Do these problems in your spiral

Use the Distributive Property to rewrite each expression.

$6(t + 2)$

$6(t) + 6(2)$

$6t + 12$

$-5(4 + x)$

$-5(4) + -5(x)$

$-20 + -5x$

$-20 - 5x$

$-7(8n - m)$

$-7(8n) - -7(m)$

$-56n - -7m$

$-56n + 7m$

$-6(6 + d)(-6)$

$-6(6) + -6(d)$

$-36 + -6d$

$-36 - 6d$

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Lesson 5 Reteach

Simplify Algebraic Expressions

COEFFICIENT → 5x + 11 ← CONSTANT
VARIABLE → 5x ; 11 ← TERM

When a plus or minus sign separates an algebraic expression into parts, each part is called a **term**. The numerical factor of a term that contains a variable is called the coefficient of the variable. A term without a variable is called a **constant**. **Like terms** contain the same variables to the same powers, such as $3x^2$ and $2x^2$.

3y - 5
3y + -5
TERM

Example

1 Identify the terms, like terms, coefficients, and constants in the expression $7x - 5 + x - 3x$.

$$\begin{aligned} 7x - 5 + x - 3x &= 7x + (-5) + x + (-3x) && \text{Definition of subtraction} \\ &= 7x + (-5) + 1x + (-3x) && \text{Identity Property; } x = 1x \end{aligned}$$

The terms are $7x$, -5, x, and $-3x$. The like terms are $7x$, x, and $-3x$. The coefficients are 7, 1, and -3. The constant is -5.

An algebraic expression is in **simplest form** if it has no like terms and no parentheses.

Examples

Write each expression in simplest form.

2 $5x + 3x$

$5x + 3x = (5 + 3)x$ or $8x$ Distributive Property; simplify.

3 $-2m + 5 + 6m - 3$

$-2m$ and $6m$ are like terms. 5 and -3 are also like terms.

$$\begin{aligned} -2m + 5 + 6m - 3 &= -2m + 5 + 6m + (-3) && \text{Definition of subtraction} \\ &= -2m + 6m + 5 + (-3) && \text{Commutative Property} \\ &= (-2 + 6)m + 5 + (-3) && \text{Distributive Property} \\ &= 4m + 2 && \text{Simplify.} \end{aligned}$$

m	CONSTANTS
-2m	+5
+6m	-3

4m + 2

Exercises

Identify the terms, like terms, coefficients, and constants in each expression.

-4y + -3 + 2y

1. $-4y - 3 + 2y$

TERMS -4y, -3, 2y
LIKE TERMS -4y AND 2y
CONSTANTS -3
COEFFICIENTS -4, 2

-5g + 3 + 2g + -1g

2. $-5g + 3 + 2g - g$

TERMS -5g, 3, 2g, -1g
LIKE TERMS -5g, 2g AND -1g
CONSTANTS 3
COEFFICIENTS -5, -1, 2

3. $5 + 3a - 4 - a$

TERMS
LIKE TERMS
CONSTANTS
COEFFICIENTS

Write each expression in simplest form.

4. $3d + 6d$

5. $2 + 5s - 4$

6. $2z + 3 - 9z - 8$

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Lesson 5 Homework Practice

Simplify Algebraic Expressions

Identify the terms, like terms, coefficients, and constants in each expression.

1. $4b + 7b + 5$

2. $8 + 6t - 3t + t$

3. $-5x + 4 - x - 1$

4. $2z - z + 6$

5. $4 + h - 8 - h$

6. $y - y - 2 + 2$

Write each expression in simplest form.

7. $h + 6h$

8. $10k - k$

9. $3b + 8 + 2b$

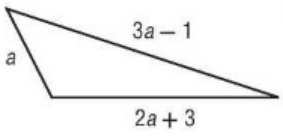
10. $-\frac{3}{4}x - \frac{1}{3} + \frac{7}{8}x - \frac{1}{2}$

11. $5c - 3d - 12c + d$

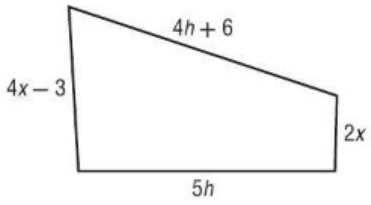
12. $-y + 9z - 16y - 25z$

MEASUREMENT Write an expression in simplest form for the perimeter of each figure.

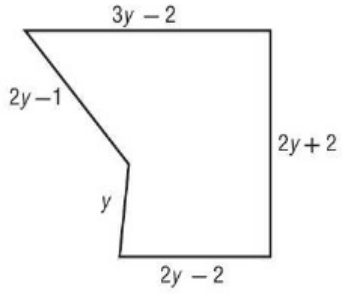
13.



14.



15.



16. SHOPPING Maggie bought c CDs for \$12 each, b books for \$7 each, and a purse costing \$24.

a. Write an expression to show the total amount of money Maggie spent.

b. If Maggie bought 4 CDs and 3 books, how much money did she spend?