

Vocabulary

Review

1. Circle the *property* of addition illustrated by 7 + 0 = 7.

Associative Property

Commutative Property

Identity Property

Zero Property

2. Circle the *property* of multiplication illustrated by $4 \cdot 0 = 0$.

Associative Property

Commutative Property

Identity Property

Zero Property

3. Circle the *property* of addition that is illustrated by (63 + 9) + 1 = 63 + (9 + 1).

Associative Property

Commutative Property

Identity Property

4. Circle the *property* of multiplication that is illustrated by $52 \cdot (-1) = -52$.

Identity Property

Zero Property

Property of -1

Vocabulary Builder

distribute (verb) dih strib yoot

Other Word Forms: distributive (adjective), distribution (noun)

Definition: To **distribute** means to give out or hand out.

 $7(3+6) = 7 \cdot 3 + 7 \cdot 6$ The factor 7 is **distributed** to the 3 and the 6.

Use Your Vocabulary

Complete each sentence with distribute, distribution, or distributed.

- **5.** The teacher <u>?</u> a marked test to each student in the class.
- **6.** The $\underline{\ ?}$ of tests grades shows that there are 12 A's, 10 B's, and 8 C's.
- **7.** After reviewing the test scores, the teacher will <u>?</u> tonight's homework.

Property Distributive Property

8. Complete the table.

Algebra Let <i>a</i> , <i>b</i> , and <i>c</i> be real numbers.	Example
a(b+c)=ab+ac	3(10 + 4) = 3 • + 3 •
(b+c)a=ba+ca	$(5+3)7=5\cdot$ + 3 ·
a(b-c)=ab-ac	$9(8-2)=9 \cdot \boxed{} -9 \cdot \boxed{}$
(b-c)a = ba-ca	$(28 - 6)4 = 28 \cdot $



Problem 1 Simplifying Expressions

Got It? What is the simplified form of 5(x + 7)?

9. Circle how you read the expression 5(x + 7).

5 times x plus 7

5 times the quantity *x* plus 7

10. To simplify 5(x + 7), which number do you distribute? How do you know?

11. Finish simplifying the expression.

$$5(x+7) = 5 \cdot \boxed{ } + \boxed{ } \cdot 7$$

Got lt? What is the simplified form of $12(3 - \frac{1}{6}t)$?

12. Complete the steps to simplify the expression.

$$12(3 - \frac{1}{6}t) = \boxed{ \cdot 3 - \boxed{ \cdot \frac{1}{6}t}}$$

$$= \boxed{ - \frac{}{6} \cdot t}$$

$$= \boxed{ - \cdot t}$$



Problem 2 Rewriting Fraction Expressions

Got lt? What sum or difference is equivalent to $\frac{4x-16}{3}$?

13. Recall that a fraction $\frac{a}{b}$ can be written as $\frac{1}{b} \cdot a$.

So, $\frac{4x}{3}$ can be written as -4x.

14. Now complete the steps to find an expression equivalent to $\frac{4x-16}{3}$.

The Multiplication Property of -1 states that $-1 \cdot x = -x$. To simplify an expression such as -(x + 6), you can rewrite the expression as -1(x + 6).



Problem 3 Using the Multiplication Property of -1

Got It? What is the simplified form of -(a + 5)?

15. Underline the correct word to complete the sentence.

A negative sign in front of the parentheses means that the entire expression inside the parentheses is the same / opposite.

16. Simplify -(a + 5) by completing each step.

-(a + 5) = - · (a + 5) Multiplication Property of -1 = ()(a) + ()(5) Distributive Property = Simplify.



Problem 4 Using the Distributive Property for Mental Math

Got lt? Julia commutes to work on the train 4 times each week. A round-trip ticket costs \$7.25. What is her weekly cost for tickets? Use mental math.

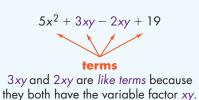
17. The expression $4 \cdot 7.25$ is simplified below using steps that could be used to do the problem mentally. Complete the missing parts.

18. The weekly cost for her tickets is \$.

Circle the variable factors in each expression. Then circle Yes if they are like terms or No if they are not.

19.
$$3x^2 + 5x^2$$

20.
$$z^2w - zw^2$$





Problem 5 Combining Like Terms

Got It? What is the simplified form of 3y - y?

21. Are the terms 3y and -y *like terms*?

Yes / No

Yes / No

22. Use the Distributive Property to write 3y - y as a product. Then simplify.



Lesson Check • Do you UNDERSTAND?

Reasoning Is each expression in simplified form? Justify your answer.

$$4xy^3 + 5x^3y$$

$$-(y-1)$$

$$5x^2 + 12xy - 3yx$$

23. Does $4xy^3 + 5x^3y$ have any like terms?

Yes / No

24. Can the -1 in front of -(y-1) be distributed?

Yes / No

25. Can the last term of $5x^2 + 12xy - 3yx$ be written as 3xy?

Yes / No

Is the expression simplified?

Simplify the expression.

Simplify the expression.



Math Success

Yes / No

Check off the vocabulary words that you understand.

- Distributive Property
- term
- like terms

Rate how well you can use the Distributive Property.

Need to review



