Exercise 8

Writing Algebraic Expressions

Algebraic expressions can be used to represent word expressions.
Any letter can be used to represent a number that varies or changes.
Letters that represent numbers that change or vary are called variables.

WORD EXPRESSION	ALGEBRAIC EXPRESSION
eight plus a number	$8 + n$
six subtracted from a number	$x - 6$
five times a number	$5 \times a$, or $5 \cdot a$, or $5a$
a number divided by seven	$z \div 7$, or $\frac{z}{7}$

Write an algebraic expression for each word expression. Use a variable.

1. the product of a number and 6

   _____

2. the sum of 5 and a number

   _____

3. seventeen less than a number

   _____

4. the quotient of a number and 4

   _____

5. 7 more than a number

   _____

6. 14 subtracted from a number

   _____

7. a number decreased by 3

   _____

8. eleven increased by a number

   _____

Solve.

9. A group was divided into five teams to raise money for the Heart Fund. What algebraic expression can you write to show how many were on each team?

   _____

Directions: Choose the one best answer to each item. Circle the number of the correct answer.

10. Lea's new job pays twice as much as her old one. Which algebraic expression shows how much her new job pays, if x represents Lea's pay at her old job?

(1) $x + 2$
(2) $2 \div x$
(3) $2x$
(4) $x \div 2$
(5) $2x \div x$

11. Cindy wants to make half a recipe. Which algebraic expression shows how much sugar to use, if y represents the amount of sugar in the original recipe?

(1) y
(2) $2y$
(3) $y \div 2$
(4) $2y \div 2$
(5) $y + 2$

12. Seven new employees were hired at the company. Which algebraic expression shows how many employees are in the company, if m represents the number in the company before the 7 were hired?

(1) $m - 7$
(2) $m + 7$
(3) $7m$
(4) $m \div 7$
(5) $m + m + 7$

13. Bill scored 15 points less than Jason. Which algebraic expression shows how many points Bill scored?

(1) $J - 15$
(2) $J + 15$
(3) $15J$
(4) $J \div 15$
(5) $2J + 15$

14. Carl receives d dollars for driving to the airport. He has to pay $10 for gas. Which expression shows his profit?

(1) $10d$
(2) $d \div 10$
(3) $d + 10$
(4) $d - 10$
(5) $2d - 10$

15. Gail works 40 hours per week. Which algebraic expression shows how much she earns, if z represents the amount she makes per hour?

(1) $7z$
(2) $z + 40$
(3) $z - 40$
(4) $40z$
(5) $z \div 40$

16. Which expression shows the number of feet in a yard, if y represents the number of inches in a yard?

(1) $\frac{y}{3}$
(2) $y \div 12$
(3) $y \div 36$
(4) $3y$
(5) $y + 12$

17. A hamburger has twice the calories of a small order of fries. Which expression shows the total number of calories in the two foods, if x represents the calories in the small order of fries?

(1) $2x + x$
(2) $2x$
(3) $x \div 2$
(4) $4x$
(5) none of the above