

## Combining Like Terms

The expression  $3x^2 + 2x + 1$  has three terms,  $3x^2$ ,  $2x$ , and  $1$ . A **term** is either a single number, a variable, or numbers and variables multiplied together. A term in an expression without a variable is called a **constant**, as  $1$  is above. For terms to be considered "like" terms, they must have the same variable and corresponding variables must have the same exponents. All constant terms are considered "like" terms.

<u>like terms</u>	<u>unlike terms</u>
$3x$ and $8x$	$9y$ and $10z$
$2x^2y$ and $3x^2y$	$3ab$ and $4ab^2$

In the example,  $3x$  and  $8x$  are like terms with numerical coefficients of  $3$  and  $8$ . A **numerical coefficient** of a term is simply the number before its corresponding variable. When combining like terms, simply keep the variable the same and combine the numerical coefficients.

$$4y + 10y = 14y$$

$$6b + 9b - 5b = 10b$$

$$10x - 3x = 7x$$

$$12x^2y - 10x^2y + 2x^2y = 4x^2y$$

Identify the like terms in each problem.

1.  $7c + 12c - 2$

2.  $19y - 10$

3.  $12rt - 10r + 18t$

4.  $5r - 10r + 8rs$

5.  $5d + 7d - 1$

6.  $q + 9 + 2q + 5q$

Simplify. If not possible, write *already simplified*.

7.  $8m - 3m$

8.  $8y + 12y + 3y$

9.  $3s + 8s - 2$

10.  $2 + 10k$

11.  $8q + 10q + 14$

12.  $4 + 8x + 11y$

13.  $5a + 6a - 9a$

14.  $z + 8m + 4z - 4m$

15.  $5w + 2 + w$