

# Solve Multi-Step Problems

Name: \_\_\_\_\_

## Prerequisite: Solve Two-Step Problems

Study the example showing how to use a model to solve a two-step word problem. Then solve problems 1–5.

### Example

Brian and his friends are doing a 200-piece jigsaw puzzle. Each of the 6 friends has placed 12 puzzle pieces. How many pieces have not been placed?

200	
$6 \times 12$	$p$
$(6 \times 12)$	+
72	+
	$p = 200$
	$p = 200$
	$p = 200 - 72$
	$p = 128$

128 pieces have not been placed.

- 1 Use estimation to check whether 128 is a reasonable answer in the example above.

$$p = 200 - 72$$

Round to the nearest ten.

$$p = \underline{\quad} - \underline{\quad}$$

Subtract the rounded numbers.  $\underline{\quad} = \underline{\quad} - \underline{\quad}$

$\underline{\quad}$  is close to 128 so 128 is a reasonable answer.

- 2 There are 8 students at each of 4 round tables in the cafeteria. There are 64 students at long tables. Use the bar model to write and solve an equation to find how many students there are in the cafeteria.

$v$	
$4 \times 8$	64

**Show your work.**

*Solution:* There are \_\_\_\_\_ in the cafeteria.

### Vocabulary

**reasonable** something that makes sense when the given facts are taken into account.

## Solve.

- 3 The table below shows the cost of admission tickets at a museum. Write and solve an equation to find the cost of tickets for 1 child and 2 adults.

	Child	Adult
Cost of ticket	\$6	\$11

**Show your work.**

*Solution:* \_\_\_\_\_

- 4 Liz is training for a swim meet. Her goal is to swim 100 laps. She swam 12 laps in the pool on each of 3 days. Write and solve an equation to find how many more laps Liz needs to swim to reach her goal.

**Show your work.**

*Solution:* \_\_\_\_\_

- 5 Paperbacks sell for \$2 and hardcover books sell for \$4 at the library book sale. The library made \$98 at the sale. There were 25 paperback books sold. Write and solve an equation to find how many hardcover books were sold.

**Show your work.**

*Solution:* \_\_\_\_\_



### Vocabulary

**equation** a number sentence that shows two expressions have equal value.

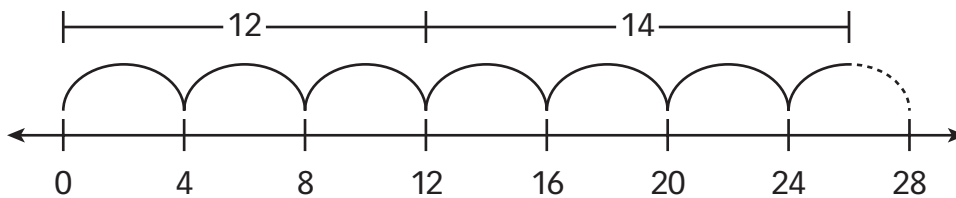
$$R = 6 \times 3$$

## Solve Multi-Step Problems

Study the example showing how to model a multi-step problem with a remainder. Then solve problems 1–5.

**Example**

Mrs. Murray has 12 students in one science class and 14 students in another. She wants to combine both classes to do group work. Each table in the science room can seat 4 students. How many tables does Mrs. Murray need?



Let  $T$  equal the number of tables needed.

$$\begin{aligned} T &= (12 + 14) \div 4 \\ &= 26 \div 4 \\ &= 6 \text{ R}2 \end{aligned}$$

6 R2 means:

- 6 tables with 4 students each
- 2 more students need another table

Mrs. Murray needs 7 tables.

- 1** Check the solution to the equation in the example.

\_\_\_\_\_ tables  $\times$  \_\_\_\_\_ students per table +  
 \_\_\_\_\_ students = \_\_\_\_\_ total students

- 2** Leticia earns \$8 each time she rakes the yard. She has earned \$24 so far. Write and solve an equation to show how many more times Leticia needs to rake the yard to earn enough to buy a music player that costs \$45.

**Show your work.**

*Solution:* \_\_\_\_\_

\_\_\_\_\_



### Vocabulary

**remainder** the amount left over that will not divide equally into the given number of groups.

$$26 \div 4 = 6 \text{ R}2$$

**equation** a mathematical sentence that uses an equal sign (=) to show that two expressions have the same value.

**Solve.**

- 3** Meghan found 15 pieces of sea glass on the beach. The next day she found 4 more pieces than she found the day before. Write and solve an equation to find how many pieces of sea glass she found altogether.

**Show your work.**

*Solution:* \_\_\_\_\_

- 4** The table shows ticket prices at a movie theater. Ticket sales to an afternoon show were \$146. There were 10 child tickets sold. Write and solve an equation to find how many adult tickets were sold.

	<b>Child</b>	<b>Adult</b>
Ticket price	\$5	\$12

**Show your work.**

*Solution:* \_\_\_\_\_

- 5** Ticket prices for 3-D movies are \$10 for a child and \$15 for an adult. One adult spent \$55 to take a group of children to the movies. Write and solve an equation to find how many children went to the movies.

**Show your work.**

*Solution:* \_\_\_\_\_

## Solve Multi-Step Problems

## Solve the problems.

- 1 Jensen bought 10 boxes of granola bars. Each box has 8 bars. He wants to share the bars with 6 soccer teams. Which equation can be used to find how many bars each team gets?

A  $b = (8 \times 10) - 6$       C  $b = (6 + 8) \div 10$   
 B  $b = (10 + 6) \div 8$       D  $b = (10 \times 8) \div 6$

What operation can you use to put the bars into equal-sized groups?



- 2 Solve the equation in problem 1 to find how many granola bars each team gets. Are bars left over?

**Show your work.**

Solution: \_\_\_\_\_

What does the remainder mean?



- 3 The community center used 4 recycling bins one week, twice as many the next week, 7 bins the third week, and 5 bins the last week of the month. Which equation shows how many bins were used for the month?

A  $4 + (2 \times 7) + 7 + 5 = 30$   
 B  $4 + (2 \times 4) + 7 + 5 = 24$   
 C  $(1 \times 4) + (2 \times 4) + (3 \times 7) + 5 = 34$   
 D  $4 + (4 \div 2) + 7 + 5 = 18$

Mia chose **A** as the correct answer. How did she get that answer?

\_\_\_\_\_

\_\_\_\_\_

Which numbers do you place in parentheses?



**Solve.**

- 4** The table shows the results of a bake sale. The cost of renting tables for the bake sale was \$100.

Write and solve an equation to show how much money the bake sale made.

Baked item	Number sold	Price
Cookies	90	\$1 each
Brownies	75	\$1 each
Crispy treats	60	\$2 each
Cupcakes	50	\$3 each

**Show your work.**

How do you show the cost of renting the tables in the equation?



*Solution:* \_\_\_\_\_

- 5** Look at the table in problem 4. If 10 fewer cookies and 10 more cupcakes were sold, how much would the bake sale have made?

**Show your work.**

Which numbers in the equation you wrote in problem 4 do you need to change?



*Solution:* \_\_\_\_\_