



Name _____ Class _____ Date _____

SELECTED RESPONSE

- Misha has a board that is $17\frac{1}{2}$ inches long that he has to cut into 3 equal pieces. How long should each piece be?
 - $5\frac{2}{3}$ inches
 - $5\frac{5}{6}$ inches
 - $8\frac{3}{4}$ inches
 - $14\frac{1}{2}$ inches
- Jenni buys a piece of fabric that is $4\frac{7}{8}$ yards long. What is the decimal equivalent of $4\frac{7}{8}$?
 - 0.875
 - 4.8
 - 4.875
 - 4.95
- Sean bought 4.8 pounds of beef. His total was \$11.76 before tax. How much did Sean pay per pound of beef?
 - \$2.45
 - \$6.96
 - \$16.56
 - \$56.45
- A diver is working 30 yards below sea level. Another diver is taking a break on a platform directly above him that is 5 yards above sea level. How far apart are the two divers?
 - 5 yards
 - 25 yards
 - 35 yards
 - 40 yards
- Thuy has \$625 in her checking account. She writes two checks for \$23 each and then makes one deposit of \$146. What is Thuy's final checking account balance?
 - \$433
 - \$725
 - \$771
 - \$817
- Sally's baked bean recipe calls for 5 pounds of sugar and 20 pounds of dried beans. How many pounds of sugar are needed for a recipe using just 1 pound of dried beans?
 - $\frac{1}{5}$ pound
 - $\frac{1}{4}$ pound
 - 1 pound
 - 4 pounds
- Uma's salad dressing recipe calls for $\frac{1}{2}$ cup of yogurt. She wants to triple her recipe. How much yogurt does she need?
 - $1\frac{1}{2}$ cups
 - 2 cups
 - 3 cups
 - $3\frac{1}{2}$ cups
- The price of one share of a company declined \$12 per day for 6 days. How much did the price of one share decline in total after the 6 days?
 - \$6
 - \$18
 - \$60
 - \$72
- Michel's checking account balance was \$345. Michel withdrew \$160 three times. What is his balance now?
 - \$480
 - \$135
 - \$135
 - \$185
- The table below shows Giorgio's scores at a state golf tournament. What is Giorgio's average score for the five rounds?

Round	1	2	3	4	5
Score	3	1	-3	-2	-4

 - 4
 - 3
 - 2
 - 1

11. Lonnie ran 3 miles each day of her vacation. She ran a total of 24 miles. How many days was she on vacation?

- A. 6 C. 12
B. 8 D. 72

12. At the end of the year, Juan has \$52.71 more than 4 times his balance at the beginning of the year. If his ending balance is \$172.90, what was his balance at the beginning of the year?

- F. \$30.05 H. \$56.41
G. \$95.94 J. \$120.20

13. A treasure chest sits 1,256 feet below sea level. A captain looking for the treasure is in his house 769 feet above sea level. What is the vertical distance between the treasure chest and the captain's house?

- A. -496 feet
B. 496 feet
C. 1,256 feet
D. 2,025 feet

14. The ABC Corporation had a profit of \$3,476 in February. It had a loss of \$4,509 in March. What was its net gain for February and March?

- F. -\$7,985 H. \$1,033
G. -\$1,033 J. \$7,985

CONSTRUCTED RESPONSE

15. A football team must move the ball forward at least 10 yards from its starting point to make a first down. If the team has 2 losses of 2 yards each and a gain of 12 yards, does the team make a first down? Justify your answer.

16. Lionel finished four rounds of a golf tournament. His combined total score after playing all four rounds was -10. His scores on the first three rounds were -4, -2, and -6. What was his score on the last round? Justify your answer.

17. Sheila has to pack 128 baskets of apples. She has packed $\frac{1}{4}$ of the baskets. How many baskets are left for her to pack?

18. A grocery store advertises cherries on sale for \$2 per pound. At a different store Millie paid \$11 for $2\frac{3}{4}$ pounds of cherries. How much more did Millie pay per pound for cherries than if she had bought them on sale? Explain.

19. Herbert's checking account balance was \$233. His account has overdraft protection if he withdraws more than his balance, but the bank charges \$12 for covering the overdraft. Herbert made 4 withdrawals of \$70 each. Does Herbert's account require overdraft protection? Why or why not? What is his final balance?

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SELECTED RESPONSE

1. A mover notes the weights of a table and 4 chairs and records $t + 4c \geq 100$ on his invoice. What is he communicating?

- A. The table and 4 chairs each weigh more than 100 pounds.
- B. The table and 4 chairs weigh at most 100 pounds.
- C. The table and 4 chairs weigh around 100 pounds, give or take a little.
- D. The table and 4 chairs weigh at least 100 pounds.

2. At the end of the year, Juan has \$52.71 more than 4 times his balance at the beginning of the year. If his ending balance is \$172.90, what was his balance at the beginning of the year?

- F. \$30.05
- H. \$95.94
- G. \$56.41
- J. \$120.20

3. Brad bought a skateboard for \$2 less than half its original price. If he paid \$21.50, which skateboard did he buy?

Skateboard	Price (\$)
Go Green	45
Speedster	47
Up and Down	43
With the Flow	41

- A. Go Green
- C. Up and Down
- B. Speedster
- D. With the Flow

4. Ken has \$18 to spend on two models of the solar system and supplies to paint them. The two models cost the same amount. His paint supplies cost \$4.62. Which expression indicates how much he can spend on each model?

- F. $x \leq \$6.69$
- H. $x \leq \$13.38$
- G. $x \geq \$6.69$
- J. $x \geq \$13.38$

5. A fence has a total of 650 planks. Violeta paints n planks each day. Write an algebraic expression for how many days it will take Violeta to finish painting the fence.

- A. $\frac{650}{n}$
- C. $650n$
- B. $\frac{n}{650}$
- D. $650 - n$

6. Tim and Todd are twins. At birth, Todd weighed $1\frac{1}{6}$ pounds more than Tim's weight. If Todd weighed $7\frac{2}{3}$ pounds at birth, how much did Tim weigh at birth?

- F. $4\frac{1}{3}$ pounds
- H. $7\frac{1}{6}$ pounds
- G. $6\frac{1}{2}$ pounds
- J. $8\frac{5}{6}$ pounds

7. The price of mailing a small package is \$0.32 for the first ounce and \$0.21 for each additional ounce. Sandra paid \$1.16 to mail her package. How much did it weigh?

- A. 4 ounces
- C. 6 ounces
- B. 5 ounces
- D. 7 ounces

8. A bench is being centered on a wall. The wall is 2.7 m long and the bench is 1.8 m wide. Which equation can be used to determine how much of the wall should be on each side of the bench?

- F. $2.7 - 1.8x = 2$
- G. $1.8x - 2 = 2.7$
- H. $2x - 1.8 = 2.7$
- J. $2.7 - 2x = 1.8$

9. Solve $5h + 15 - 3h = 32$.

- A. $h = 16$
- C. $h = 8\frac{1}{2}$
- B. $h = 23\frac{1}{2}$
- D. $h = 2\frac{1}{8}$

10. Solve $2(a - 5) - 5 = 3$.

F. $a = 9$

H. $a = -9$

G. $a = 12$

J. $a = -12$

11. Juan needs to take a taxi to get to the movies. The taxi charges \$3.50 for the first mile, and then \$2.75 for each mile after that. If the total charge is \$18.63, then how far was Juan's taxi ride to the movie?

A. 6.5 miles

C. 6.8 miles

B. 5.3 miles

D. 5.5 miles

12. Solve $6(s - 8) \leq -18$

F. $s \leq -5$

H. $s \leq 5$

G. $s \leq -\frac{5}{3}$

J. $s \leq -11$

13. Larry has \$389.00. A DVD player costs \$97.00, and he can purchase used movies for \$11.55 each. What is the greatest number of movies Larry can buy if he also buys a DVD player?

A. at most 26

C. at most 25

B. at most 34

D. at most 43

CONSTRUCTED RESPONSE

14. Henry is putting a new baseboard around his room. He used the formula $P = 2(\ell + w)$ to find the perimeter. The perimeter is $72\frac{1}{2}$ feet. He remembers that the width was $16\frac{1}{2}$ feet. Show two different ways to find the length of the other wall.

15. A baseball stadium has 37,101 seats in the three areas listed in the table.

Type of Seat	Number of Seats
Lower Deck	10,238
Upper Deck	p
Box level	721

Suppose all the box level and lower deck seats during a game are filled. Write and solve an inequality to determine how many people could be sitting in the upper deck.

16. The Eiffel Tower was completed in 1889. Write an equation to find how old the Eiffel Tower is. What operation must you perform to solve the equation?

17. Lacey has \$20 to spend on school supplies. Notebooks cost \$2.50, pens cost \$0.50 and pencils cost \$0.12. Lacey needs 7 notebooks for her classes and also wants to get 4 pens. How many pencils can she buy? Explain.

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SELECTED RESPONSE

- Marcus hikes at a rate of 2 miles per hour. If he hikes for $6\frac{1}{3}$ hours, how many miles will he hike?

A. $18\frac{2}{3}$ miles	C. $12\frac{2}{3}$ miles
B. 14 miles	D. $8\frac{1}{3}$ miles
- Laura paid \$27 for three books. If all of the books cost the same, how much did one book cost?

F. \$24	H. \$81
G. \$9	J. \$0.90
- Martha buys tennis rackets for \$45 dollars. She marks them up 25% before selling them. What is the retail price of the tennis racket?

A. \$11.25	C. \$56.25
B. \$54.00	D. \$112.50
- The manager of a sporting goods store raises the price of a basketball from \$16 to \$18. What is the percent increase?

F. 1.25%	H. 11.1%
G. 2%	J. 12.5%
- If you can type 1080 words in 40 minutes, then how many words per minute can you type?

A. 180 words/min
B. 31 words/min
C. 27 words/min
D. 9 words/min
- Harriet paid \$349.65 for 7 fruit trees. If each of the trees cost the same, what is the cost for one tree?

F. \$58.27	H. \$41.09
G. \$49.95	J. \$49.90
- It took 3.3 hours for Marianne to drive 178.2 miles. What was her average speed for the trip?

A. 54 mi/h
B. 554 mi/h
C. 59.3 mi/h
D. 60 mi/h
- The Jackson family drove 496 miles in 8 hours. Which is the unit rate in fraction form?

F. $\frac{496 \text{ miles}}{1 \text{ hour}}$
G. $\frac{62 \text{ miles}}{1 \text{ hour}}$
H. $\frac{1 \text{ mile}}{62 \text{ hours}}$
J. $\frac{1 \text{ hour}}{496 \text{ miles}}$
- Which of the following ratios are proportional?

A. $\frac{2}{3}, \frac{3}{4}$	C. $\frac{6}{9}, \frac{9}{12}$
B. $\frac{5}{6}, \frac{11}{2}$	D. $\frac{3}{5}, \frac{9}{15}$
- Luisa sells stuffed animals. She sells a stuffed elephant for \$34.90, and the sales tax is 9% of the sale price. About how much is the sales tax on the elephant?

F. \$0.32
G. \$3.15
H. \$4.90
J. \$4.95

11. A factory worker can package 150 games in 15 minutes. How many games can he package per minute?

A. 20
 B. 135
 C. 8.33
 D. 10

12. Match the proportion with its solution.

$$\frac{3}{2} = \frac{t}{18}$$

F. 27
 G. 2
 H. 5
 J. $\frac{1}{3}$

CONSTRUCTED RESPONSE

13. A model is built to a scale of 1 ft:87 ft. If a model airplane is 3 feet long, how many feet long is the actual plane?

14. Camelo puts \$2,200.00 into saving bonds that pay a simple interest rate of 3.4%. How much money will the bonds be worth at the end of 5 years? Show your work.

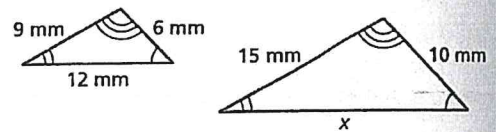
15. Belize is a small country in Central America. The southern portion of the country receives an average of 200 inches of rain per year. The northern portion of the country averages 30% of this total. What is the average yearly rainfall in the northern part of Belize to the nearest inch? Explain.

16. The cooking class used 18 cups of flour to make 8 identical loaves of bread. How many cups of flour were needed for each loaf? Express each answer as a mixed number in simplest form.

17. To make lemonade, 2 cups of lemon juice are mixed with 7 cups of water. Describe and correct the error in the proportion used to find the number of cups of lemon juice j to mix with 28 cups of water.

$$\frac{2}{7} = \frac{28}{j}$$

18. Find the unknown length given that the triangles are similar. Show your work.



19. The following measurements were taken of a tree.

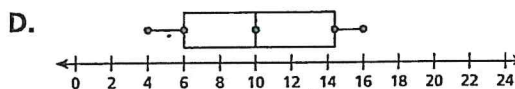
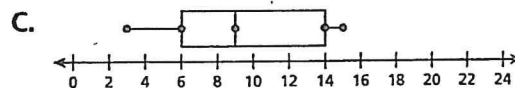
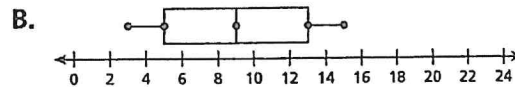
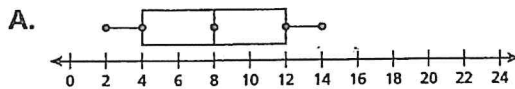
Age	5 months	8 months	13 months	15 months
Height	1.4 feet	2.24 feet	3.64 feet	4.2 feet

Do the age and height show direct variation? If so, write the equation of variation. If not, explain why not.

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SELECTED RESPONSE

1. At a health club, five members record the number of laps around the track that each member jogs. The results are 15, 9, 5, 3, 13. Use the data to make a box-and-whisker plot.



2. You want to know the favorite sport of middle school students. Which group would provide a random sample?
- F. the girls' soccer team
 - G. the band
 - H. every fifth person who leaves the school building at the end of the school day
 - J. every tenth person who enters the stadium before a football game
3. How can you make a random sample more accurately reflect the population it represents?
- A. carefully select the data pieces
 - B. increase the number of pieces of random data
 - C. use a graphing calculator to provide random integers
 - D. survey a biased group

4. A department store receives a shipment of 1,000 glasses. Out of a random sample of 10 glasses, 2 are broken. How many glasses would you expect to be broken in the entire shipment?

F. 2 H. 200
G. 50 J. 250

5. A random sample of a shipment of furniture shows that 2 out of 50 boxes do not contain all of the correct parts. Which proportion could help you find the number of boxes that will not contain the correct parts out of a shipment of 500?

A. $\frac{2}{50} = \frac{500}{x}$ C. $\frac{50}{500} = \frac{x}{2}$
B. $\frac{x}{50} = \frac{500}{2}$ D. $\frac{2}{50} = \frac{x}{500}$

6. A restaurant manager predicts that out of the 200 people that will come to the restaurant in one day, 40 people will order dessert. He based this on a random sample of people he polled yesterday. What ratio could his prediction be based on?

F. $\frac{1}{5}$ H. $\frac{10}{25}$
G. $\frac{7}{10}$ J. $\frac{2}{50}$

7. A teacher randomly reads 10 one-page reports written by her students. She finds that 3 of the reports have misspellings. How many reports would she expect to have misspellings if she reads 150 reports?

- A. 10
- B. 45
- C. 50
- D. 100

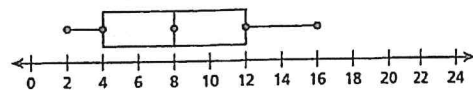
8. A factory produces 42,000 computer monitors per day. The manager of the factory claims that fewer than 660 defective computer monitors are produced each day. In a random sample of 240 computer monitors, there are 2 defective computer monitors. Determine whether the manager's claim is likely to be true. Explain.

- F. Yes, the manager's claim is likely to be true. Based on the data, you can predict that there are 350 defective computer monitors produced per day.
- G. No, the manager's claim is not likely to be true. Based on the data, you can predict that there are 670 defective computer monitors produced per day.
- H. Yes, the manager's claim is likely to be true. Based on the data, you can predict that there are 127 defective computer monitors produced per day.
- J. No, the manager's claim is not likely to be true. Based on the data, you can predict that there are 840 defective computer monitors produced per day.

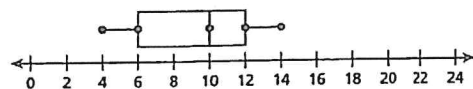
CONSTRUCTED RESPONSE

9. The box-and-whisker plots show the distribution of two data sets. Which data set has a greater median? Explain.

Data Set 1



Data Set 2



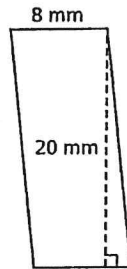
10. Explain why surveying 100 different people from the phone book might not be a random sample.

11. A factory produces 500,000 nails per day. The manager of the factory estimates that there are less than 1,500 misshapen nails made per day. A random survey of 500 nails finds 4 misshapen ones. Is the manager correct in his estimate? Explain.

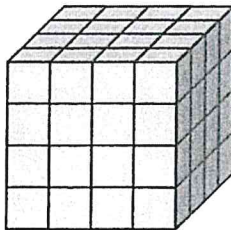
Name _____ Class _____ Date _____

SELECTED RESPONSE

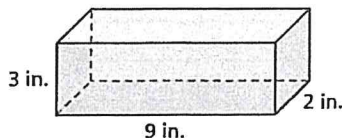
1. Flora is drawing a pattern for a mosaic. What is the area of the pattern?



- A. 28 square millimeters
 - B. 140 square millimeters
 - C. 160 square millimeters
 - D. 200 square millimeters
2. Ned forms a larger cube from centimeter cubes. What is the surface area of the larger cube?

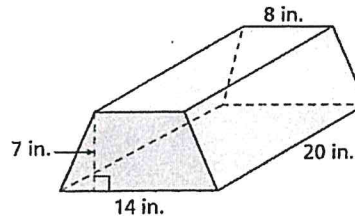


- F. 90 square centimeters
 - G. 96 square centimeters
 - H. 108 square centimeters
 - J. 216 square centimeters
3. Maria is wrapping a present for her best friend. How much wrapping paper will she use, not counting overlap?

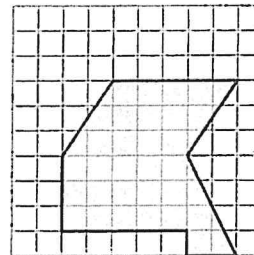


- A. 51 square inches
- B. 54 square inches
- C. 84 square inches
- D. 102 square inches

4. Roberto purchases a small toy chest for his children. What is the volume of the toy chest?

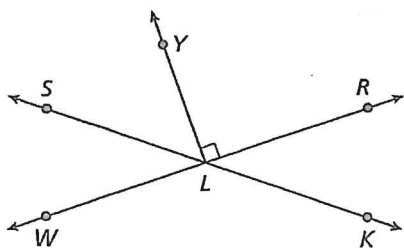


- F. 1,120 cubic inches
 - G. 1,540 cubic inches
 - H. 1,960 cubic inches
 - J. 3,080 cubic inches
5. Carol wants to tile her utility room. Each tile is 1 square foot. She draws the shape of her room on a grid. Each square unit on the grid represents 1 square foot. How many tiles will she need?



- A. 30
 - B. 34
 - C. 38
 - D. 42
6. A circular mirror has a radius of 6 inches. What is the circumference of the mirror?
- F. 3π inches
 - G. 6π inches
 - H. 12π inches
 - J. 36π inches

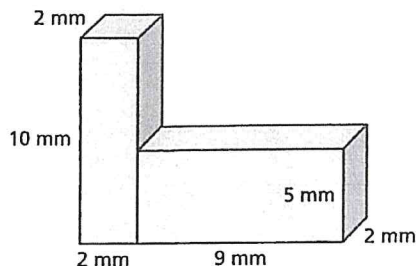
Use the figure for 7–8.



7. Which pair of angles are complementary angles?
- A. $\angle YLS$ and $\angle RLK$
 B. $\angle YLR$ and $\angle YLS$
 C. $\angle SLW$ and $\angle RLK$
 D. $\angle WLK$ and $\angle RLK$
8. The measure of $\angle RLK$ is 38° . What is the measure of $\angle SLY$?
- F. 52° H. 142°
 G. 62° J. 218°
9. Angle D is a vertical angle to $\angle F$. The measure of $\angle D$ is 53° . What is the measure of $\angle F$?
- A. 3° C. 43°
 B. 37° D. 53°
10. If two angles are supplementary, what is the sum of their measures?
- F. 30° H. 180°
 G. 90° J. 360°

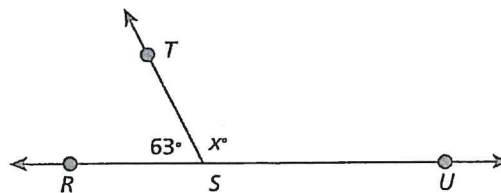
CONSTRUCTED RESPONSE

11. Patrick made a plastic model of his office building. He plans to paint the entire model. Use the model to find the surface area that Patrick will paint. Explain how you found this area.



12. Mary is filling a jar shaped like a square prism with a bag of confetti that is labeled as containing 100 cubic inches. The base of her prism is 3 inches by 3 inches and the height is 10 inches. Will all the confetti fit in the jar? Explain.

13. Write and solve an equation to find the measure of $\angle TSU$.



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SELECTED RESPONSE

1. You roll a standard number cube once. Which of the following gives all of the outcomes of the sample space for this experiment?

- A. 1, 2, 3
- B. A, B, C, D
- C. 1, 2, 3, 4, 5, 6
- D. 2, 4, 6, 8, 10

A hat contains 5 red balls, 8 green balls, and 9 yellow balls. Rina chooses one ball at random from the hat. Use this information for 2-5.

2. What is the probability that Rina chooses a green ball?

- | | |
|-------------------|-------------------|
| F. $\frac{1}{11}$ | H. $\frac{9}{22}$ |
| G. $\frac{4}{11}$ | J. $\frac{5}{11}$ |

3. What is the probability that Rina chooses a red ball or a green ball?

- | | |
|--------------------|--------------------|
| A. $\frac{13}{22}$ | C. $\frac{17}{22}$ |
| B. $\frac{7}{11}$ | D. $\frac{40}{22}$ |

4. What is the probability that Rina does not choose a red ball?

- | | |
|-------------------|--------------------|
| F. $\frac{5}{22}$ | H. $\frac{13}{22}$ |
| G. $\frac{4}{11}$ | J. $\frac{17}{22}$ |

5. What is the probability that Rina chooses a yellow ball?

- | | |
|-------------------|--------------------|
| A. $\frac{7}{22}$ | C. $\frac{13}{22}$ |
| B. $\frac{9}{22}$ | D. $\frac{17}{22}$ |

6. A standard number cube is rolled once. What is the probability that a number less than 3 is rolled?

- | | |
|------------------|------------------|
| F. $\frac{1}{6}$ | H. $\frac{1}{2}$ |
| G. $\frac{1}{3}$ | J. $\frac{2}{3}$ |

7. A spinner has white, green, violet, indigo, and blue sections. Which of the following is the complement of the event that the spinner lands on violet?

- A. The spinner lands on green.
- B. The spinner lands on white, green, or indigo.
- C. The spinner lands on white, green, indigo, or blue.
- D. The spinner does not land on blue.

8. The probability that a new car at a local dealership has a bad headlight is 0.003. Which statement best describes the probability of this event?

- F. It is likely that a new car at a local dealership has a bad headlight.
- G. It is unlikely that a new car at a local dealership has a bad headlight.
- H. It is neither unlikely nor likely that a new car at a local dealership has a bad headlight.
- J. It is impossible that a new car at a local dealership has a bad headlight.

9. Which event is impossible?

- A. A bowl has 10 red marbles and 12 green marbles. You choose a red marble from the bowl.
- B. A bag has pieces of paper numbered from 1 to 100. You choose a number divisible by 3.
- C. A spinner has sections lettered A through H. The spinner lands on the 10th letter of the alphabet.
- D. You roll two standard number cubes and the sum of the numbers rolled is 12.

10. At A-1 Truck Dealership, a customer can order a red, turquoise, or green truck. The truck can have leather or cloth seats. A customer can also choose a black, tan, or grey interior color. From how many possible trucks can a customer choose?

F. 8 H. 27
G. 18 J. 36

CONSTRUCTED RESPONSE

11. Yvonne draws a marble from a basket. She records the color and puts the marble back into the basket. The experiment is repeated several times. She records the frequency of each color in the table.

Color	Frequency
Red	7
Yellow	9
Green	14
Purple	10

What is the experimental probability of choosing a green marble?

12. A hockey team has 12 girls and 9 boys. Each week the coach chooses one player at random to play goalie for the next game. What is the probability that the coach chooses a girl to be the goalie for the next game?

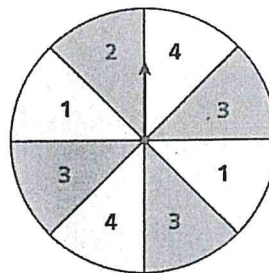
The probability of choosing a 6 at random from a standard deck of playing cards is $\frac{1}{13}$. Use this information for 13 and 14.

13. What is the complement of the event of choosing a 6?

14. What is the probability of the complement of the event of choosing a 6?

15. You roll a standard number cube 1,000 times. Predict the number of times you will roll a 2 or a 5.

Use the spinner for 16 and 17. Tell whether each student is correct and explain.



16. Ashley said, "There are four numbers on this spinner. One of these numbers is 2. Therefore, the probability that this spinner lands on 2 is $\frac{1}{4}$."

17. Suzanne said, "There are two colors on this spinner. One of these colors is blue. Therefore, the probability that this spinner lands on blue is $\frac{1}{2}$."
