

1-5 Study Guide

The Distributive Property

Simplify Expressions A term is a number, a variable, or a product or quotient of numbers and variables. Like terms are terms that contain the same variables, with corresponding variables having the same powers. The Distributive Property and properties of equalities can be used to simplify expressions. An expression is in **simplest form** if it is replaced by an **equivalent** expression with no like terms or parentheses.

ExampleSimplify $4(a^2 + 3ab) - ab$.

$$4(a^2 + 3ab) - ab = 4(a^2 + 3ab) - 1ab$$

Multiplicative Identity

$$= 4a^2 + 12ab - 1ab$$

Distributive Property

$$= 4a^2 + (12 - 1)ab$$

Distributive Property

$$= 4a^2 + 11ab$$

Substitution

SKIP
THIS

USE ARROWS

USE MENTAL MATH HERE

Like Terms

- SAME VARIABLE(S)
- VARIABLES HAVE SAME EXPONENTS (powers)

Exercises

* ALL WORK ON LOOSE LEAF

Simplify each expression. If not possible, write *simplified*.

1. $12a - a$

2. $3x + 6x$

3. $3x - 1$

4. $12g - 10g + 1$

5. $-2x - 12$

6. $4x^2 + 3x + 7$

7. $20a + 12a - 8$

8. $3x^2 + 2x^2$

9. $-6x + 3x^2 + 10x^2$

10. $2p + \frac{1}{2}q$

11. $10xy - 4(xy + xy)$

12. $21c + 18c + 31b - 3b$

13. $3x - 2x - 2y + 2y$

14. $xy - 2xy$

15. $12a - 12b + 12c$

16. $4x + \frac{1}{4}(16x - 20y)$

17. $2 - 1 - 6x + x^2$

18. $4x^2 + 3x^2 + 2x$