

Name _____

Variables and Expressions

Practice
6-1

For questions 1 through 4, use a variable to write an algebraic expression that represents the word phrase.

1. a number of apples divided into 12 baskets

2. 5 more than s

3. three times the cost for one hat

4. nine fewer than the total number of people

For 5 through 7, translate each algebraic expression into words.

5. $3 + w$

6. $8x$

7. $40 - p$

8. Write two different word phrases for the expression $\frac{30}{t}$.

9. **Number Sense** Do $5 + x$ and $x + 5$ represent the same expression? Explain.

10. **Algebra** Dan is 12 in. taller than Jay. Use x for Jay's height. Which expression shows Dan's height?

A $x + 12$

B $x - 12$

C $12x$

D $\frac{12}{x}$

11. **Explain It** Explain what the expression $6x$ means.

Patterns and Expressions

Name _____

In 1 through 4, evaluate each expression for $n = 3$ and $n = 8$.

1. $n + 10$

2. $\frac{n}{24}$

3. $n \times 5$

4. $36 - n$

Complete each table.

n	$0.9 + n$
0.5	
0.2	
0.15	
0.1	

5.

n	$96 \div n$
1	
2	
3	
4	

6.

7. **Write a Problem** Write a situation that can be represented by the algebraic expression $\$3.50t$.

8. **Algebra** If $a = 10$, which of the following is the correct solution for $a \times 0.1$?

- A 0.01 B 0.1 C 1 D 10

9. **Explain It** Write one numerical expression and one algebraic expression. Then explain what the difference between a numerical and algebraic expression is.

More Patterns and Expressions

1. Write an algebraic expression to represent the sum of a number (denoted n) with a number (denoted 15).

2. Write an algebraic expression to represent the sum of a number of groups of n with 15 .

Evaluate each expression for $n = 2$ and $n = 5$.

$15 + n$
 $15n$

$15 + n$
 $15n$

Complete each table.

$n = 1$	$15 + n$
$n = 2$	$15n$
$n = 3$	$15 + n$
$n = 4$	$15n$
$n = 5$	$15 + n$
$n = 6$	$15n$

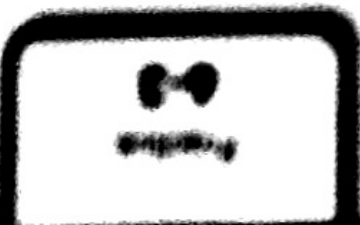
$n = 1$	$15 + n$
$n = 2$	$15n$
$n = 3$	$15 + n$
$n = 4$	$15n$
$n = 5$	$15 + n$
$n = 6$	$15n$

3. Explain in either a written way to write the expression $15n$ or write in another way to write the expression $15 + n$.

4. Which is the correct product of $n = 15$ and $n = 15$?

- A 30.75
- B 22.75
- C 225
- D 22.75

5. Write a pattern with a number that can be represented by the algebraic expression $15.75n$.



Distributive Property

Name _____

Use the Distributive Property to multiply mentally.

1. $5 \times 607 =$ _____

3. $7 \times 420 =$ _____

5. $44 \times 60 =$ _____

7. $45 \times 280 =$ _____

2. $16 \times 102 =$ _____

4. $265 \times 5 =$ _____

6. $220 \times 19 =$ _____

8. $341 \times 32 =$ _____

9. **Number Sense** Fill in the blanks to show how the Distributive Property can be used to find 10×147 .

$$10 \times (150 - 3) = (10 \times 150) - (\quad) \times 3 =$$

$$1,500 - \quad = \quad$$

10. In 1990, there were 1,133 tornadoes in the U.S. If there were the same number of tornadoes for 10 years in a row, what would be the 10-year total?

11. There were 1,071 tornadoes in the U.S. in 2000. What is the number of tornadoes multiplied by 20?

12. If $4 \times 312 = 4 \times 300 + n$, which is the value of n ?
 A 4 B 12 C 48 D 300

13. **Explain It** Margaret said that she used the Distributive Property to solve 4×444 . Is her answer shown below correct? Explain.

$$4 \times 444 = 4 \times (400 + 40 + 4) =$$

$$(4 \times 400) + (4 \times 40) + (4 \times 4) =$$

$$1,600 + 160 + 16 = 1,776$$

Order of Operations

Name _____

6-5
Practice

Use the order of operations to evaluate each expression.

1. $4 \times 4 + 3 =$ _____

2. $3 + 6 \times 2 \div 3 =$ _____

3. $24 - (8 \div 2) + 6 =$ _____

4. $(15 - 11) \times (25 \div 5) =$ _____

5. $26 - 4 \times 5 + 2 =$ _____

6. $15 \times (7 - 7) + (5 \times 2) =$ _____

7. $(8 \div 4) \times (7 \times 0) =$ _____

8. $5 \times (6 - 3) + 10 \div (8 - 3) =$ _____

9. **Explain It** Which is a true statement, $5 \times 4 + 1 = 25$ or $3 + 7 \times 2 = 17$? Explain your answer.

Insert parentheses to make each statement true.

10. $25 \div 5 - 4 = 25$

11. $7 \times 4 - 4 \div 2 = 26$

12. $3 + 5 \times 2 - 10 = 6$

13. **Strategy Practice** Insert parentheses in the expression $6 + 10 \times 2$ so that:

a. the expression equals 32.

b. the expression equals $(12 + 1) \times 2$.

14. Solve $(25 - 7) \times 2 \div 4 + 2$.

A 18 B 11 C 6 D 5

15. Write two order-of-operation problems. Then trade with a classmate and solve the problems.

Problem Solving: Act It Out and Use Reasoning

Name _____

- Christina collects stamps. She has 47 stamps in all. She has 20 stamps from Europe. The number of African stamps is 2 times the number of Asian stamps. How many stamps from each of these three continents does she have?

2. **Write a Problem** Write a problem that can be solved by acting it out and using reasoning.

- A public pool opened for the summer. A total of 246 people came swimming over the first 3 days it was open. On the first day, 79 came to swim. On the second day, 104 people swam. How many people swam on the third day?

- Marissa earned \$480 in the summer. If she earned \$40 a week, how many weeks did she work?
 A 48 B 12 C 10 D 9
- Explain It** How could you use cubes to act out a problem?
