

LESSON
10-3

Generating Equivalent Expressions

Reading Strategies: Organization Patterns

An algebraic expression is made up of parts called **terms**.

constants $3.2 \frac{1}{2} 12$
--

variables $m s x$

constants and variables $4x \frac{n}{2} 3m^2 \frac{2}{3}y$
--

A **coefficient** is a value multiplied by a variable.

Term	Value of Coefficient	Meaning
$7x$	7	$7 \cdot x$
y	1	$1 \cdot y$
$\frac{n}{2}$	$\frac{1}{2}$	$\frac{1}{2} \cdot n$

The expression below has 6 terms.

Term	Term	Term	Term	Term	Term
↓	↓	↓	↓	↓	↓
$2x$	+	$5b$	+	7	-
		b	+	$3x$	+
				$2x^2$	

Like terms have **both** the same variable **and** the same exponent.

Like terms can have different coefficients.

Like Terms			Unlike Terms		
$2y$ and $3y$	$4b$ and b	$4n^2$ and $2n^2$	$3x$ and $2x^2$	$4x$ and b	$7n$ and $7m$

You can **simplify** an algebraic expression. To do that, you **combine** like terms.

First, reorganize the terms so like terms are together: $2x + 3x + 5b - b + 7 + 2x^2$

Then add or subtract coefficients to combine like terms: $5x + 4b + 7 + 2x^2$

Solve.

- How many terms are there in this expression: $6b + b^2 + 5 + 2b - 3f$? _____ terms
- $6b$ and b^2 are unlike terms. Explain why.

Use $5a^2 + 6b + a^2 - 3b - 2 + 4c$ for Exercises 3–5.

- How many terms are there in the expression? _____ terms
- Reorganize the terms so like terms are together. _____
- Combine like terms to rewrite the expression. _____

Reading Strategies

1. 5
2. because the exponents are different
3. 6
4. $5a^2 + a^2 + 6b - 3b - 2 + 4c$
5. $6a^2 + 3b - 2 + 4c$