



# Chapter Review



## Interactive Study Guide

See pages 21–24 for:

- Vocabulary Check
- Key Concept Check
- Problem Solving
- Reflect

### Lesson-by-Lesson Review

#### Lesson 1-1 A Plan for Problem Solving (pp. 2–5)

Use the four-step plan to solve each problem.

- Carlos traveled 347 miles to go to his cousins' house. It took him about 5.5 hours to drive there. Estimate his average speed in miles per hour.   
*Handwritten: 350, 360, 70*
- Julie walked 3 miles each day in March and April. How many miles did she walk altogether over this time?
- A restaurant is offering selected three-course meals for one price. Customers can choose from 2 appetizers, 3 main courses, and 2 desserts. How many different dinner combinations are available?
- There are 140 students going on a field trip. A maximum of 22 students can fit on each bus. How many buses will be needed for the field trip?

#### Example 1

Dana is tying 18 bows onto gift baskets. Each bow uses 4 feet of ribbon. How many feet of ribbon does Dana need to make all the bows?

**Understand** You know the number of bows and the length of ribbon for each bow. You need to find the total ribbon for all the bows.

**Plan** Multiply the number of bows by the length of ribbon for each bow.

**Solve**  $18 \times 4 = 72$

So, Dana needs 72 feet of ribbon in all.

**Check** Estimate.  $20 \times 4 = 80$ .

Since  $80 \approx 72$ , the answer is reasonable. ✓

*SPEED = DIST. / TIME (RATE)*

*350 / 5 = 70*

*360 / 6 = 60*

*3.*

*A = APPETIZERS*

*1A 2A*

*M = MAIN COURSE*

*1M 2M 3M*

*DESSERT*

*1D 2D*

*1A 1A 1A*

*1M 2M 3M*

*1D 1D 1D*

*1A 1A 1A*

*1M 2M 3M*

*2D 2D 2D*

#### Lesson 1-2 Words and Expressions (pp. 6–10)

Write a numerical expression for each verbal phrase.

- the total number of students, if there are nineteen in one class and thirteen in another
- the number of soccer players on each of five teams, if there are a total of thirty-five players

Evaluate each expression.

- $6(7) + 3$
- $4[(12 - 4) + 2]$
- $3[6 + (6 - 2)]$
- $9(2) + 8(7)$
- $10(4 \div 2)$
- $4[25 \div (2 + 3)]$

- Financial Literacy** Yu, Collin, and Sydney spent \$284 to make bracelets. They sold the bracelets for \$674. If they split the profits evenly, how much did each person earn?

#### Example 2

Write the phrase *the total number of postcards, if eight people each buy five* as a numerical expression.

**Phrase** the product of 8 and 5

**Expression**  $8 \cdot 5$

#### Example 3

Evaluate the expression  $3[(5 - 4) + 6]$ .

$$\begin{aligned} 3[(5 - 4) + 6] &= 3(1 + 6) && \text{Evaluate } (5 - 4). \\ &= 3(7) && 3(7) \text{ means } 3 \times 7. \\ &= 21 && \text{Multiply 3 and 7.} \end{aligned}$$

*( )*  
*[ ]*  
*{ }*

*12. 4[25 ÷ (2+3)]*  
*4[25 ÷ 5]*  
*4[5]*  
*20*

**Lesson 1-3 Variables and Expressions** (pp. 13–18)

14. Translate into an algebraic expression *the quotient of the number of points and three.*

Evaluate each expression if  $a = 4$ ,  $b = 8$ , and  $c = 11$ .

15.  $3a + b$

16.  $16 - c$

17.  $3a + 4b - c$

18.  $\frac{3b}{a} + ac$

19.  $12 + 3a + b$

20.  $6(a + b + c)$

21.  $3a - c$

22.  $2ab + ac$

23. There are 36 inches in a yard. Write an expression to find the number of yards in  $x$  inches.

**Example 4**

Evaluate  $x - 5 + 2y$  if  $x = 6$  and  $y = 4$ .

$$\begin{aligned} x - 5 + 2y &= 6 - 5 + 2(4) && \text{Replace } x \text{ with 6 and } y \text{ with 4.} \\ &= 6 - 5 + 8 && \text{Multiply 2 and 4.} \\ &= 1 + 8 && \text{Subtract 5 from 6.} \\ &= 9 && \text{Add 1 and 8.} \end{aligned}$$

$$\frac{x \text{ in}}{36} = \text{YD} \quad \frac{36 \text{ in}}{36} = 1 \text{ YD} \quad \frac{72 \text{ in}}{36} = 2 \text{ YD}$$

**Lesson 1-4 Properties of Numbers** (pp. 19–24)

Name the property shown by each statement.

24.  $12 \times 0 = 0$

25.  $(3 \cdot 5) \cdot 2 = 3 \cdot (5 \cdot 2)$

Simplify each expression.

26.  $3 \cdot (2 \cdot x)$

27.  $(5 + v) + 7$

28.  $10 \cdot (4 \cdot x)$

29.  $(2 + 3) + (4 + x)$

30.  $(7 + y) + 13$

31.  $1 \cdot (25 \cdot x)$

32. Gloria has 58 dolls. If she does not add any dolls to her collection, write a number sentence that represents the situation. Then name the property that is illustrated.

**Example 5**

Simplify  $(4 + x) + 6$ .

$$\begin{aligned} (4 + x) + 6 &= (x + 4) + 6 && \text{Commutative (+)} \\ &= x + (4 + 6) && \text{Associative (+)} \\ &= x + 10 && \text{Simplify.} \end{aligned}$$

**Lesson 1-5 Problem-Solving Strategies** (pp. 26–30)

Use a strategy to solve each problem.

33. Mia has 14 coins in her pocket that total \$1.10. What are the coins in her pocket?

34. Yanira is 3 years older than Tim and twice as old as Hannah. Tim is 2 years older than Hannah. How old are Yanira, Tim, and Hannah?

35. The sum of two consecutive even integers is 150. What are the two integers? *74 AND 76*

$$\frac{150}{2} = 75 \quad \begin{array}{r} 75 + 75 = 150 \\ -1 \quad +1 \\ \hline 74 + 76 = 150 \end{array}$$

**Example 6**

Tina bought twice as many pencils as Frank bought at the school store, and Joel bought 5 more pencils than Frank did. Altogether they bought 17 pencils. How many pencils did Frank buy?

Make a guess. Check your guess and revise.

Frank	Tina	Joel	Total	
2	$2(2) = 4$	$2 + 5 = 7$	13	too low
3	$2(3) = 6$	$3 + 5 = 8$	17	✓

Frank bought 3 pencils.



### Lesson 1-6 Ordered Pairs and Relations (pp. 31–36)

Express each relation as a table. Then determine the domain and range.

36.  $\{(2, 3), (2, 6), (2, 5)\}$
37.  $\{(1, 4), (2, 8), (3, 12), (4, 16)\}$
38.  $\{(3, 6), (4, 12), (5, 18)\}$
39.  $\{(1, 1), (2, 4), (3, 9), (4, 16)\}$
40. It costs \$2 per person to ride the Ferris wheel.
  - a. Make a table of ordered pairs in which the  $x$ -coordinate represents the number of people and the  $y$ -coordinate represents the cost for 4, 8, 12, and 16 people.
  - b. Graph the ordered pairs and then describe the graph.

#### Example 7

Express the relation  $\{(2, 1), (5, 6), (2, 7), (6, 1)\}$  as a table. Then determine the domain and range.

$x$	2	5	2	6
$y$	1	6	7	1

The domain is  $\{2, 5, 6\}$ , and the range is  $\{1, 6, 7\}$ .

### Lesson 1-7 Word, Equations, Tables, and Graphs (pp. 37–41)

41. Shanna downloaded 5 more songs than videos.
  - a. Write an equation that can be used to find the number of songs downloaded given the number of videos downloaded.
  - b. Complete the table for the number of songs downloaded when the number of videos downloaded is 2, 4, 6, and 8.

Number of Videos	Number of Songs
$v$	$s$
2	■ 7
4	■ 9
6	■ 11
8	■ 13

- c. Graph the ordered pairs for the relation.

$(2, 7)$   
 $(4, 9)$   
 $(6, 11)$   
 $(8, 13)$

#### Example 8

There are 3 apples for each horse.

- a. Write an equation to find the number of apples needed for any number of horses.

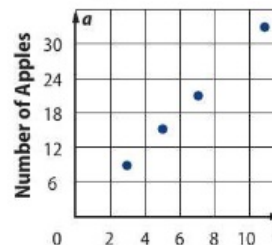
Let  $h$  represent the number of horses and let  $a$  represent the number of apples. The equation is  $a = 3h$ .

- b. Make a table for 3, 5, 7, and 11 horses.

Number of Horses	Number of Apples
$h$	$a$
3	9
5	15
7	21
11	33

- c. Graph the ordered pairs for the relation.

Apples for Horses



a.  
 $V = \text{VIDEOS}$   
 $S = \text{SONGS}$   
 $g = V + 5$