

Name _____

Date _____

Chapter 1 Test B

Find the value of the expression. Use estimation to check your answer.

Answers

1. $4058 - 2396$ 2. $7791 + 639$
3. $2208 \div 96$ 4. 182×63

1.
2.
3.

Determine the operation you would use to solve the problem. Do not answer the question.

4.

5. A runner finishes a race in 67 seconds, an improvement of 5 seconds compared to his last finishing time. What was the runner's last finishing time?

5.
6.

6. A six-story building is 72 feet tall. What is the height of each story?

7.
8.

Find the value of the power.

9.

7. 13^2 8. 5^4

10.

Determine whether the number is a perfect square.

11.

9. 75 10. 225

12.

Evaluate the expression.

13.

11. $2 \times 4 + 3^2$ 12. $2^4 - 3(7 - 5) + 7$
13. $18 - 2(3 - 2)$ 14. $64 \div 16 + 5 \times 3$

14.

15.

List the factor pairs of the number.

16.

15. 21 16. 45

17.

Write the prime factorization of the number.

18.

17. 51 18. 120

19.

Find the GCF of the numbers.

20.

19. 18, 78 20. 9, 42, 57

21.

Find the LCM of the numbers.

22.

21. 9, 12 22. 3, 16, 20

23.

Add or subtract. Write the answer in simplest form.

24.

23. $\frac{7}{8} + \frac{3}{10}$ 24. $3\frac{2}{9} - 1\frac{5}{7}$

Chapter

1

Test B (continued)

25. A store has 15 boxes of apples. Each box contains 98 apples. **Answers**

a. How many apples does the store have? 25. a.

b. What is the maximum number of bags of apples that can be sold if 8 apples are put in each bag? 26. b.

26. On Monday, five students make up a rumor. On each of the next two days, every student that knows the rumor tells five other students. 27.

Write a power to represent the number of students that know the rumor at the end of day on Wednesday. Then find the number of students. 28.

27. The point system below is used to rank teams in a soccer league. 29.

A team's record is 16 wins, 6 ties, and 9 losses. How many points does the team have? 30.

Result	Points
Win	3
Tie	1
Loss	0

28. You have 64 inches of blue fabric and 96 inches of green fabric. You want to cut the fabric into pieces of equal length with no leftovers. What is the greatest length of the pieces that you can make?

29. Two runners begin running laps around a one-mile track at the same time. The first runner completes a mile every 6 minutes and the second runner completes a mile every 8 minutes. After how long will the first runner lap the second runner?

30. A town received $2\frac{3}{4}$ inches of rain one day and $5\frac{2}{5}$ inches the next day. How many inches of rain fell in the town over the two days?

Chapter 2

Test A

Multiply. Write the answer in simplest form.

1. $3 \times \frac{8}{9}$ 2. $\frac{4}{11} \times \frac{3}{8}$

3. $\frac{15}{24} \times 4\frac{2}{3}$ 4. $1\frac{4}{5} \times 2\frac{1}{3}$

Divide. Write the answer in simplest form.

5. $\frac{5}{8} \div 10$ 6. $\frac{7}{9} \div \frac{5}{6}$

7. $\frac{3}{16} \div 2\frac{3}{4}$ 8. $3\frac{3}{16} \div 2\frac{5}{6}$

Evaluate the expression. Write the answer in simplest form.

9. $3 + 7\frac{1}{2} \div 1\frac{3}{10}$ 10. $\frac{2}{3} \times 1\frac{1}{7} \times \frac{3}{8}$

Add or subtract.

11. $5.78 + 3.29$ 12. $18.6 - 13.34$

Multiply. Use estimation to check your answer.

13. 4×1.2 14. 7.5×18

15. 0.34×0.83 16. 0.04×0.6

Divide. Use estimation to check your answer.

17. $26.4 \div 8$ 18. $12.06 \div 18$

19. $32.96 \div 0.8$ 20. $11.76 \div 0.0014$

Evaluate the expression.

21. $16.9 - 1.2 \times 5.4$ 22. $35.7 \div (1.71 + 3.54)$

23. A professor wants to divide the remaining $\frac{3}{4}$ of the semester evenly into six different units.

a. What fraction of the semester should be spent on each unit?

b. The professor drops one unit. What fraction of the semester should be spent on each unit?

Answers

1. .
2. .
3. .
4. .
5. .
6. .
7. .
8. .
9. .
10. .
11. .
12. .
13. .
14. .
15. .
16. .
17. .
18. .
19. .
20. .
21. .
22. .
23. a. .
- b. .

**Chapter
2**
Test A (continued)

24. Find the area of the credit card.


Answers

24.

25.

26.

27.

28.

25. A recipe makes $6\frac{2}{3}$ cups. The serving size is $\frac{5}{6}$ cup. How many servings does the recipe make?

26. The individual times of four members of a 4×400 -meter relay team are shown below. Find the team's total race time in seconds.

Runner	Time
1	55.2
2	53.9
3	54.1
4	51.7

27. The average rainfall in Annette, Alaska, in September is 0.31 inch per day. How much rain falls over the course of an average September? (September has 30 days.)

28. A market sells a six-pound bag of potatoes for \$6.27 and a 7.5-pound bag of potatoes for \$7.65. Which bag of potatoes is a better buy?

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Chapter 3 Test A

Evaluate the expression when $x = 4$ and $y = 1$.

1. $5y$ 2. $12 - x$

Answers

1. _____

Write the phrase as an expression.

3. 10 multiplied by 7 4. the sum of 12 and a number h

2. _____

3. _____

Write the phrase as an expression. Then evaluate the expression when $x = 3$ and $y = 6$.

4. _____

5. the product of 8 and a number x

5. _____

6. the quotient of a number y and 2

6. _____

Tell which property the statement illustrates.

7. $7 \cdot m = m \cdot 7$ 8. $0 + z = z$

7. _____

9. $3(x - 3) = 3x - 9$

8. _____

10. $(c + 1.4) + 0.5 = c + (1.4 + 0.5)$

9. _____

Simplify the expression. Explain each step.

11. $2 + (g + 5)$ 12. $7(4p)$

10. _____

11. _____

See left.

12. _____

See left.

Use the Distributive Property to simplify the expression.

13. $4(c - 2)$ 14. $8(x - 1)$

13. _____

14. _____

Simplify the expression.

15. $2(3 + d - 1)$ 16. $3(w + 1) - 1$

15. _____

16. _____

17. $3.4n + 9.6 - 2.1n$ 18. $5(k + 4) - 2k$

17. _____

18. _____

Factor the expression using the GCF.

19. $4 + 22$ 20. $54 - 30$

19. _____

20. _____

21. $12y - 8$ 22. $9b + 45$

21. _____

Name _____

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**Chapter
3**

Test A (continued)

23. Complete the table.

p	1	2	3	4	5
$3p - 1$					

24. The running time (in minutes) of a TV episode is $30 - 0.5c$, where c is the number of commercials aired during the episode. What is the running time of an episode with 15 commercials?

25. To find the sales tax on an item, divide the price of the item by 20.

a. Write an algebraic expression to find the sales tax on an item that costs d dollars.

b. Find the sales tax on a television that costs \$800.

26. A server at a restaurant works 5 hours on a weekday and 8 hours on a weekend day.

a. Write an expression for the total hours the server works on x weekdays and y weekend days.

b. Use the expression to find the number of hours the server works on 4 weekdays and 2 weekend days.

27. The sides of a square each have a length of $11x$ inches. Write an expression for the perimeter of the square (in inches).

28. The cost of a DVD (in dollars) can be represented by the expression $18 - d$, where d is the discount amount. Use the Distributive Property to write and simplify an expression for the cost of 3 DVDs.

Answers

23. _____
See left.

24. _____

25. a. _____

b. _____

26. a. _____

b. _____

27. _____

28. _____

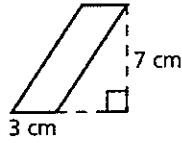
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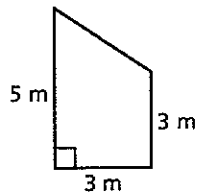
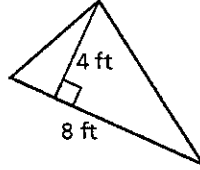
**Chapter
4**

Test A

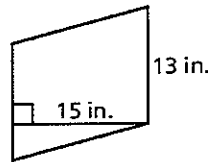
Find the area of the parallelogram, triangle, or trapezoid.



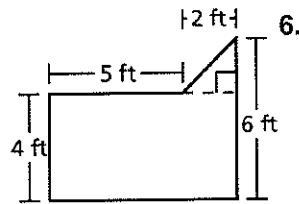
2.



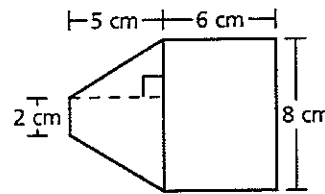
4.



Find the area of the figure.



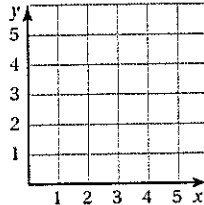
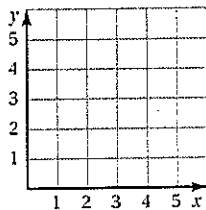
6.



Draw the polygon with the given vertices in a coordinate plane.

7. $A(6, 4), B(4, 5), C(3, 1)$
 $G(2, 3)$

8. $D(1, 5), E(4, 5), F(5, 3)$

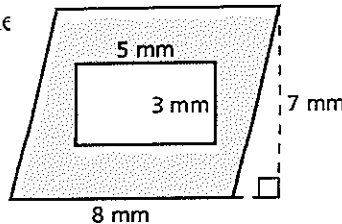


Find the perimeter and the area of the polygon with the given vertices.

9. $H(3, 2), I(5, 2), J(5, 7), K(3, 7)$

10. $P(1, 2), Q(1, 6), R(8, 6), S(8, 2)$

11. Find the area of the shade



Answers

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

See left.

8. _____

See left.

9. _____

10. _____

11. _____

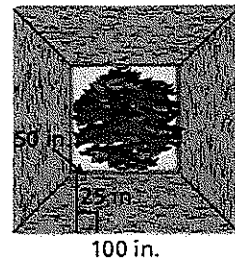
Chapter 4 **Test A** (continued)

12. The base of a parallelogram is 13 yards and the height is 10 yards. What is the area?

13. A trapezoidal window is 8 feet tall and has base lengths of 1 foot and 7 feet. What is the area of the window?

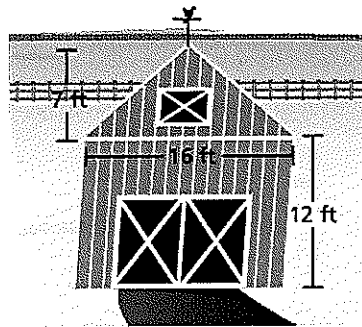
14. The base of a triangle is 8 centimeters. What is the area of the triangle?

15. A bench around the base of a tree is in the shape of a square and is made up of four trapezoids of the same size.



- a. What is the perimeter around the outside of the bench?
- b. What is the area of one trapezoid?
- c. What is the area of the entire bench?

16. The front of a partially collapsed barn is shown below. Find the area of the front of the barn.



17. On a state map, the vertices of the boundary of a county are $A(10, 30)$, $B(65, 30)$, $C(65, 60)$, and $D(10, 60)$. The coordinates are measured in miles. What is the area of the county?

18. The vertices of a swimming pool are $E(5, 5)$, $F(5, 20)$, $G(35, 20)$, and $H(35, 5)$. The endpoints of a line that divides the pool into two sections are $J(15, 5)$ and $K(15, 20)$. The coordinates are measured in meters. What is the area of each section?

Answers

- 12. _____
- 13. _____
- 14. _____
- 15. a. _____
b. _____
c. _____
- 16. _____
- 17. _____
- 18. _____

Chapter 5 Test B

In Exercises 1–3, write the ratio. Then explain what the ratio means.

Answers

1. onions to carrots

2. onions to peppers

3. onions to vegetable



1.

2.

Find the missing values in the ratio table. Then write the equivalent ratios.

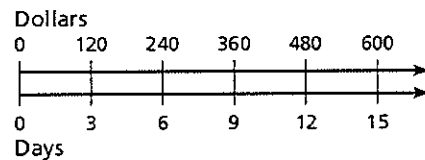
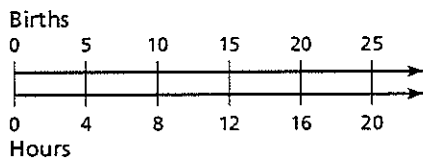
3.

⁴ Dogs	5	15	⁵ .
Cats	3		15

Players	12		84
Coache	1	4	

4. See left.

Write a rate that represents the situation.



5. See left.

Write a unit rate for the situation.

8. \$4.50 for 6 energy drinks

9. 320 yards in 8 minutes

6.

7.

Determine which vehicle gets better gas mileage.

8.

¹⁰ Truck	A	B
Distance (miles)	90	120
Gallons used	4	5

Motorcycle	A	B
Distance (miles)	315	360
Gallons used	6	8

9.

10.

11.

Write the fraction or mixed number as a percent.

12.

12. $1\frac{5}{8}$ 13. $\frac{6}{25}$

13.

Find the percent of the number.

14. _____

14. 12% of 30 15. 158% of 200

15.

Find the whole. Explain your method.

16. See left.

16. 45% of what number is 27? 17. 120% of what number is 18?

17. See left.

Chapter 5

Test B (continued)

Complete the statement. Round to the nearest hundredth, if necessary.

18. 145 lb \approx _____ kg 19. 18 cm \approx _____ in.

20. The ratio of white flour to whole wheat flour in a bread recipe is 2 : 3. The recipe uses 10 cups of flour. How much of each type of flour is needed?

21. You read 16 pages of an assignment in 20 minutes.

a. At this rate, how many pages can you read in 45 minutes?

b. Your friend reads 25 pages in 30 minutes. Who reads at a faster average rate?

In Exercises 22–24, use the incomplete table that shows the number of three-point shots attempted and made by two members of a basketball team last season.

Player	Parker	Jones
Three-point shots attempted	24	?
Three-point shots made	6	6
Three-point shot percentage	?	40%

22. Which player made a greater percent of his three-point shots?

23. How many shots did Jones attempt?

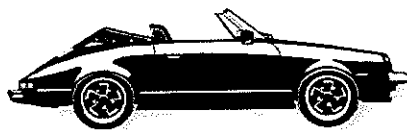
24. Another player attempted 125% of the number of three-point shots Parker attempted. This player made 30% of his three-point shots. How many three-point shots did this player make?

25. You answer 95% of the questions correctly on a 40-question test.

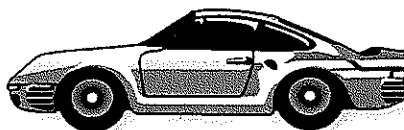
How many questions do you answer *incorrectly*?

26. Determine which car is traveling faster. Explain your reasoning.

Speed: 110 feet per second



Speed: 60 miles per hour



Answers

18. See left.

19. See left.

20. _____

21. a. _____

b. _____

22. _____

23. _____

24. _____

25. _____

26. _____

Chapter 6 Test B

Write a positive or negative integer that represents the situation.

1. A plane flies at an altitude of 5000 feet.
2. A swimmer is 4 feet below the surface of the water.

Answers

1. _____
2. _____

Graph the integer and its opposite.

3. 1 4. -4



3. See left.
4. See left.

Order the integers from least to greatest.

5. -8, 2, -1, 0, 7 6. 5, 11, -1, -12, -5

5. _____
6. _____
7. See left.

Graph the number and its opposite.

7. $\frac{1}{4}$ 8. -2.75



8. See left.
9. See left.

Complete the statement using < or >.

9. $-1\frac{1}{3}$ _____ $-1\frac{2}{5}$ 10. $-3\frac{1}{3}$ _____ $-3\frac{1}{6}$

10. See left.
11. _____
12. _____

Find the absolute value.

11. $|-17|$ 12. $|31|$ 13. $|0|$

13. _____
14. See left.

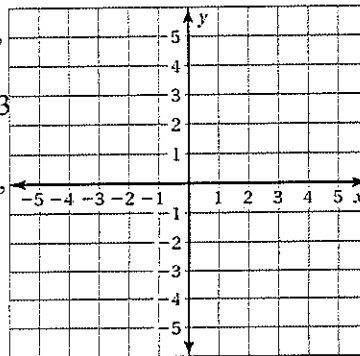
Complete the statement using <, >, or =.

14. -13 _____ $|-13|$ 15. 0 _____ $|-5|$ 16. $|-7|$ _____ left.

15. See left.
16. See left.

17. Plot the ordered pair.

- a. $A(2, -4)$ b. $B(-3, 4)$
- c. $C(0, -1)$ d. $D(5, 3)$
- e. $E(-4, 0)$ f. $F(-5, -1)$



17. a. See left.

b. See left.

c. See left.

d. See left.

e. See left.

18. How many of the points in Exercise 17 are in Quadrant III?

Chapter
6
Test B (continued)

 Reflect the point in (a) the x -axis and (b) the y -axis.

Answers

19. $(-4, 2)$ 20. $(-5, -3)$

19. a. _____

 Reflect the point in the x -axis followed by the y -axis.

b. _____

21. $(1, -3)$ 22. $(6, 4)$

20. a. _____

 23. A number is greater than -4 and less than 9 . What is the least possible integer value of this number? What is the greatest possible integer value of this number?

b. _____

24. The table shows the change in a stock price over a five-day period.

22. _____

Day	1	2	3	4	5
Change (dollars)	-1.23	-0.42	4.72	-2.95	1.23

23. _____

a. On what day did the stock price increase the most?

b. _____

b. On what day did the stock price decrease the most?

c. _____

c. On what day did the stock price change the most?

d. _____

d. On what two days did the stock price change by the same dollar amount?

25. Saturday you spent \$10.75 at the pharmacy. You earned \$5.50 for yard work. Using a negative number for money spent and a positive number for money earned, represent each value as a positive or negative number. Which number is closer to 0 on a number line?

b. _____

 26. The vertices of rectangle $WXYZ$ are $W(-4, -3)$, $X(-4, 1)$, and $Y(2, 1)$.

c. _____

a. What are the coordinates of the fourth vertex?

b. Find the perimeter of the rectangle.

c. Find the area of the rectangle.

Chapter 7

Test B

Write the word sentence as an equation.

1. The sum of a number a and 17 is 21.
2. 14 is 7 times a number c .
3. A number b divided by 6 equals 15.
4. 13 is 3 less than a number z .
5. The area of a rectangular banner is 120 square feet. The banner is 40 feet long. Write an equation you can use to find the height h of the banner.

Answers

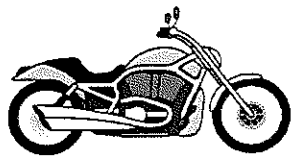
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____

Solve the equation. Check your solution.


- | | | |
|-----------------|------------------------|--------------------------|
| 6. $x - 7 = 12$ | 7. $14 + y = 20$ | 8. $p - 12 = 38$ |
| 9. $12r = 300$ | 10. $2.7 \cdot b = 54$ | 11. $27 = \frac{a}{0.8}$ |

Tell whether the ordered pair is a solution of the equation.

12. $y = 12x$; (3, 32)
13. $y = 4x - 3$; (3, 9)
14. Write and graph an equation in two variables that shows the relationship between time and distance.



Moves 10 miles in 8 minutes.



left.

See

15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

Write the word sentence as an inequality.

15. A number n is no more than 100.
16. 0 is greater than a number x .
17. The difference of number p and 2 is at least 5.
18. A number b divided by 3 is less than 3.

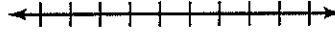
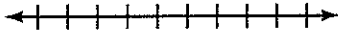
Tell whether the given value is a solution of the inequality.

19. $2z \leq 15$; $z = 11$
20. $\frac{k}{3} > 7$; $k = 21$

Chapter 7 **Test B** (continued)

Solve the inequality. Graph the solution.

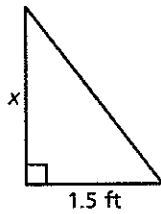
21. $q + 5 \leq 9$ 22. $80 > 20b$



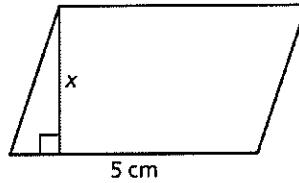
23. One third of the viewers at a movie opening rated the movie as Good or Very Good. Thirty-five people rated it Good and twenty people rated it Very Good. Write and solve an equation to find the number of people p in the audience.

Solve for x . Check your answer.

24. Area = 1.5 ft^2

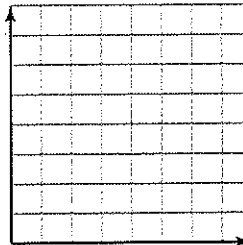


25. Area = 15 cm^2



26. It costs \$60 to rent a car for a day. Each gallon of gas you use costs an additional \$4.

- a. Write and graph an equation in two variables that represents the total cost of renting a car for a day.
- b. Identify the independent and dependent variables.
- c. How much will it cost you to rent a car and use 6 gallons of gas?



27. A freight elevator can hold 3000 pounds. Write and solve an inequality to find how many 150-pound boxes could be safely loaded in the elevator.

28. more receive free shipping. You are buying the T-shirt on the right.

Orders



a. Write and solve an inequality to represent the additional amount of money you must spend to receive free shipping.

b. You have a total of \$40. Can you buy a second shirt for

Answers

21. _____
See left.

22. _____
See left.

23. _____

24. _____

25. _____

26. a. _____

See left.

b. _____

c. _____

27. _____

28. a. _____

b. _____

\$17.50 and receive free shipping? Explain your reasoning.

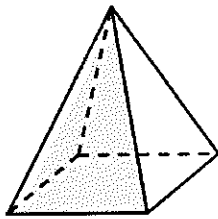
Name

Date

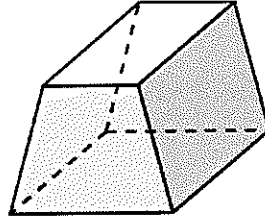
**Chapter
8**

Test A

Find the number of faces, edges, and vertices of the solid.



2.



Answers

1.

2.

Draw the solid.

3. triangular pyramid 4. rectangular prism

3. See left.

4. See left.

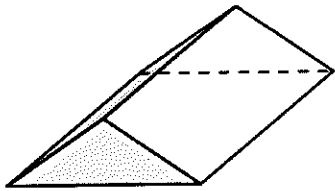
5. See left.

6.

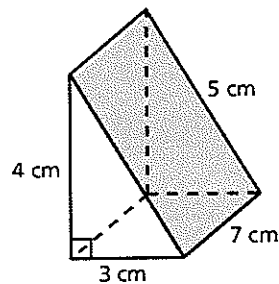
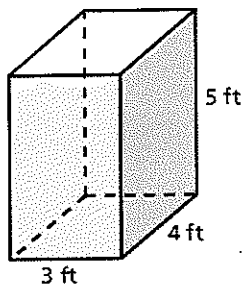
7.

8.

5. Draw the front, side, and top views of the solid.



Find the surface area of the prism.

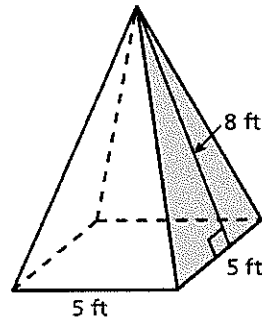
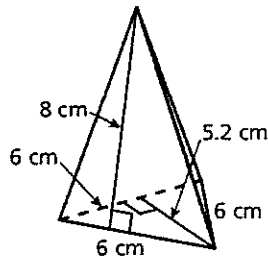


8. A piece for a board game is shaped like a triangular prism. The piece is 18 millimeters long. The base of the piece is an equilateral triangle with 10-millimeter sides and a height of 9 millimeters. Find the surface area of the game piece.

Chapter 8

Test A (continued)

Find the surface area of the pyramid. The side lengths of the base are equal.



Answers

9. _____

10. .

11. .

12. .

13. .

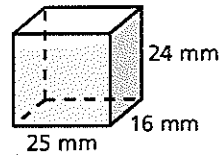
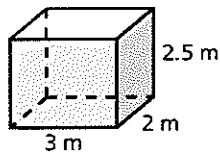
14. .

15. .

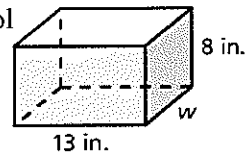
16. .

17. .

Find the volume of the prism.



13. The rectangular prism has a volume of 936 cubic inches. Write and solve an equation to find the missing dimension of the prism.



14. A file folder box is in the shape of a rectangular prism with a length of 12 inches, a width of 9 inches, and a height of 10 inches. It is open at the top. Find the surface area of the file folder box.

15. A playhouse is in the shape of a square pyramid with a side length of 6 feet and a slant height of 12 feet. The wood used to build the walls of the playhouse costs \$3 per square foot. What is the cost of the wood for the walls of the playhouse?

16. To install the right size heating and cooling system, you must know how many cubic feet an office building contains. The building is 120 feet wide, 20 feet high, and 48 feet long. Find the volume.

17. A raised gardening bed contains 32 cubic feet of dirt. The bed is 6 feet wide and 8 feet long. How deep is the dirt?

Chapter 9

Determine whether the question is a statistical question. Explain.

Test B

1. In what year did the United States enter World War II?

2. In what year were students at an elementary school born?

Answers

1. _____

2. _____

3. See left.

Display the data in a dot plot. Identify any clusters, peaks, or gaps in the data.

3.		Kilometers			4.
14	12	9	12	13	
14	8	13	14	12	
12	14	12	8	9	

Students			
31	32	33	34
30	31	35	34
30	34	30	35

4. See left.

Find the mean, median, and mode(s) of the data.

5. 18, 21, 22, 18, 19 6. 0.4, 0.6, 0.6, 0.9, 0.4, 0.5, 0.8

5. _____

6. _____

Find the mean, median, and mode(s) of the data. Choose the measure that best represents the data. Explain your reasoning.

7. 74, 67, 80, 82, 69, 84, 81, 63 8. 8, 14, 10, 12, 8, 32

7. _____

9. The data are the top speeds (in miles per hour) of the ten fastest street-legal cars in the world.

8. _____

201, 202, 205, 205, 205, 206, 208, 211, 217, 268

9. a. _____

b. _____

a. Find the mean, median, mode(s) of the data.

c. _____

b. Choose the measure of center that best represents the data. Explain your reasoning.

c. Find and interpret the range, interquartile range, and mean absolute deviation of the data.

d. _____

d. Use the interquartile range to identify any outliers in the data set.

Chapter 9

Find the median, first quartile, third quartile, and interquartile range of the data.
Test B (continued)

10. 44, 70, 50, 65, 43, 58, 67, 74 11. 4, 18, 15, 10, 19, 4, 9

Answers

Find and interpret the mean absolute deviation of the data. Round your answer to the nearest tenth, if necessary.

10. _____

12. **Gas Tank Size (Gallons)** 13.

32	24	14	30
20	17	19	16

Price of Laptop Computers (dollars)

560	440	350
500	270	700

11. _____

12. _____

14. The data are the distances (in miles) between your school and the six other schools your team has played this season in intramural sports.

13. _____

8, 9, 5, 11, 7, 8

- a. Find the mean of the data.
- b. Friday they will play at the middle school in the neighboring town, which is only 1 mile away. Will the mean distance between schools increase or decrease after the new school is included? Explain. Then find the new mean.

14. a. _____

b. _____

15. a. _____

15. The data sets show the ages of employees in two different departments of a business.

Accounting: 36, 61, 47, 29, 42, 54, 32

Programming: 49, 53, 36, 31, 25, 28

b. _____

- a. Find the mean, median, range, and interquartile range of the ages for each department. Compare the results.
- b. The 54-year-old employee from the accounting department moves to the programming department. How does this affect the measures in part (a)? Explain.

16. a. _____

b. _____

16. The data are prices (in dollars) of sports jackets.

28, 47, 72, 30, 95, 55, 68

- a. Find the measures of center and the measures of variation for the data.
- b. A \$165 sports jacket is added to the data set. Is 165 an outlier?

How does adding this value to the data set affect the measures of center and variation? Explain.

Chapter 10

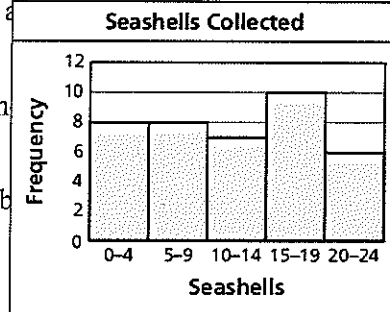
In Exercises 13–16, use the histogram that shows the number of seashells collected by children at a beach party.
Test B (continued)

13. How many children were at the party?

14. Which interval contains the fewest data values?

15. Which interval contains about 18% of the data values?

16. Describe the shape of the distribution.



Answers

13. _____

14. _____

15. _____

16. _____

17. a. See left.

b. _____

c. _____

d. _____

17. Use the following data that show the point spreads on 12 football games for a season.

- 1, 3, 14, 9, 7, 3, 6, 27, 3, 13, 8, 17

a. Make a box-and-whisker plot for the data.

18. a. _____

b. What percent of the point spreads are at least 3 but no more than 27?

b. _____

c. Find the range and interquartile range.

c. _____

d. Identify the shape of the distribution. Explain.

18. The double box-and-whisker plot represents the exam scores of students in a class for two different exams.

a. Identify the shape of each distribution.

b. Which exam's scores are more spread out? Explain.

c. Which exam was more difficult? Explain.

