Cumulative Review

Chapter 1–7

1. If the temperature drops from 28.8°F to −10.5°F, what is the change in temperature?
   A. −39.3°F
   B. −18.3°F
   C. 18.3°F
   D. 39.3°F

2. Simplify 3(6g + 2) − 5g.
   F. 2g + 6
   G. 13g + 6
   H. 2g + 2
   J. 13g + 2

3. What is 76% of 124?
   A. 94.24
   B. 163.16
   C. 9,424
   D. 16,316

4. To serve 12 people, 96 pieces of fruit are needed. How many pieces of fruit are needed to serve 22 people?
   F. 43
   G. 53
   H. 80
   J. 176

5. The diameter of a penny is 0.75 in. What is the circumference of a penny to the nearest tenth?
   A. 0.45 in.
   B. 1.2 in.
   C. 1.8 in.
   D. 2.4 in.

6. A triangle has a height of 12 m and a base of 22 m. Find the triangle’s area in square feet.
   F. 33 m²
   G. 66 m²
   H. 132 m²
   J. 264 m²

7. In the school store, pens cost $1.29 and pencils cost $0.99. Which equation can be used to find d, the total cost in dollars of 4 pens?
   A. 4 = 0.99d
   B. 4 = 1.29d
   C. d = 0.99(4)
   D. d = 1.29(4)

8. An angle measures 49°. How many degrees is the supplement of this angle?
   F. 41°
   G. 51°
   H. 131°
   J. 141°

9. What is \( \frac{5}{8} \) as a decimal?
   A. 0.58
   B. 0.625
   C. 0.75
   D. 0.80

10. Which numbers are all solutions of the inequality \(-6x \leq 18\)?
    F. −8, −12, −14
    G. −4, −2, −1
    H. 0, −5, 4
    J. 10, 6, 9
Cumulative Review (continued)

Chapter 1–7

11. What is the sales tax on a $129.50 bicycle if the sales tax rate is 7%?
   A. $9.07
   B. $18.50
   C. $148
   D. $138.57

12. How does the volume of a cylinder change if the height is halved?
   F. It does not change.
   G. It is quadrupled.
   H. It is doubled.
   J. It is halved.

13. A box in the shape of a rectangular prism is 14 in. long, 6 in. wide, and 4 in. tall. Find the volume of the box.
   A. 168 in.$^3$
   B. 252 in.$^3$
   C. 336 in.$^3$
   D. 672 in.$^3$

14. What is the solution of $8(x-10)=40$?
   F. $x = 0$
   G. $x = 5$
   H. $x = 15$
   J. $x = 25$

16. The cost of two pounds of bananas is $1.98. How much will five pounds of bananas cost?
   F. $0.99
   G. $2.97
   H. $4.95
   J. $9.90

17. The volume of a cube is 216 cm.$^3$. Find the value of $x$.
   \[ x \]
   A. 3 cm
   B. 4 cm
   C. 5 cm
   D. 6 cm

Short Response

18. Thirty-two students in a club of 85 students plan to go on a trip to the art museum. What percent of the students plan to go on the trip? Show your work.

19. You and four friends are splitting the cost of dinner. Each of you contributes the same amount of money $m$ for the food.

   a. Write a variable expression for the total amount of money contributed for food.

   b. Evaluate your expression for $m = $12.50.
Cumulative Review

Chapters 1–8

1. What is $3.7 + 2.5$?
   A. 1.2  
   B. 5.2  
   C. 6.2  
   D. 12.95

2. Which of the following is in order from least to greatest?
   A. $0.25, 0.52, 0.5$  
   B. $5.0, 5.05, 5.5$  
   C. $2.16, 2.1, 2.165$  
   D. $0.03, 0.3, 0.003$

3. Simplify $3x + (6x - 7) + 6$.
   A. $9x - 1$  
   B. $9x - 13$  
   C. $2x + 6$  
   D. $2x - 6$

4. Solve the inequality $-8x \leq 40$.
   A. $x \leq 5$  
   B. $x \geq 5$  
   C. $x \leq -5$  
   D. $x \geq -5$

5. Evaluate $s(72 + r)$ for $s = 0.1$ and $r = 32$.
   A. 10.4  
   B. 39.2  
   C. 40  
   D. 104

6. Solve the inequality: $-4x + 7 \geq 31$.
   A. $x \geq 6$  
   B. $x \geq -6$  
   C. $x \leq 6$  
   D. $x \leq -6$

7. Which is the median of the given data?
   A. 6, 7, 5, 4, 8, 9, 5, 3, 1, 10  
   B. 5.5  
   C. 6  
   D. 9

8. For the data in Exercise 7, which is largest?
   A. mean  
   B. median  
   C. mode  
   D. range

9. Which of the following pairs of ratios are proportional?
   A. $\frac{3}{4}, \frac{15}{20}$  
   B. $\frac{2}{3}, \frac{6}{7}$  
   C. $\frac{1}{7}, \frac{7}{7}$  
   D. $\frac{3}{5}, \frac{1}{2}$

10. 60 is 24% of what number?
    A. 250  
    B. 240  
    C. 144  
    D. 40

11. Approximately what percent of 132 is 78?
    A. 16.9%  
    B. 40.9%  
    C. 59.1%  
    D. 83.1%

12. 10 $\cdot |z| = y$  
Which statement is true?
    A. $z$ will always be negative  
    B. $z$ and $y$ will always be positive  
    C. $y$ will always be positive  
    D. $z$ will always be positive

13. What is the approximate area of a circle with a diameter of 9 cm?
    A. 14.1 cm$^2$  
    B. 28.3 cm$^2$  
    C. 63.6 cm$^2$  
    D. 254.5 cm$^2$
Cumulative Review (continued)

Chapters 1–8

14. Find the volume of a rectangular prism with a length of 6 m, a width of 4 m, and a height of 12 m.
   F. 576 m³  G. 288 m³  H. 144 m³  J. 72 m³

15. A department store receives a shipment of 2,000 plates. Out of a random sample of 20 plates, 4 are broken. How many plates would you expect to be broken in the entire shipment?
   A. 4  B. 50  C. 400  D. 450

16. You want to know the favorite food of high school students. Which group would provide a random sample?
   F. every third person walking through the front doors
   G. every fourth person leaving the locker room
   H. the boys' football team
   J. the dance group

17. Solve \( \frac{y}{5} - 10 = 4 \)
   A. 70  B. -30  C. 30  D. 200

18. Mrs. Baker purchased a number of juice packs at a cost of $.30 each and a loaf of bread that cost $1.19. The total cost of her purchases was $2.99. Which equation would you use to determine how many juice packs Mrs. Baker purchased?
   F. \( 1.19j + .30j = 2.99 \)
   G. \( .30j + 2.99 = 1.19 \)
   H. \( 2.99 - 1.19j = .30 \)
   J. \( .30j + 1.19 = 2.99 \)

Extended Response

19. A local music shop sells a total of 35,100 country music CDs each year. The ratio of rock music to country music CDs sold is 5 : 3. Write and solve a proportion to find the number of rock music CDs sold each year. Show your work.

   __________________________________________

   __________________________________________
Cumulative Review

Chapters 1–9

Multiple Choice. Circle the letter of the best answer.

1. What is the area of the trapezoid below?
   
   ![Trapezoid Image]
   
   A. 36 cm²  
   B. 63 cm²  
   C. 64 cm²  
   D. 126 cm²

2. The probability that Lena will throw a strike is \( \frac{3}{4} \). What is the probability that Lena’s next two pitches will be strikes?
   
   A. \( \frac{3}{8} \)  
   B. \( \frac{3}{4} \)  
   C. \( \frac{1}{2} \)  
   D. \( \frac{9}{16} \)

3. A map of a city has a scale of 2 in.: \( \frac{1}{2} \) mi. The distance on the map from the library to your house is 6.5 in. What is the actual distance from the library to your house?
   
   A. 6.5 mi  
   B. 3.25 mi  
   C. 1.625 mi  
   D. 0.8125 mi

4. What is the approximate unit price of a lemon if a bag of 15 lemons costs $2?
   
   A. $0.075  
   B. $0.13  
   C. $0.15  
   D. $0.30

5. Margaret wants to paint a rectangular toy box that is 2 ft wide by 1.5 ft high by 4 ft long. One quart of paint will cover 100 ft². How many quarts of paint will she need to buy if she puts two coats on both the inside and outside of the toy box?
   
   A. 1 qt  
   B. 2 qt  
   C. 3 qt  
   D. 4 qt

6. Which is between 5 and 6?
   
   A. \( 5\frac{3}{2} + 2\frac{1}{4} \)  
   B. \( 4\frac{3}{5} + 2\frac{3}{4} \)  
   C. \( 11\frac{2}{3} - 6\frac{7}{8} \)  
   D. \( 9\frac{1}{4} - 3\frac{2}{5} \)

7. Solve \( x - \frac{3}{4} = \frac{9}{16} \).
   
   A. 10\frac{1}{4}  
   B. 10  
   C. 9\frac{3}{4}  
   D. 8\frac{3}{4}

8. The length of a room is 12 ft 4 in. The width is 15 ft 6 in. What is the area of the floor of the room in square feet?
   
   A. 175\frac{5}{6} ft²  
   B. 180 ft²  
   C. 180\frac{1}{6} ft²  
   D. 191\frac{1}{6} ft²

9. Solve \( \frac{5}{6} x = 9 \).
   
   A. 7\frac{1}{2}  
   B. 9  
   C. 10  
   D. 10\frac{4}{5}

10. A bicycle is on sale at \( \frac{1}{3} \) off the original price of $276. What is the sale price of the bike?
    
    A. $83  
    B. $92  
    C. $184  
    D. $201

11. In this figure, what is the ratio of the shaded area to the unshaded area?
    
    A. \( \frac{1}{4} \)  
    B. \( \frac{1}{3} \)  
    C. \( \frac{3}{4} \)  
    D. \( \frac{2}{3} \)

12. Jan earned $125 last week. If she worked 5 hours each day, Monday through Friday, how much did she make per hour?
    
    A. $25  
    B. $5  
    C. $4.25  
    D. $3.57
Cumulative Review (continued)

Chapters 1–9

13. The trapezoids are similar. What is the length of $CD$?

![Diagram of similar trapezoids with labels E, F, A, B, D, C, and H.]

A. 12  
B. 22  
C. 14.4  
D. 12.4

14. Which proportion will help you find 36% of 290?  

F. $\frac{36}{290} = \frac{n}{100}$  
G. $\frac{290}{36} = \frac{n}{100}$  
H. $\frac{n}{290} = \frac{36}{100}$  
J. $\frac{100}{290} = \frac{n}{36}$

15. Ragan made $5.25 per hour before he received a raise of $.50 per hour. What percent increase is this, rounded to the nearest tenth of a percent?  

A. 10.5%  
B. 10%  
C. 9.5%  
D. 9%

16. Two angles in a triangle measure 38° and 56°. What type of angle is the third angle?  

F. right  
G. straight  
H. obtuse  
J. acute

17. A bag contains red, blue, white, and yellow chips. You draw a chip, replace it, and draw another. How many possible outcomes are there?  

A. 4  
B. 10  
C. 12  
D. 16

18. You draw out a second chip from the bag of chips in Exercise 17 above without replacing the first chip. What can you say about the two events?  

F. They are dependent.  
G. They are equally likely.  
H. They are independent.  
J. They are unlikely.

19. You know that there are 3 red chips, 4 blue chips, 6 white chips, and 5 yellow chips in a bag. What is the probability that the first two chips you draw are both red if you do not replace the first chip?  

A. $\frac{2}{9}$  
B. $\frac{5}{28}$  
C. $\frac{1}{54}$  
D. $\frac{1}{51}$

Short Response

20. Casey got 32 out of 40 questions correct on her social studies test. Last week she got 24 out of 30 questions correct. Which percentage was better? Explain.