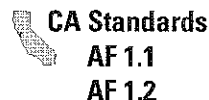


LESSON
5.1**Study Guide**

For use with pages 247-251

**GOAL**

Write expressions.

EXAMPLE 1 **Translating Verbal Phrases****Verbal Phrase****Algebraic Expression**

A number increased by 5

$n + 5$

17 less than a number

$n - 17$

Half of a number

$\frac{1}{2}n$

A number divided by 3

$n \div 3$

Exercises for Example 1

Write the phrase as an algebraic expression. Let x represent the variable.

- | | |
|------------------------------------|--------------------------------|
| 1. A number increased by 9 | 2. 7 times a number |
| 3. The quotient of 64 and a number | 4. A number subtracted from 12 |

EXAMPLE 2 **Writing an Algebraic Expression**

You are traveling on an airplane. After traveling 45 miles, the airplane speed changes to 550 miles per hour.

- Write an expression for the total distance after traveling for h hours at 550 miles per hour.
- What is the total distance if you travel for 3 hours at 550 miles per hour?

Solution

- Write a verbal model.

Original distance	+	Speed	·	Time
45	+	550	·	h

Answer: An expression for the total distance is $45 + 550h$.

- Substitute for h to find the total distance traveled.

$$45 + 550(3) = 1695 \quad \text{Substitute 3 for } h.$$

Answer: You travel a total of 1695 miles.

LESSON
5.1**Study Guide** *continued*

For use with pages 247–251

Exercise for Example 2
.....

5. You buy a pair of sandals for \$24 and T-shirts for \$8 each.
- Write an algebraic expression for the total cost to buy a pair of sandals and x T-shirts.
 - What is the total cost if you buy 5 T-shirts?

EXAMPLE 3 **Writing an Expression with Two Variables**

At a basketball tournament, the price of an adult ticket is \$3 and the price of a child ticket is \$2.

- Write an expression for the total cost of tickets for a adults and c children.
- What is the total cost for 4 adults and 7 children?

Solution

- a. Write a verbal model.

Price of adult ticket	•	Number of adults	+	Price of child ticket	•	Number of children
3	•	a	+	2	•	c

Answer: An expression for the total cost is $3a + 2c$.

- b. Substitute for a and c to find the total cost for 4 adults and 7 children.

$3a + 2c = 3(4) + 2(7)$	Substitute 4 for a and 7 for c .
$= 12 + 14$	Multiply.
$= 26$	Add.

Answer: The total cost is \$26.

Exercise for Example 3
.....

6. An electronics store is having a clearance sale. All video games are marked down to \$20 each and all CDs are marked down to \$9 each. Write an expression for the total cost of x video games and y CDs. Then find the total cost for 3 video games and 5 CDs.