Math 6

Name_____

Ch. 2/4 Review

Date_____

Evaluate each expression.

1) $3+2\times2-1$

$3+4-1$

$7-1$

6

2) $(4-2)\times6\times5$

$2\times6\times5$

12×5

60

3) $5\times3+1^3$

$5\times3+1$

$15+1$

16

4) $12\div(5-2+1)$

$12\div(3+1)$

$12\div4$

3

5) $(6\times2)\div(1+6-3)$

$12\div(1+6-3)$

$12\div(7-3)$

$12\div4$

3

6) $(14-2)\div(1+4-1)$

$12\div(1+4-1)$

$12\div(5-1)$

$12\div4$

3

7) $(14-4)\div(4+4-3)$

$10\div(4+4-3)$

$10\div(8-3)$

$10\div5$

2

8) $5^2-5-3\times3$

$25-5-3\times3$

$25-5-9$

$20-9$

11

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LESSON 2-1

Review for Mastery

Properties and Mental Math

Commutative Property

Changing the order of addends does not change the sum.

$21 + 13 = 13 + 21$

Changing the order of factors does not change the product.

$5 \times 7 = 7 \times 5$

Associative Property

Changing the grouping of addends does not change the sum.

$(3 + 8) + 4 = 3 + (8 + 4)$

Changing the grouping of factors does not change the product.

$2 \times (7 \times 4) = (2 \times 7) \times 4$

Distributive Property

When you multiply a number by a sum, you can

- Find the sum and then multiply. $3 \times (8 + 4) = 3 \times 12 = 36$

or

- Multiply the number by each addend and then find the sum.
  $3 \times (8 + 4) = (3 \times 8) + (3 \times 4) = 24 + 12 = 36$

Identify the property shown.

1. $3 \times (2 \times 6) = (3 \times 2) \times 6$

   Associative Property of Multh.

2. $7 + 18 = 18 + 7$

   Commutative Property of Addition

3. $4 \times (8 + 5) = (4 \times 8) + (4 \times 5)$

   Distributive Property

4. $11 \times 8 = 8 \times 11$

   Commutative Property of Multiplicatio

5. $3 \times (8 + 4) = (3 \times 8) + (3 \times 4)$

   Distributive Property

6. $(3 + 8) + 4 = 3 + (8 + 4)$

   Associative Property of Addition

Identify the property shown and the missing number in each equation.

7. $9 + 16 = y + 9$

   CPA ; $y = 16$

8. $4 \times (3 \times 2) = (4 \times n) \times 2$

   APA ; $n = 3$

9. $3 \times (11 + 4) = (3 \times a) + (3 \times 4)$

   Distributive ; $a = 11$

10. $6 \times (9 + 14) = (b \times 9) + (b \times 14)$

    Distributive ; $b = 6$

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LESSON 2-1

Practice A

Properties and Mental Math

Choose the letter of the equation that shows the given property.

1. Associative Property
   - A $2 + 3 = 3 + 2$
   - B $7 \times 8 = 7 \times (4 + 4)$
   - (C) $8 \times (6 \times 5) = (8 \times 6) \times 5$
   - D $9 \times (2 + 4) = (9 \times 2) + (9 \times 4)$

2. Distributive Property
   - F $3 \times (6 \times 11) = (3 \times 6) \times 11$
   - G $75 + 15 = 15 + 75$
   - H $9 \times 8 = 8 \times 9$
   - (I) $12 \times (4 + 7) = (12 \times 4) + (12 \times 7)$

3. Commutative Property
   - A $3 \times (7 + 8) = 3 \times 15$
   - B $(10 + 4) + 3 = 10 + (4 + 3)$
   - C $(9 + 2) \times 5 = (9 \times 5) + (2 \times 5)$
   - (D) $6 \times 5 = 5 \times 6$

4. Associative Property
   - F $20 \times (3 + 3) = (20 \times 3) + (20 \times 3)$
   - (G) $4 + (3 + 9) = (4 + 3) + 9$
   - H $(10 + 5) \times 7 = 15 \times 7$
   - I $16 \times 8 = 8 \times 16$

Rewrite each expression using the named property.

5. $8 + 12$; Commutative Property
   $12 + 8$

6. $(9 \times 6) \times 4$; Associative Property
   $9 \times (6 \times 4)$

7. $3 \times (5 + 2)$; Distributive Property
   $(3 \times 5) + (3 \times 2)$

8. $2 \times (4 + 5)$; Distributive Property
   $(2 \cdot 4) + (2 \cdot 5)$

Find each sum or product.

9. $7 + 15 + 3 + 5$
   30

10. $7 \times 2 \times 5$
    70

11. $4 \times 3 \times 5$
    60

Multiply using the Distributive Property.

12. 4×38
    152

13. 6×53
    318

14. 8×42
    336

15. Sue has \$4, Tom has \$11, Brian has \$6, and Anita has \$9. Use mental math to find how much money they have altogether.
    $11 + 9 + 4 + 6 = \$30$

16. Each minibus seats 14 people, and the school owns 5 minibuses. Use mental math to find how many students can ride in the school's minibuses at the same time.
    $5 \times 14 = (5 \times 10) + (5 \times 4) = 70$ students

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LESSON 2-2

Practice A

Variables and Expressions

Circle the letter of the correct answer.

1. Which of the following is an algebraic expression?

   A $4 + 13$

   B $10 \bullet (3 - 2)$

   C $15 \div 5$

   (D) $9 - n$

2. What is the variable in the expression $(16 + a) \bullet 5 - 4$?

   F 16

   (G) a

   H 5

   I n

3. Which of these expressions is a way to rewrite the algebraic expression $n \div 3$?

   (A) $\frac{n}{3}$

   B $n \bullet 3$

   C $3n$

   D $\frac{3}{n}$

4. Which of these expressions is not a way to rewrite the algebraic expression $n \bullet 4$?

   F $n(4)$

   G $n \bullet 4$

   (H) $\frac{4}{n}$

   I $4n$

Evaluate each expression to find the missing values in the tables.

5.

n	$n + 3$
1	4
2	5
5	8
7	10
10	13

6.

n	$n \bullet 2^2$
2	8
3	12
5	20
7	28
8	32

7. If $x = 3$, what is the value of the expression $6 \div x$?

   2

8. If $x = 2$, what is the value of the expression $9 - x$?

   7

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LESSON 2-2

Review for Mastery

Variables and Expressions

A variable is a letter or a symbol that stands for a number that can change. A constant is an amount that does not change.

A mathematical phrase that contains at least one variable is an algebraic expression. In the algebraic expression $x + 5$, x is a variable and 5 is a constant.

When you evaluate an algebraic expression, substitute a number for the variable and then find the value.

To evaluate the algebraic expression $m - 8$ for $m = 12$, first replace the variable m in the expression with 12.

$m - 8$
$12 - 8$

Then find the value of the expression.

$12 - 8 = 4$

The value of $m - 8$ is 4 when $m = 12$.

Evaluate each expression for the given value of the variable.

1. $x + 5$, for $x = 6$ — 11
2. $3p$, for $p = 5$ — 15
3. $z \div 4$, for $z = 24$ — 6
4. $w - 7$, for $w = 15$ — 8

To find the missing values in a table, use the given values of the variable.

x	$4x$
3	12
4	16
5	20

Think: $x = 3$, so $4x = 4 \cdot 3 = 12$
Think: $x = 4$, so $4x = 4 \cdot 4 = 16$
Think: $x = 5$, so $4x = 4 \cdot 5 = 20$

Evaluate each expression to find the missing values in the tables.

5.

x	$x+7$
3	10
5	12
7	14

6.

y	$y-2$
9	7
10	8
14	12

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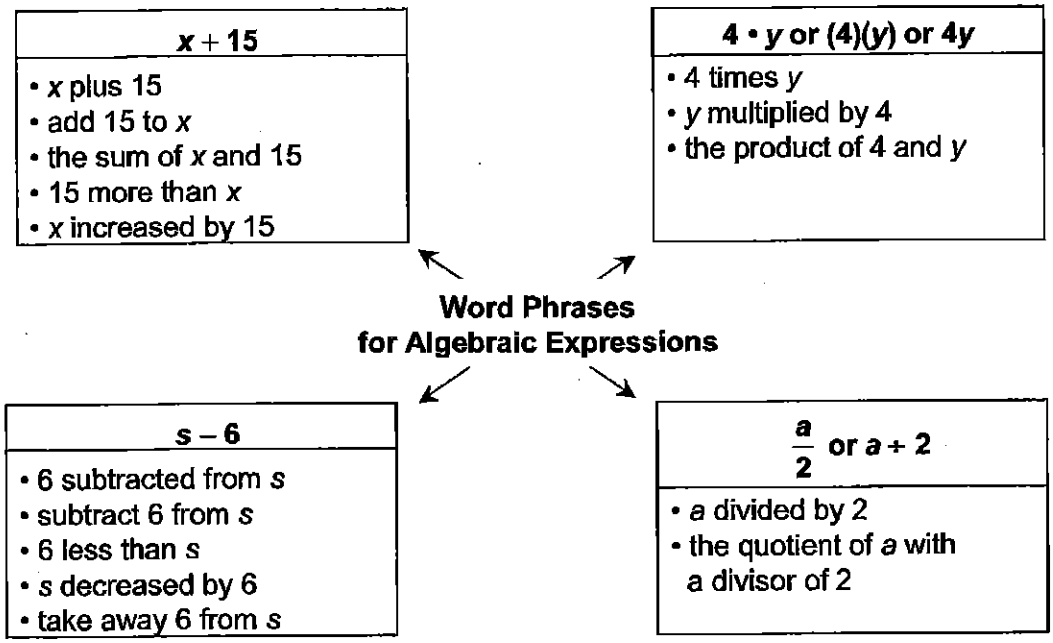
LESSON 2-3

Reading Strategies

Use a Visual Map

Identifying word phrases for different operations can help you write algebraic expressions. This visual map shows the four different operations with key word phrases.



Write a word phrase for each algebraic expression.

1. $t - 8$ Eight less than t
2. $\frac{n}{6}$ n divided by 6
3. $5w$ Five times w
4. $z + 12$ the sum of z and 12

Write an algebraic expression for each word phrase.

5. the product of x and 12 12x
6. m decreased by 5 m-5
7. the quotient of p with a divisor of 3 p÷3
8. 25 more than r 25 +r

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LESSON 2-3

Practice A

Translating Between Words and Math

Circle the letter of the correct answer.

1. Which of the following is the solution to an addition problem?
   - A product
   - (B) sum
   - C plus
   - D add

2. Which of the following is the solution to a subtraction problem?
   - F minus
   - G times
   - (H) difference
   - I less

3. Which word phrase represents the following expression: $5 \cdot 3$?
   - (A) the product of 5 and 3
   - B 5 less than 3
   - C the quotient of 5 and 3
   - D the sum of 5 and 3

4. Which word phrase represents the following expression: $14 \div n$?
   - F the difference of 14 and n
   - G 14 more than n
   - H take away n from 14
   - (I) the quotient of 14 and n

Match each situation to its algebraic expression below.

A. $8 \div x$ B. $8x$ C. $8 - x$ D. $x + 8$ E. $x - 8$ F. $x \div 8$

5. 8 take away x C
6. x divided by 8 F
7. the product of 8 and x B
8. the quotient of 8 and x A
9. 8 more than x D
10. x decreased by 8 E

11. Lily bought 14 beads and lost some of them. This situation is modeled by the expression $14 - x$. What does x represent in the expression?

    The lost beads

12. The pet store put the same number of hamsters in 6 cages. This situation is modeled by the expression $6n$. What does n represent?

    The number of hamsters

Solve and check each equation. Remember to show the inverse operation on both sides.

9) $8 + x = 12$

$-8 \quad -8$

$x = 4$

Check: $8 + x = 12$

$8 + 4 = 12$

$12 = 12$

10) $\frac{10}{6} = \frac{x}{10} \cdot 10$

$60 = x$

Check: $6 = \frac{x}{10}$

$6 = \frac{60}{10}$

$6 = 6$

11) $5 + r = 5$

$-5 \quad -5$

$r = 0$

Check: $5 + r = 5$

$5 + 0 = 5$

$5 = 5$

12) $m - 5 = 1$

$+5 \quad +5$

$m = 6$

Check: $m - 5 = 1$

$6 - 5 = 1$

$1 = 1$

13) $\frac{3x}{3} = \frac{15}{3}$

$x = 5$

Check: $3x = 15$

$3(5) = 15$

$15 = 15$

14) $\frac{2x}{2} = \frac{2}{2}$

$x = 1$

Check: $2x = 2$

$2(1) = 2$

$2 = 2$

15) $a + 5 = 15$

$-5 \quad -5$

$a = 10$

Check: $a + 5 = 15$

$10 + 5 = 15$

$15 = 15$

16) $\frac{a}{3} = 10$

$\times 3 \quad \times 3$

$a = 30$

Check: $\frac{a}{3} = 10$

$\frac{30}{3} = 10$

$10 = 10$

17) $\frac{54}{9} = \frac{9x}{9}$

$6 = x$

Check: $54 = 9x$

$54 = 9(6)$

$54 = 54$

18) $x + 6 = 13$

$-6 \quad -6$

$x = 7$

Check: $x + 6 = 13$

$7 + 6 = 13$

$13 = 13$