### **Comparing and Ordering Rational Numbers**

Compare. Use >, <, or = to complete each statement.

1. 
$$\frac{2}{3}$$

2. 
$$\frac{3}{5}$$
  $\frac{7}{10}$ 

3. 
$$-\frac{3}{4}$$
  $-\frac{13}{16}$ 

**4.** 
$$\frac{9}{21}$$
  $\frac{6}{14}$ 

5. 
$$-\frac{2}{8}$$

**6.** 
$$\frac{7}{9}$$
  $\boxed{\phantom{0}}$   $-\frac{8}{9}$ 

7. 
$$\frac{5}{8}$$
  $\frac{7}{12}$ 

8. 
$$-\frac{4}{5}$$

9. 
$$\frac{4}{18}$$

10. 
$$\frac{8}{17}$$

**11.** 
$$\frac{4}{7}$$
  $2\frac{4}{7}$ 

**12.** 
$$\frac{-9}{-11}$$
  $\frac{9}{11}$ 

**13.** 
$$\frac{1}{3}$$
  $-\frac{3}{9}$ 

**14.** 
$$-\frac{12}{6}$$
  $\frac{9}{3}$ 

**15.** 
$$-\frac{5}{10}$$
  $\frac{-3}{-4}$ 

Find the LCM of each group of numbers or expressions.

**19.** 
$$9a^3b$$
,  $18abc$ 

- 22. A quality control inspector in an egg factory checks every forty-eighth egg for cracks and every fifty-fourth egg for weight. What is the number of the first egg each day that the inspector checks for both qualities?
- 23. A stock sold for  $3\frac{5}{8}$  one day and  $3\frac{1}{2}$  the next. Did the value of the stock go up or down? Explain.
- **24.** Marissa needs  $2\frac{2}{3}$  yards of ribbon for a wall-hanging she wants to make. She has  $2\frac{3}{4}$  yards. Does she have enough ribbon? Explain.

Order from least to greatest.

**25.** 
$$\frac{2}{3}$$
,  $\frac{3}{4}$ ,  $\frac{1}{2}$ 

**26.** 
$$\frac{2}{5}, \frac{1}{3}, \frac{3}{7}, \frac{4}{9}$$

**27.** 
$$\frac{8}{11}$$
,  $\frac{9}{10}$ ,  $\frac{7}{8}$ ,  $\frac{3}{4}$ 

Write as a fraction or mixed number in simplest form.

- 1. 0.4
- **2.** 0.75
- **3.** 0.16 \_\_\_\_\_

- **4.** 2.34 \_\_\_\_\_
- **5.** 0.09
- **6.** 8.8

Write each fraction or mixed number as a decimal.

- 7.  $\frac{17}{20}$  \_\_\_\_\_
- **9.**  $\frac{9}{16}$

- **10.**  $3\frac{1}{8}$  \_\_\_\_\_ **11.**  $6\frac{9}{32}$  \_\_\_\_\_ **12.**  $2\frac{87}{125}$  \_\_\_\_\_
- **14.**  $4\frac{31}{50}$
- **15.**  $-\frac{7}{12}$

- **16.**  $\frac{4}{9}$  \_\_\_\_\_
- **18.**  $\frac{15}{11}$  \_\_\_\_\_

Order from least to greatest.

- **19.**  $0.4, \frac{3}{5}, \frac{1}{2}, \frac{3}{10}$
- **20.**  $-\frac{3}{8}$ ,  $-\frac{3}{4}$ , -0.38, -0.6
- **21.**  $\frac{1}{4}$ ,  $-\frac{1}{5}$ , 0.2,  $\frac{2}{5}$
- 22. Write an improper fraction with the greatest possible value using each of the digits 5, 7, and 9 once. Write this as a mixed number and as a decimal.

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

- **23.** 10.07
- **24.** 3.44 \_\_\_\_\_
- **25.** -4.<del>27</del>

- **26.** 0.09
- **27.** 0.375
- **28.** 0.243

Compare. Use <, >, or = to complete each statement.

**29.**  $\frac{5}{6}$  0.8

- **30.**  $\frac{7}{11}$  0.65
- **31.** 4.2
- **32.**  $-\frac{3}{11}$  -0.25 **33.**  $0.\overline{80}$   $\frac{80}{99}$
- **34.** -0.43  $-\frac{7}{16}$

### Adding and Subtracting Fractions

Find each sum or difference.

1. 
$$\frac{2}{3} + \frac{1}{6}$$

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

5. 
$$\frac{1}{4} - \frac{1}{3}$$

7. 
$$\frac{x}{3} + \frac{x}{5}$$

9. 
$$\frac{7}{12} - \frac{3}{12}$$

**11.** 
$$1\frac{5}{8} - 1\frac{1}{8}$$

**13.** 
$$\frac{9}{16} + \frac{3}{4}$$

**15.** 
$$3\frac{5}{6} + 2\frac{3}{4}$$

2. 
$$\frac{5}{8} - \frac{1}{4}$$

**4.** 
$$1\frac{1}{2} - 2\frac{4}{5}$$

**6.** 
$$5\frac{7}{8} + 3\frac{5}{12}$$

**8.** 
$$\frac{2n}{5} + \left(-\frac{n}{6}\right)$$

10. 
$$3\frac{1}{5} + 2\frac{2}{5}$$

**12.** 
$$\frac{3}{5y} + \frac{1}{5y}$$

**14.** 
$$2\frac{7}{10} - 3\frac{7}{20}$$

**16.** 
$$-1\frac{2}{3} + \left(-2\frac{1}{4}\right)$$

Find each sum using mental math.

**17.** 
$$3\frac{3}{8} + 2\frac{1}{8} + 1\frac{3}{8}$$

**19.** 
$$8\frac{3}{16} + 2\frac{5}{16} + 4\frac{7}{16}$$

**18.** 
$$6\frac{7}{12} + 4\frac{5}{12}$$

**20.** 
$$7\frac{9}{10} + 3\frac{3}{10}$$

Estimate each sum or difference.

**21.** 
$$13\frac{4}{5} - 2\frac{9}{10}$$

**23.** 
$$23\frac{6}{13} + 32\frac{7}{8}$$

**22.** 
$$18\frac{3}{8} + 11\frac{6}{7}$$

**24.** 
$$26\frac{9}{10} + 72\frac{5}{6}$$

Use prime factors to simplify each expression.

**25.** 
$$\frac{7}{30} - \frac{29}{75}$$

**27.** 
$$\frac{5}{42} + \frac{5}{12}$$

**29.** 
$$4\frac{4}{15} + 2\frac{4}{39}$$

**26.** 
$$\frac{3}{14} + \frac{17}{63}$$

**28.** 
$$2\frac{5}{6} - 2\frac{5}{22}$$

**30.** 
$$3\frac{5}{9} - 2\frac{11}{12}$$

**Multiplying and Dividing Fractions** 

Find each quotient.

1. 
$$\frac{1}{2} \div \frac{5}{8}$$

3. 
$$\frac{3}{8} \div \frac{6}{7}$$

5. 
$$8 \div \frac{4}{5}$$

**7.** 
$$5\frac{5}{8} \div 1\frac{1}{4}$$

9. 
$$\frac{6}{35t} \div \frac{3}{7t}$$

2. 
$$-\frac{5}{24} \div \frac{7}{12}$$

4. 
$$\frac{15}{19} \div \frac{15}{19}$$

**6.** 
$$6\frac{1}{4} \div 2\frac{1}{2}$$

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

**10.** 
$$1\frac{3}{7} \div \left(-2\frac{1}{7}\right)$$

Find each product.

11. 
$$\frac{2}{5} \cdot \frac{3}{7}$$

**13.** 
$$\frac{7}{9} \cdot \frac{6}{13}$$

**15.** 
$$-4\frac{2}{3}(-5\frac{1}{6})$$

17. 
$$4\frac{7}{8} \cdot 6$$

**19.** 
$$\frac{9a}{10} \cdot \frac{5}{12a}$$

12. 
$$\frac{5}{9} \cdot \frac{3}{5}$$

**14.** 
$$\frac{5}{6} \cdot \left(-1\frac{3}{10}\right)$$

**16.** 
$$2\frac{5}{6}(-\frac{2}{5})$$
 \_\_\_\_\_

**18.** 
$$\frac{5x}{7} \cdot \frac{3}{10}$$

**20.** 
$$\frac{9t}{16} \cdot \frac{12}{17}$$

- 21. You are making cookies for a bake sale. The recipe calls for  $2\frac{3}{4}$  cups of flour. How much flour will you need if you triple the recipe?
- 22. It took you 1 hour to read  $1\frac{3}{8}$  chapters of a novel. At this rate, how many chapters can you read in three hours?
- **23.** A teacher wants to tape sheets of paper together to make a science banner. He wants the banner to be  $127\frac{1}{2}$  inches long, and each sheet of paper is  $8\frac{1}{2}$  inches wide. How many sheets of paper will he need?

### **Using Customary Units of Measurement**

Use estimation, mental math, or paper and pencil to convert from one unit to the other.

1. 
$$2 \text{ gal } 2 \text{ qt} = \underline{\qquad} \text{qt}$$

4. 
$$\frac{3}{5}t = _{lb}$$

**6.** 
$$20 \text{ fl oz} =$$
\_\_\_\_\_c

7. 
$$20 \text{ oz} = ____lb$$

**8.** 
$$2\frac{1}{2}$$
 pt = \_\_\_\_\_\_c

**9.** 
$$1\frac{1}{8}$$
 lb = \_\_\_\_\_ oz

Is each measurement reasonable? If not, give a reasonable measurement.

11. A glass of milk holds about 8 pt.

**12.** A newborn baby weighs about  $7\frac{1}{2}$  oz.

13. A phonebook is  $\frac{3}{4}$  ft wide.

Choose an appropriate unit of measure. Explain your choice.

14. weight of a whale

15. sugar in a cookie recipe

16. length of a mouse

Should each item be measured by length, weight, or capacity?

17. amount of soup in a can

18. height of a can

19. heaviness of a can

20. diameter of a can

....

Pre-Algebra Chapter 5

Work Backward

Work backward to solve each problem.

- 1. Manuel's term paper is due on March 31. He began doing research on March 1. He intends to continue doing research for 3 times as long as he has done already. Then he will spend a week writing the paper and the remaining 3 days typing. What day is it? (Assume he will finish typing on March 30.)
- 2. A disc jockey must allow time for 24 minutes of commercials every hour, along with 4 minutes for news, 3 minutes for weather, and 2 minutes for public-service announcements. If each record lasts an average of 3 minutes, how many records per hour can the DJ play?
- **3.** Margaret is reading the 713-page novel *War and Peace*. When she has read twice as many pages as she has read already, she will be 119 pages from the end. What page is she on now?
- 4. On Monday the low temperature at the South Pole dropped 9°F from Sunday's low. On Tuesday it fell another 7°, then rose 13° on Wednesday and 17° more on Thursday. Friday it dropped 8° to −50°F. What was Sunday's low temperature?
- **5.** Each problem lists the operations performed on n to produce the given result. Find n.
  - **a.** Multiply by 3, add 4, divide by 5, subtract 6; result, -1.

 $n = \underline{\hspace{1cm}}$ 

**b.** Add 2, divide by 3, subtract 4, multiply by 5; result, 35.

n = \_\_\_\_\_

c. Multiply by 2, add 7, divide by 17; result, 1.

n =

d. Divide by 3, add 9, multiply by 2, subtract 12; result, 4.

*n* = \_\_\_\_\_

e. Subtract 2, divide by 5, add 7, multiply by 3; result, 30.

n =

### **Solving Equations by Adding or Subtracting Fractions**

Solve each equation.

1. 
$$m - \left(-\frac{7}{10}\right) = -1\frac{1}{5}$$

3. 
$$x - \frac{5}{6} = \frac{1}{10}$$

**5.** 
$$x + \frac{5}{8} = \frac{7}{8}$$

7. 
$$4 = \frac{4}{9} + y$$

9. 
$$n + \frac{2}{3} = \frac{1}{9}$$

**11.** 
$$w - 14\frac{1}{12} = -2\frac{3}{4}$$

**13.** 
$$a - 9\frac{1}{6} = -3\frac{19}{24}$$

**15.** 
$$z + \left(-3\frac{2}{5}\right) = -4\frac{1}{10}$$

**17.** 
$$h - \left(-6\frac{1}{2}\right) = 14\frac{1}{4}$$

2. 
$$k - \frac{3}{4} = \frac{2}{5}$$

**4.** 
$$t - \left(-3\frac{1}{6}\right) = 7\frac{2}{3}$$

**6.** 
$$k + \frac{4}{5} = 1\frac{3}{5}$$

**8.** 
$$h + \left(-\frac{5}{8}\right) = -\frac{5}{12}$$

**10.** 
$$e - \frac{11}{16} = -\frac{7}{8}$$

**12.** 
$$v + \left(-4\frac{5}{6}\right) = 2\frac{1}{3}$$

**14.** 
$$f + \left| -3\frac{11}{12} \right| = 18$$

**16.** 
$$x - \frac{7}{15} = \frac{7}{60}$$

**18.** 
$$p - 5\frac{3}{8} = -\frac{11}{24}$$

Solve each equation using mental math.

**19.** 
$$x + \frac{3}{7} = \frac{5}{7}$$

**21.** 
$$a + \frac{1}{0} = \frac{3}{0}$$

**20.** 
$$k - \frac{8}{9} = -\frac{1}{9}$$

**22.** 
$$g - \frac{4}{5} = -\frac{2}{5}$$

Write an equation to solve each problem.

- 23. Pete's papaya tree grew  $3\frac{7}{12}$  ft during the year. If its height at the end of the year was  $21\frac{1}{6}$  ft, what was its height at the beginning of the year?
- **24.** Lee is  $1\frac{3}{4}$  ft taller than Jay. If Lee is  $6\frac{1}{4}$  ft tall, how tall is Jay?

Solving Equations by Multiplying Fractions

Solve each equation.

1. 
$$\frac{3}{4}x = \frac{9}{16}$$

**2.** 
$$-\frac{1}{3}p = \frac{1}{4}$$

3. 
$$\frac{-3}{8}k = \frac{1}{2}$$

4. 
$$\frac{1}{8}h = \frac{1}{10}$$

**5.** 
$$2\frac{2}{3}e = \frac{1}{18}$$

**6.** 
$$-1\frac{2}{7}m = 6$$

7. 
$$-\frac{1}{4}p = \frac{1}{18}$$

8. 
$$\frac{11}{-12}w = -1$$

9. 
$$-3\frac{4}{7}x = 0$$

**10.** 
$$\frac{2}{3}m = 2\frac{2}{9}$$

**11.** 
$$5c = \frac{2}{3}$$

**12.** 
$$-8k = \frac{4}{5}$$

**13.** 
$$\frac{4}{7}y = 4$$
 \_\_\_\_\_

**14.** 
$$2\frac{1}{4}f = \frac{6}{5}$$

**15.** 
$$\frac{10}{11}n = \frac{2}{11}$$

**16.** 
$$\frac{7}{8}c = \frac{7}{6}$$

Solve each equation using mental math.

**18.** 
$$\frac{1}{4}y = 5$$

**19.** 
$$-3h = \frac{3}{8}$$

**20.** 
$$\frac{1}{5}k = -\frac{1}{3}$$

Write an equation to solve each problem.

- 21. It takes Nancy  $1\frac{2}{3}$  min to read 1 page in her social studies book. It took her  $22\frac{1}{2}$  min to complete her reading assignment. How long was the assignment? Let m represent the number of pages she read.
- **22.** It takes Gary three hours to drive to Boston. If the trip is 156 miles, what is Gary's average number of miles per hour? Let x represent the miles per hour.

### Powers of Products and Quotients

Simplify each expression.

1. 
$$(\frac{5}{6})^2$$

2. 
$$\left(-\frac{4}{9}\right)^2$$

3. 
$$\left(\frac{x^2}{5}\right)^3$$

4. 
$$(2x)^3$$

5. 
$$(-3y^2)^2$$

**6.** 
$$(5ab^2)^3$$

7. 
$$(12mn)^2$$

8. 
$$(-10xy^3)^3$$

9. 
$$(9qrs^4)^3$$

**10.** 
$$\left(\frac{2x}{9y}\right)^2$$

**11.** 
$$-(a^2b^2)^3$$

**12.** 
$$(2a^3b^2)^4$$

13. 
$$\left(\frac{2x}{y}\right)^2$$

**14.** 
$$\left(-\frac{3x}{8y}\right)^2$$

**15.** 
$$\left(\frac{3y^2}{x}\right)^3$$

**16.** 
$$\left(\frac{2x^2y}{xy^3}\right)^5$$

Evaluate for a=2, b=-1, and  $c=\frac{1}{3}$ .

17. 
$$(a^2)^3$$

17. 
$$(a^2)^3$$
 \_\_\_\_\_ 18.  $2b^3$  \_\_\_\_\_ 19.  $(-9c^2)^3$  \_\_\_\_\_

**20.** 
$$(a^2b)^2$$
 \_\_\_\_\_ **21.**  $(ac)^2$  \_\_\_\_\_ **22.**  $(b^3)^7$  \_\_\_\_\_

**21.** 
$$(ac)^2$$

**22.** 
$$(b^3)^7$$

Complete each equation.

**23.** 
$$(3b^{---})^2 = 9b^{10}$$

**24.** 
$$(m^2n)^{----} = m^8n^4$$

**25.** 
$$(xy^{---})^2 = x^2y^6$$

**26.** 
$$\left(\frac{3s^2t}{r}\right)^{-} = \frac{9s^4t^2}{r^2}$$

- 27. Write an expression for the area of a square with a side of length  $4a^2$ . Simplify your expression.
- **28.** Write an expression for the volume of a cube with a side of length  $3z^5$ . Simplify your expression.

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### Practice 5-1

1. < 2. < 3. > 4. = 5. < 6. > 7. > 8. > 9. = 10. > 11. < 12. = 13. > 14. > 15. < 16. 21 17. 96 18. 150 19.  $18a^3bc$  20.  $84x^2y^2$  21. 144 22. 432 23. down;  $3\frac{5}{8} > 3\frac{1}{2}$  24. yes;  $2\frac{2}{3} < 2\frac{3}{4}$  25.  $\frac{1}{2}$ ,  $\frac{2}{3}$ ,  $\frac{3}{4}$  26.  $\frac{1}{3}$ ,  $\frac{2}{5}$ ,  $\frac{3}{7}$ ,  $\frac{4}{9}$  27.  $\frac{8}{11}$ ,  $\frac{3}{4}$ ,  $\frac{7}{8}$ ,  $\frac{9}{10}$ 

### Practice 5-2

1.  $\frac{2}{5}$  2.  $\frac{3}{4}$  3.  $\frac{4}{25}$  4.  $2\frac{17}{50}$  5.  $\frac{9}{100}$  6.  $8\frac{4}{5}$ 7. 0.85 8. 0.875 9. -0.5625 10. 3.125
11. 6.28125 12. 2.696 13. 0.52 14. 4.62
15.  $-0.58\overline{3}$  16. 0. $\overline{4}$  17. 0.2 $\overline{7}$  18. 1. $\overline{36}$ 19.  $\frac{3}{10}$ , 0.4,  $\frac{1}{2}$ ,  $\frac{3}{5}$  20.  $-\frac{3}{4}$ , -0.6, -0.38,  $-\frac{3}{8}$ 21.  $-\frac{1}{5}$ , 0.2,  $\frac{1}{4}$ ,  $\frac{2}{5}$  22.  $\frac{97}{5}$  = 19 $\frac{2}{5}$  = 19.4 23. 10 $\frac{7}{90}$ 24. 3 $\frac{11}{25}$  25.  $-4\frac{3}{11}$  26.  $\frac{9}{100}$  27.  $\frac{3}{8}$  28.  $\frac{241}{990}$  29. > 30. < 31. = 32. < 33. = 34. >

### Practice 5-3

1.  $\frac{5}{6}$  2.  $\frac{3}{8}$  3.  $1\frac{2}{7}$  4.  $-1\frac{3}{10}$  5.  $-\frac{1}{12}$  6.  $9\frac{7}{24}$  7.  $\frac{8x}{15}$  8.  $\frac{7n}{30}$  9.  $\frac{1}{3}$  10.  $5\frac{3}{5}$  11.  $\frac{1}{2}$  12.  $\frac{4}{5y}$  13.  $1\frac{5}{16}$  14.  $-\frac{13}{20}$  15.  $6\frac{7}{12}$  16.  $-3\frac{11}{12}$  17.  $6\frac{7}{8}$  18. 11 19.  $14\frac{15}{16}$  20.  $11\frac{1}{5}$  21. 11 22. 30 23. 56 24. 100 25.  $-\frac{23}{150}$  26.  $\frac{61}{126}$  27.  $\frac{15}{28}$  28.  $\frac{20}{33}$  29.  $6\frac{24}{65}$  30.  $\frac{23}{36}$ 

#### Practice 5-4

1.  $\frac{4}{5}$  2.  $-\frac{5}{14}$  3.  $\frac{7}{16}$  4. 1 5. 10 6.  $2\frac{1}{2}$  7.  $4\frac{1}{2}$  8.  $3\frac{1}{3}$  9.  $\frac{2}{5}$  10.  $-\frac{2}{3}$  11.  $\frac{6}{35}$  12.  $\frac{1}{3}$  13.  $\frac{14}{39}$  14.  $-1\frac{1}{12}$  15.  $24\frac{1}{9}$  16.  $-1\frac{2}{15}$  17.  $29\frac{1}{4}$  18.  $\frac{3x}{14}$  19.  $\frac{3}{8}$  20.  $\frac{27t}{68}$  21.  $8\frac{1}{4}$  cups 22.  $4\frac{1}{8}$  chapters 23. 15 sheets

### Practice 5-5

1. 10 2. 9 3. 20 4. 1200 5.  $2\frac{1}{2}$  6.  $2\frac{1}{2}$  7.  $1\frac{1}{4}$  8. 5 9. 18 10.  $1\frac{1}{2}$  11. A glass of milk holds about 8 fl oz. 12. A newborn weighs about  $7\frac{1}{2}$  lb. 13. Reasonable 14. ton; A whale is very heavy. 15. cup; Cookies have about a cup of sugar. 16. inch; A mouse is small 17. capacity 18. length 19. weight 20. length

### Practice 5-6

**1.** March 5 **2.** 9 records per hour **3.** page 198 **4.** -56°F **5.a.** 7 **b.** 31 **c.** 5 **d.** -3 **e.** 17

### Practice 5-7

1.  $-1\frac{9}{10}$  2.  $1\frac{3}{20}$  3.  $\frac{14}{15}$  4.  $4\frac{1}{2}$  5.  $\frac{1}{4}$  6.  $\frac{4}{5}$  7.  $3\frac{5}{9}$  8.  $\frac{5}{24}$  9.  $-\frac{5}{9}$  10.  $-\frac{3}{16}$  11.  $11\frac{1}{3}$  12.  $7\frac{1}{6}$  13.  $5\frac{3}{8}$  14.  $14\frac{1}{12}$  15.  $-\frac{7}{10}$  16.  $\frac{7}{12}$  17.  $7\frac{3}{4}$  18.  $4\frac{11}{12}$  19.  $\frac{2}{7}$  20.  $\frac{7}{9}$  21.  $\frac{2}{9}$  22.  $\frac{2}{5}$  23.  $h + 3\frac{7}{12} = 21\frac{1}{6}$ ;  $h = 17\frac{7}{12}$  ft 24.  $h + 1\frac{3}{4} = 6\frac{1}{4}$ ;  $h = 4\frac{1}{2}$  ft

### Practice 5-8

1.  $x = \frac{3}{4}$  2.  $p = -\frac{3}{4}$  3.  $k = -1\frac{1}{3}$  4.  $h = \frac{4}{5}$  5.  $e = \frac{1}{48}$  6.  $m = -4\frac{2}{3}$  7.  $p = -\frac{2}{9}$  8.  $w = 1\frac{1}{11}$  9. x = 0 10.  $m = 3\frac{1}{3}$  11.  $c = \frac{2}{15}$  12.  $k = -\frac{1}{10}$  13. y = 7 14.  $f = \frac{8}{15}$  15.  $n = \frac{1}{5}$  16.  $c = 1\frac{1}{3}$  17. d = 6 18. y = 20 19.  $h = -\frac{1}{8}$  20.  $k = -1\frac{2}{3}$  21.  $1\frac{2}{3}m = 22\frac{1}{2}$ ;  $m = 13\frac{1}{2}$  pages 22. 3x = 156; x = 52 mi/h

### Practice 5-9

7.  $144m^2n^2$  8.  $-1,000x^3y^9$  9.  $729q^3r^3s^{12}$ 10.  $\frac{4x^2}{81y^2}$  11.  $-a^6b^6$  12.  $16a^{12}b^8$  13.  $\frac{4x^2}{y^2}$ 14.  $\frac{9x^2}{64y^2}$  15.  $\frac{27y^6}{x^3}$  16.  $\frac{32x^5}{y^{10}}$  17. 64 18. -2 19. -1 20. 16 21.  $\frac{4}{9}$  22. -1 23. 5 24. 4 25. 3 26. 2 27.  $(4a^2)^2 = 16a^4$ 28.  $(3z^5)^3 = 27z^{15}$ 

1.  $\frac{25}{36}$  2.  $\frac{16}{81}$  3.  $\frac{x^6}{125}$  4.  $8x^3$  5.  $9y^4$  6.  $125a^3b^6$ 

### Reteaching 5-1

1.  $\frac{4}{18} > \frac{3}{18}$  2.  $\frac{5}{8} < \frac{6}{8}$  3.  $-\frac{4}{6} > -\frac{5}{6}$ 4.  $-\frac{5}{18} < -\frac{4}{18}$  5.  $\frac{21}{36} < \frac{22}{36}$  6.  $\frac{39}{60} < \frac{44}{60}$ 7.  $-\frac{22}{40} = -\frac{22}{40}$  8.  $\frac{6}{25} > \frac{5}{25}$  9.  $\frac{15}{28} < \frac{16}{28}$ 10.  $\frac{35}{63} > \frac{33}{63}$  11.  $\frac{15}{51} = \frac{15}{51}$  12.  $-\frac{25}{60} > -\frac{26}{60}$ 

### Reteaching 5-2

**1.**  $0.636363..., 63.6363..., -0.636363..., 63, \frac{63}{99}, \frac{7}{11}$  **2.**  $0.83333..., 83.3333..., -8.3333..., 75, \frac{75}{90},$