

4-2 Study Guide and Intervention

Simplifying Algebraic Expressions

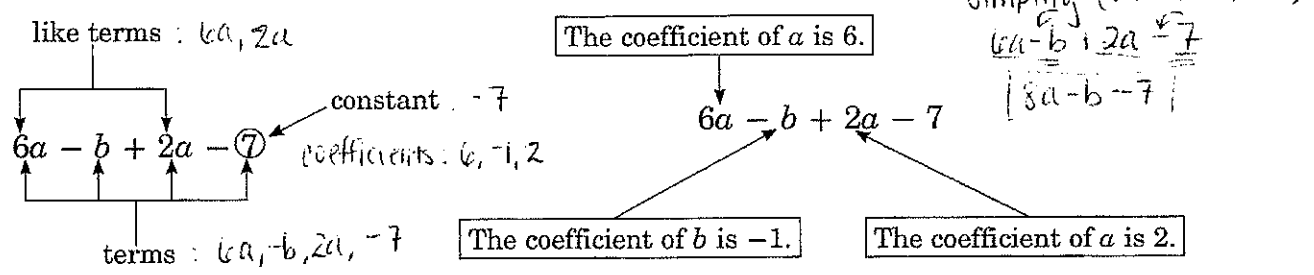
Parts of Algebraic Expressions

term: a number, variable, or a ^{multiply} product of numbers and variables; terms in an expression are separated by addition or subtraction signs *EX: 4, x, 7y*

coefficient: the numerical part of a term that also contains a variable *EX: 7y*

constant: term without a variable *EX: 4*

like terms: terms that contain the same variables *EX: 4x, 3x*



Example Identify the terms, like terms, coefficients, and constants in the expression $4m - 5m + n - 7$.

$$\underline{4m} - \underline{5m} + \underline{n} - \underline{7} = 4m + (-5m) + n + (-7) \quad \text{Definition of Subtraction}$$

$$\underline{-m} + \underline{n} - \underline{7} = 4m + (-5m) + 1n + (-7) \quad \text{Identity Property}$$

The terms are $4m, -5m,$ and $1n$. The like terms are $4m$ and $-5m$. The coefficients are $4, -5,$ and 1 . The constant is -7 .

EX 1

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

A. $2 + 6a + 4a$
 Terms: $2, 6a, 4a$
 Like terms: $6a, 4a$
 Coefficients: $6, 4$
 Constants: 2

B. $m + 4m + 2m + 5$
 Terms: $m, 4m, 2m, 5$
 Like terms: $m, 4m, 2m$
 Coefficients: $1, 4, 2$
 Constants: 5

C. $3c + 4d - c + 2$
 Terms: $3c, 4d, -c, 2$
 Like terms: $3c, -c$
 Coefficients: $3, 4, -1$
 Constants: 2

EX 2 Simplify each expression.

Use distributive property first, then combine like terms!

A. $\underline{5h} - \underline{3g} + \underline{2g} - \underline{h}$
 $-3g + 2g + 5h - h$
 $[-g + 4h]$

B. $-3(x-4) - 2x + 6$
 $-3x + 12 - 2x + 6$
 $[-5x + 18]$

C. $-2x + 4(x+y) - 2y$
 $-2x + 4x + 4y - 2y$
 $[2x + 2y]$

List in standard form. variables in alphabetical order, constants last