NAME _____ DATE _____

2-3 Combining Like Terms

Objective: To simplify expressions by combining like terms.

Terms to Know

Like terms Terms that have identical variable parts. For example, both $3m$ and $5m$ have the variable m, so they are *like terms*.

Unlike terms Terms that have different variable parts. For example, $6x$ and $4y$ have different variables, so they are *unlike terms*.

Combining like terms The process of adding or subtracting like terms.

CAUTION 1 A variable written by itself is understood to have a "1" in front of it. For example, x means $1x$.

Example 1 Simplify.

a. $n + 5n$ **b.** $6c - 4c$

Solution Use the distributive property.

a. $n + 5n = 1n + 5n$
$= (1 + 5)n$
$= 6n$

b. $6c - 4c = (6 - 4)c$
$= 2c$

Simplify.

1. $2v + 5v$ **2.** $3x - 2x$ **3.** $8z + 15z$

4. $4w - 3w$ **5.** $6m + m$ **6.** $13a - 8a$

7. $9y - y$ **8.** $7x + 11x$ **9.** $c + 12c$

10. $6u - 3u$ **11.** $n + 8n$ **12.** $15z - z$

CAUTION 2 You cannot combine unlike terms. For example, $2x + 3y$ cannot be simplified.

Example 2 Simplify.

a. $3x + 4x - 5$ **b.** $6z + 7y - 2y$

Solution Use the distributive property to combine the *like terms*.

a. $3x + 4x - 5 = (3 + 4)x - 5$
$= 7x - 5$

b. $6z + 7y - 2y = 6z + (7 - 2)y$
$= 6z + 5y$