CHAPTER





- 1. SALES A plant nursery took in \$2,400 in sales of 4-inch potted annuals during March. April sales are expected to be triple that amount. Use the four-step plan to find the expected number of 4-inch potted annuals sold in April if each costs \$2.

- 2. Write the power  $3^6$  as a product of the same factor.

3. Evaluate  $5^3$ .

- **4.** Write the product  $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$  in exponential form.

Evaluate each expression.

5. 
$$12 + 9 \div 3$$

**6.** 
$$18 \div 3(2)$$

$$7.7 \times 4 - 3^2$$

8. 
$$5 + (7 - 4 + 2)^2$$

Evaluate each expression if a = 3, b = 7, c = 2, and d = 8.



10. 
$$12 - 4c$$

11. 
$$8a - 2d$$

12. 
$$\frac{6d}{c^2}$$

Name the number that is the solution of the given equation.

**13.** 
$$7 + r = 25$$
; 18, 19, 20

**14.** 
$$n \div 10 = 8; 8, 80, 800$$

Solve each equation mentally.

**15.** 
$$a - 17 = 22$$

**16.** 
$$12 = \frac{y}{4}$$

an equation and solve.



18. Define the Commutative Property.





NAME \_\_\_\_\_\_ PERIOD \_\_\_\_\_

# Chapter 1 Test, Form 2D (continued)



Use the Distributive Property to write each expression as, an equivalent expression. Then evaluate the expression.

19. 
$$(7 + 3)5$$

**20.** 4(10-7)

19.

20. \_\_\_\_\_

Name the property shown by each statement.

**21.** 
$$8 + 12 = 12 + 8$$

**22.** 
$$18 \times 1 = 18$$

Describe the pattern in each sequence and identify the sequence as arithmetic, geometric, or neither.

Write the next three terms of each sequence.

Complete.

**28.** 
$$0.5 \text{ m} = \underline{\hspace{1cm}} \text{mm}$$

Write each number in standard form.

**30.** 
$$9.4 \times 10^3$$

31. 
$$4.93 \times 10^7$$

Write each number in scientific notation.

Bonus Insert operation symbols to make the equation true.

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# **Chapter 3 Test, Form 2D**

SCORE \_\_

Write an integer for each situation.

1. 300 feet above sea level

**2.** a loss of \$13

For Questions 3 and 4, evaluate each expression.

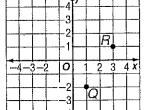
**5.** Graph the set of numbers on a number line:  $\{-6, 2, -3\}$ .

For Questions 6-8, replace each @ with < or > to make a true sentence.

- 9. Order 3, -8, 4, 2, -5, and -1 from least to greatest.
- 9.
- 10. TEMPERATURE On the same day, a thermometer registered -10°F in Duluth and -7°F in St. Paul. Which Minnesota city was warmer?

10. \_\_\_\_\_

Name the ordered pair for each point graphed at the right. Then identify in which quadrant each point lies.



11. \_\_\_\_\_

12. Q

**11.** *R* 

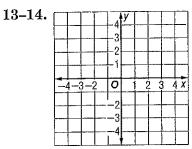
12. \_\_\_\_

Graph and label each point.

13. 
$$A(-3, -2)$$

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**14.** S(0, 2)



### **Chapter 3 Test, Form 2D** (continued)

Add, subtract, multiply, or divide.

15. 
$$-2 + 4$$

**16.** 
$$7(-10)$$

17. 
$$\frac{60}{-3}$$

18. 
$$6 - (-3)$$

19. 
$$(-45)^2$$

**20.** 
$$-1 + (-11)$$

$$21. -10 - 7$$

**22.** 
$$-8 \div (-4)$$

Evaluate each expression if a = -8, b = 5, and c = -2.

**23.** 
$$8 - (-b)$$

**24.** 
$$16 \div c$$

**25.** 
$$9 + c$$

**26.** 
$$-5(3c)$$

**27.** 
$$ab \div 10$$

**28.** 
$$a + b$$

**30.** 
$$a - c$$

For Questions 31 and 32, simplify each expression.

31. 
$$-6(5z)$$

32. 
$$-4(-2y)$$

**33.** What value of *d* makes 
$$-25 - (-16) = d$$
 a true sentence?

**Bonus** Find 
$$|x-y|$$
 when  $x = -7$  and  $y = 7$ .



# **Chapter 4 Test, Form 2D**

SCORE \_\_\_\_

Solve each equation. Check your solution.

1. 
$$s + 18 = -3$$

**2.** 
$$15 - d = -11$$
 **2.** \_\_\_\_\_

Solve. Use any strategy.

- 3. Sara sold 126 boxes of cookies. This is 14 more than twice the number of boxes her sister sold. How many boxes of cookies did Sara's sister sell?

Solve each equation. Check your solution.

4. 
$$7r = 63$$

5. 
$$1.5c = -24$$

6. 
$$4 + 2.6z = -29.8$$

7. 
$$43 = 15b - 47$$

Write each phrase as an algebraic expression.

Write each sentence as an algebraic equation.

Solve each inequality.

14. 
$$-10 + w \ge 23$$

**15.** 
$$6a - 15 < 9$$

**16.** 
$$7.4y + 5 \le 49.4$$

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# Chapter 4 Test, Form 2D (continued)

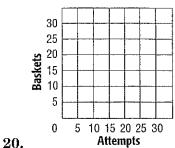
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Write an inequality for each sentence. Then solve the inequality.

- 17. A number minus fourteen is greater than negative eight.
- 17. \_\_\_\_\_
- 18. Negative nine is less than or equal to eleven plus four times a number.
- 18. \_\_\_\_\_
- 19. Five times a number minus 2.5 is less than 47.5.
- 19. \_\_\_\_\_

Troy plays basketball almost every day. The table shows the number of baskets he made and the number of attempts he made each day. Refer to this information for Questions 20 and 21.

Number of Attempts	12	16	20	25	25	32
Number of Baskets	8	12	18	18	22	28

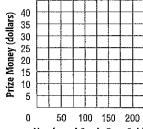


- **20.** On a separate sheet of paper, graph the ordered pairs (attempts, baskets).
- ----
- 21. Write a sentence that describes the trend in making baskets. 21.

21. \_\_\_\_\_

Becca is selling candy bars for a fund-raiser. The table shows how the number of candy bars she sells is related to the amount of prize money she receives.

Number of Candy Bars Sold	25	50	75	100	150	200
Prize Money (dollars)	5	10	15	20	30	40



- 22. Write the ordered pairs (candy bars, money) and graph them on a coordinate plane. Use a separate sheet of paper.
- 22. Number of Candy Bars Sold
- 23. State whether the slope of the line is positive or negative, and explain how you know.
- 23.

24. Find the slope of the line.

- 24, \_\_\_\_\_
- **25.** Write an equation for the graph. Let *x* represent the number of candy bars sold and *y* represent the amount of prize money.
- 25. \_\_\_\_\_

**Bonus** Can the following compound inequality be true? Explain. x < -4 and x > -3

B: \_\_\_\_\_



# **Chapter 5 Test, Form 2D**

SCORE \_

**1.** Evaluate  $y^2 + 2y + 1$  for y = 0, 1, and 2. Are the resulting numbers prime or composite?

Find the prime factorization of each number.

Find the GCF of each set of numbers or algebraic expressions.

6. 
$$32z$$
,  $42z^3$ 

Write each fraction in simplest form.

7. 
$$\frac{28}{48}$$

8. 
$$\frac{63}{102}$$

Write each fraction, mixed number, or percent as a decimal. Use bar notation if the decimal is a repeating decimal.

9. 
$$\frac{3}{11}$$

10. 
$$7\frac{3}{5}$$

Write each decimal or percent as a fraction in simplest form.



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# Chapter 5 Test, Form 2D (continued)

1

Write each ratio, fraction, or decimal as a percent.

14. 73.2 per 100

14. \_\_\_\_\_

15.  $\frac{26}{50}$ 

15.

**16.** 0.27

16. \_\_\_\_\_

Find the LCM of each set of numbers.

17. 24, 30, 360

17. \_\_\_\_\_

18. 36, 96

18.

Find the LCD for each pair of fractions.

19.  $\frac{3}{22}$ ,  $\frac{7}{55}$ 

19. \_\_\_\_\_

**20.**  $\frac{9}{10}$ ,  $\frac{11}{25}$ 

20.

For Questions 21–23, replace each  $\bullet$  with <, >, or = to make a true sentence.

21.  $\frac{7}{9}$  •  $\frac{15}{17}$ 

21.

22.  $\frac{7}{8}$  •  $\frac{8}{10}$ 

22.

23.  $\frac{7}{11} \bullet \frac{35}{55}$ 

23.

**24.** Order  $\frac{7}{8}$ , 0.8, and  $\frac{15}{16}$  from least to greatest.

24.

25. MOVING Louisa surveyed her class and found that 10 out of 24 students had moved to a new city before they started school. Write the ratio as a fraction in simplest form and as a decimal to the nearest thousandth.

25.

**Bonus** Replace with a prime factor to make a true sentence:  $2^2 \times 2 \times 11 = 220$ .

B: \_\_\_\_\_





# Chapter 6 Test, Form 2D

\_\_ PERIOD \_\_\_\_

SCORE \_\_\_\_

Estimate.

1. 
$$11\frac{7}{8} \div 6\frac{1}{5}$$

2. 
$$\frac{4}{5} + 4\frac{3}{4}$$

For Questions 3–12, add, subtract, multiply, or divide. Write in simplest form.

3. 
$$\frac{1}{14} + \frac{9}{14}$$

4. 
$$2\frac{1}{7} + 1\frac{3}{7}$$

5. 
$$\frac{5}{9} \times \frac{3}{7}$$

6. 
$$\frac{1}{3} \div \frac{4}{9}$$

7. 
$$7\frac{5}{12} - 2\frac{2}{3}$$

8. 
$$\frac{2}{9} + \frac{1}{6}$$

9. 
$$3+1\frac{2}{5}$$

10. 
$$\frac{5}{7} - \frac{1}{5}$$

11. 
$$4\frac{3}{8} \div 1\frac{3}{4}$$

12. 
$$\frac{5}{6} \times 12\frac{3}{5}$$

13. MUSIC After school, Teresa spends  $\frac{5}{8}$  of an hour practicing the piano and  $\frac{4}{5}$  of an hour practicing the trumpet. What is the total time Teresa spends practicing?

14.\_\_\_\_\_

Solve each equation. Check your solution.

14. 
$$\frac{x}{4} = 12$$

15. 
$$\frac{5}{7}s = 35$$

**16.** 
$$-0.3 = \frac{a}{1.5}$$

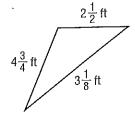
17. 
$$10 = \frac{2}{3}v$$

### **Chapter 6 Test, Form 2D** (continued)

For Questions 18-21, complete.

18. 
$$5\frac{1}{2}$$
 lb =  $\frac{?}{}$  oz

**19.** 3 pt = 
$$\frac{?}{}$$
 c



- 23. Find the perimeter and area of a rectangle with a length of  $8\frac{1}{9}$  inches and a width of 6 inches.
- 23. \_\_\_
- 24. Find the circumference of the circle. Use 3.14 for  $\pi$  and round to the nearest tenth.



- 25. PIE The diameter of a blueberry pie is  $9\frac{1}{2}$  inches. What is the circumference of the pie? Use  $\frac{22}{7}$  for  $\pi$  and round to the nearest tenth.
- Bonus TENNIS Samuel ran 30 feet from one side of the tennis court to the other. If the perimeter is eight times that distance, what is the court's length?

# **Chapter 7 Test, Form 2D**

1. SHOPPING Which size of laundry detergent shown in the table has the lowest unit price?

Size (L)	Cost (\$)
3	4.99
6	9.99
12	18.99

Write each ratio as a fraction in simplest form.

GHAPTE

- 3. 8 ounces to 2 pounds

Determine whether the ratios are equivalent. Explain.

4. 
$$\frac{5}{11}$$
 and  $\frac{11}{5}$ 

Find each unit rate. Round to the nearest hundredth if necessary.

Determine whether each pair of ratios forms a proportion.

9. 
$$\frac{2 \text{ m}}{7 \text{ s}}$$
 and  $\frac{6 \text{ m}}{21 \text{ s}}$ 

10. 
$$\frac{10}{5}$$
 and  $\frac{1}{2}$ 

Solve each proportion.

11. 
$$\frac{7}{m} = \frac{4}{5}$$

12. 
$$\frac{14}{5} = \frac{q}{3}$$

13. 
$$\frac{p}{6} = \frac{5}{3}$$

For Questions 14 and 15, suppose you are making a scale drawing. Find the length of each object on the scale drawing with the given scale. Then find the scale factor.



# Chapter 7 Test, Form 2D (continued)

Write each percent as a fraction in simplest form.

17. 
$$11\frac{1}{9}\%$$

17.

18. \_\_\_\_\_

Write each fraction as a percent. Round to the nearest hundredth if necessary.

19. 
$$\frac{13}{40}$$

19.

**20.** 
$$\frac{2}{11}$$

20.

Write each percent as a decimal and as a mixed number or fraction in simplest form.

21. \_\_\_\_\_

**22.** 0.32%

22. \_\_\_\_\_

Write each decimal as a percent.

**23.** 9.4

**24.** 0.008

23. \_\_\_\_\_\_ 24. \_\_\_\_\_

Write each number as a percent.

25. \_\_\_\_\_

**25.**  $\frac{3}{400}$ 

**26.**  $6\frac{3}{4}$ 

26. \_\_\_\_\_

Find each number.

27. What number is 24% of 332?

27. \_\_\_\_\_

28. What percent of 30 is 90?

28. \_\_\_\_\_

**29.** 15% of 80 is what number?

29. \_\_\_\_\_

**30.** 35 is 35% of what number?

30. \_\_\_\_\_\_

31. 9 is what percent of 72?

31. \_\_\_\_\_

**32.** 6% of what number is 24?

32. \_\_\_\_\_

**33.** What number is 25% of 46?

33. \_\_\_\_\_

Bonus SURVEY The results of a survey conducted by the football coach at East High School showed that 8 out of 20 students were planning to attend the homecoming football game. If there are 1,560 students at East High School, how many students are not planning to attend the homecoming game?

B: \_\_\_\_\_

# **Chapter 1 Assessment Answer Key**

Form 2D Page 55

1. <u>3,600 annuals</u>

Page 56

- $_{19.}$  (7)5 + (3)5; 50
- $20. \quad 4(10) 4(7); 12$

- $_{2}$ ,  $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$
- 125
- 15
- 12
- 19
- 30
- 9. \_\_\_\_\_49
- 10. \_\_\_\_\_
- 11. \_\_\_\_\_
- 12 12. \_\_\_\_
- 18 13. \_\_\_\_
- 80 14. \_\_\_\_
- 39 15. \_\_\_\_
- 48
- 17. r = 6 + 4; 10 laps

The order in which two numbers are added or multiplied does not change their sum or product.

of Addition **Identity Property of** Multiplication 22. \_\_\_

**Commutative Property** 

- multiplying 23. \_
- 24. ×2; geometric
- 25. +5; arithmetic
- 26. <u>25.3, 30.3, 35.3</u>
- 27. 324, 972, 2,916
- 500 28. \_\_\_
- 0.15 29. \_\_\_
- 9,400 30. \_
- 49,300,000
- $5.8 \times 10^{2}$ 32.
- $3.29 \times 10^{6}$
- B: \_\_\_\_  $\times$ ; -;  $\div$

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# **Chapter 3 Assessment Answer Key**

## Form 2D Page 173

- 1. \_\_\_\_\_300 2. \_\_\_\_13
- 3. <u>13</u>
- 4. 🐣 8
- **5.** -6 -3 0 3
- 6. <
- 7. \_\_\_\_\_\_
- 8. \_\_\_\_\_
- $9. \ \ -8, -5, -1, 2, 3, 4$
- 10. St. Paul

- 11. <u>(3, 1); l</u>
- 12. (1,-2); IV

# 13-14.

### Page 174

- 15. \_\_\_\_\_2
- 16. \_\_\_\_\_\_
- 17. 20
- 18. \_\_\_\_\_9
- 19. \_\_\_\_\_25
- 20. \_\_\_\_\_\_
- 21. \_\_\_\_\_\_\_
- 22. \_\_\_\_\_2
- 23. \_\_\_\_\_13
- 24. \_\_\_\_\_\_
- 25. \_\_\_\_\_7
- 26. \_\_\_\_\_30
- 27. \_\_\_\_\_
- 28. \_\_\_\_\_\_
- 30. \_\_\_\_\_
- 31. <u>-30</u>z
- 32. \_\_\_\_\_8*y*\_\_\_\_
- 33. \_\_\_\_\_
- B: 14

•			

# **Chapter 4 Assessment Answer Key**

### Form 2D Page 229

$$9.$$
  $r - 8.2$ 

11. 
$$c \div 17$$

12. 
$$9 + 2x = 31$$

13. 
$$7 - 18t = 25$$

14. 
$$w \ge 33$$

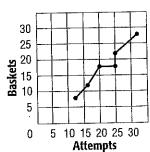
16. 
$$y \leq 6$$

### Page 230

17. 
$$x-14 > -8$$
;  $x > 6$ 

18. 
$$-9 \le 11 + 4n$$
;  $-5 \le n$ 

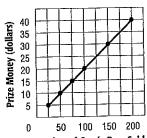
19. 
$$5v - 2.5 < 47.5$$
;  $v < 10$ 



20.

Baskets made depend upon the number of

21. attempts.



22.

Number of Candy Bars Sold

Positive; as x increases,

23. <u>y</u> increases.

24. 
$$\frac{\frac{1}{5}}{v = \frac{1}{2}x}$$

25.  $y = \frac{1}{5}x$ 

No; there is no number that is both less than -4 and greater than -3.

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# **Chapter 5 Assessment Answer Key**

### Form 2D Page 291

1. 1, 4, 9; 1 neither, 4 and 9 composite

2. 
$$2^3 \times 3^2$$

### Page 292

$$24. \qquad 0.8, \frac{7}{8}, \frac{15}{16}$$

25. 
$$\frac{5}{12}$$
; 0.417

# **Chapter 6 Assessment Answer Key**

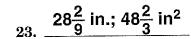


Form 2D Page 357

Page 358

- 1.  $12 \div 6 = 2$
- 2, 1+5=6
- 3. \_\_\_\_\_<u>5</u> 7\_\_\_\_\_
- 4.  $3\frac{4}{7}$
- 5. <u>5</u> 21
- 6. \_\_\_\_\_\_3
- 7.  $\frac{4\frac{3}{4}}{4}$
- 8. <u>7</u> 18
- 9.  $4\frac{2}{5}$
- 10. <u>18</u> 35
- 11.  $\frac{2\frac{1}{2}}{2}$
- 12.  $10\frac{1}{2}$
- 13. \_\_\_\_\_1<sup>17</sup> h
- 14. \_\_\_\_\_48
- 15. 49
- **16.** −**0.45**
- 17. \_\_\_\_\_15

- 18. \_\_\_\_\_88
- 19. \_\_\_\_\_6
- 20. \_\_\_\_\_30
- $\frac{1\frac{2}{3}}{21}$ .
- 22. \_\_\_\_\_10 $\frac{3}{8}$  ft



24. \_\_\_\_17.0 mm\_\_\_

25. 29.9 in.

B: \_\_\_\_\_90 ft

# **Chapter 7 Assessment Answer Key**

### Form 2D Page 423

1. \_\_\_\_\_12 L

- 2.  $\frac{\frac{3}{8}}{\frac{1}{4}}$
- 4.  $\frac{4}{11} \neq \frac{11}{5}$ yes;  $\frac{25}{40} = \frac{5}{8}$
- 6. \$0.53 per lb
  3 stickers
  per student
  4.67 gal
  per turtle
- 9. <u>yes</u>
  10. <u>no</u>
- 11. \_\_\_\_\_8.75
- 12. \_\_\_\_\_8.4
- 13. 10
- 14.  $2\frac{2}{5}$  in.;  $\frac{1}{60}$ 15. 8 cm;  $\frac{1}{250}$
- 16. 30 mi by 45 mi

### **Page 424**

- 19. \_\_\_\_\_32.5%\_\_\_\_\_
- 20. \_\_\_\_18.18%
- $21. 5.5; 5\frac{1}{2}$
- 22.  $0.0032; \frac{2}{625}$
- **23.** \_\_\_\_\_940%\_\_
- 24. \_\_\_\_\_0.8%
- **25. 0.75%**
- 26. 675%
- 27. 79.68
- 28. \_\_\_\_\_300%\_\_
- 29. \_\_\_\_\_12
- 30. \_\_\_\_\_100
- 31. \_\_\_\_\_12.5%\_\_\_
- 32. \_\_\_\_\_400
- 33. \_\_\_\_\_11.5
- B: 936 students