Lesson 6-8 · Session 1

Using Properties to Rewrite Expressions

Name _____ Date _____ Period _____

Maryland Standard 6.AT.7 · Learning target — I can use the distributive property and like terms to rewrite an expression in simplest form.

Show a model, calculation, or explanation. Answer every part and label units when needed.

Exercises 1–12 earn 1 point for a correct response and 1 for supporting work. Spiral Review and Test Practice earn 1 point each.

Learn from a model

REMEMBER

- The distributive property: a(b + c) = ab + ac.
- You can use the distributive property and GCF to rewrite expressions in different equivalent forms.
- Watch out — 6(y + 3) is not 6y + 3; the 6 must reach the 3 as well.
- Check it — substitute one value into both the original and the simplified form; they must match.

WORKED EXAMPLE

Rewriting an Expression with Properties Write an expression equivalent to 6(y + 3) + 9y in simplest form.

Step 1 Distribute the 6 to each term inside. 6(y + 3) = 6y + 18

Step 2 Rewrite the whole expression. 6y + 18 + 9y

Step 3 Reorder so like terms sit together. 6y + 9y + 18

Step 4 Combine like terms. 15y + 18

Answer 6(y + 3) + 9y is equivalent to 15y + 18.

Practice

1. Use the distributive property to rewrite: 5(x + 3). _____

Answer _____

SHOW YOUR THINKING

2. Use the distributive property to rewrite: 6(2x − 1). _____

Answer _____

SHOW YOUR THINKING

3. Rewrite 3x + 3y using the distributive property (factor out the common factor).

Answer _____

SHOW YOUR THINKING

4. Use the Distributive Property to rewrite each expression.

a. 7(x + 4) = _____
b. 3(2y + 5) = _____
c. 9(m − 2) = _____
d. 4(3k + 6) = _____
e. 2(a + b) = _____

Answer _____

SHOW YOUR THINKING

5. Expand and Combine. Rewrite the expression 6(t + 5) + 2t in simplest form.

Answer _____

SHOW YOUR THINKING

6. Rewrite the Cost. A club writes its cost as 4(s + 7) + 6s, where s is the number of students. Write an equivalent expression in simplest form, then check both forms with s = 3.

Answer _____

SHOW YOUR THINKING

7. Factor Out. Rewrite the expression 10c + 10d using the Distributive Property, then name the factor the two terms share.

Answer _____

RECORD YOUR RESPONSE

8. Write two different expressions that are equivalent to 6y + 24. Name the property you used for each one.

Answer _____

RECORD YOUR RESPONSE

9. Rewrite 8(m + 2) in simplest form.

Answer _____ simplest form

SHOW YOUR THINKING

10. Simplify 5(k + 3) + 2k.

Answer _____ simplest form

SHOW YOUR THINKING

11. Two Steps. Simplify 4(c + 2) + 3(c + 5).

Answer _____ simplest form

SHOW YOUR THINKING

12. Find the Mistake. Ty wrote 5(x + 2) = 5x + 2. Explain the mistake.

Answer _____ the mistake and the answer

EXPLAIN WITH MATHEMATICAL EVIDENCE

Spiral review

13. From Lesson 6-7 Session 2. Find the LCM of 3 and 8.

Answer _____

SHOW YOUR THINKING

14. From Lesson 6-6 Session 1. Simplify 15p − 6p + 4.

Answer _____

SHOW YOUR THINKING

15. From Lesson 5-5 Session 1. A prism is 2 cm by 9 cm by 3 cm. Find its volume.

Answer _____

SHOW YOUR THINKING

Test practice

16. Distribute 9(t + 3).

□ A. 9t + 27	□ B. 9t + 3
□ C. t + 27	□ D. 12t

17. Simplify 2(x + 6) + 3x.

□ A. 5x + 6	□ B. 5x + 12
□ C. 2x + 12	□ D. 11x

18. The property used to remove parentheses here is the —

□ A. identity property
□ B. commutative property
□ C. distributive property
□ D. zero property

Check and revise

CHECK YOUR MATHEMATICS

Testing one value cannot prove equivalence for every input; a mismatch can disprove it.

Every part answered / Work shown / Units labeled when needed

HOW DID IT GO?

I can do this:
Independently / With a hint / With help

Question to revisit: _____

One correction or question I want to discuss: _____

Check one result with a model, an inverse operation, or substitution. Explain why the values agree.
Sentence Frame: "I know this because..."