

## ALGEBRA 1

Name KEY

## 1-1 PRACTICE: VARIABLES and EXPRESSIONS

1. Define each of the following:

Variable a letter that represents a numberConstant a value that never changesExpression a mixture of variable and/or constants; does not = anythingEquation a math sentence that uses an = sign

2. Write an algebraic expression for each phrase.

a. The product of 9 and a number  $t$ .

$$9t$$

b. The difference of a number  $x$  and 5.

$$x - 5$$

c. Twice the sum of a number  $p$  and 3.

$$2(p + 3)$$

d. The quotient of 12 and the product  $5m$ .

$$\frac{12}{5m}$$

e. Four less the product of 8 and  $y$ .

$$4 - 8y$$

f. Four less than the product of 8 and  $y$ .

$$8y - 4$$

3. Write a word phrase for each algebraic expression. (Answers may vary.)

a.  $\frac{2y}{5}$

The quotient of  $2y$  and 5.

b.  $28 + p$

The sum of 28 and a number  $p$ .

c.  $2(5 - n)$

Twice the difference of 5 and a number  $n$ .

4. While on vacation, you rent a bicycle. You pay \$9 for each hour you use it. It costs \$5 to rent a helmet while you use the bicycle.

Complete the table to represent the given situation.

Number of Hours	Rental Cost
1	$\$9(1) + \$5$
2	$\$9(2) + \$5$
3	$\$9(3) + \$5$
4	$\$9(4) + \$5$
h	$\$9h + \$5$

5. At a shoe store, a salesperson earns a weekly salary of \$150. A salesperson is also paid \$2.00 for each pair of shoes he or she sells during the week.

Complete the table to represent the given situation.

Pairs of Shoes Sold	Total Earned
5	$\$150 + (\$2)(5)$
10	$\$150 + (\$2)(10)$
12	$\$150 + (\$2)(12)$
15	$\$150 + (\$2)(15)$
n	$\$150 + \$2n$

6. You and some friends are going to a museum. Each ticket costs \$4.50.

- a. If 5 friends go to the museum, determine the total cost. (Show work!)

$$5(\$4.50) = \$22.50$$

- b. If m friends go to the museum, write an expression that gives the cost of buying m tickets.

$$\$4.50m$$

7. **Error Analysis.** A student writes the word phrase "the quotient of n and 5" to describe the expression  $\frac{5}{n}$ . Correct the student's error and describe the expression.

$\frac{5}{n}$  should be described as "the quotient of 5 and n."