probability of landing on blue. Color the spinner. There is more than one solution.



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Journal Writing

Write real-world problems.

13. | 57 | | 70 | | 56 | | 77 |

Use the data set to write a real-world problem using the word *mean*.

_____

_____

_____

_____

14. | 183 | | 257 | | 269 | | 350 | | 410 | | 436 | | 475 | | ? |

An unknown number is added to the data set. Write a real-world problem that requires the following steps for the solution.

$183 + 257 + 269 + 350 + 410 + 436 + 475 = 2{,}380$

$2{,}496 - 2{,}380 = 116$

_____

_____

_____

_____

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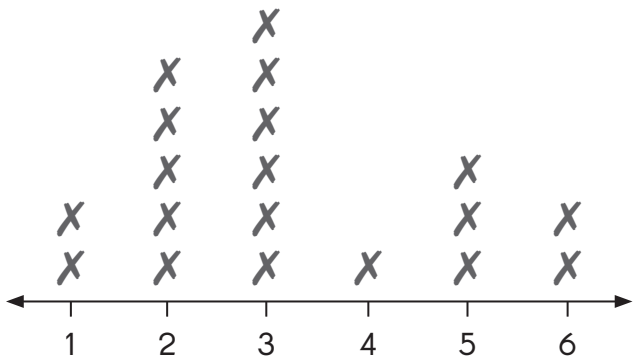
Explain.

15. A number cube has six faces numbered 1 through 6. The line plot shows how many times each number occurred when the number cube was tossed. Each ✗ represents one occurrence. Explain how to find the mean, median, and mode from the line plot.



Number on the Tossed Number Cube

Mean:

_____

_____

Median:

_____

_____

Mode:

_____

_____