

Notes: Simplifying Expressions with Like Terms

Describe how simplifying like terms will help us in this class.

In algebra... a **term** is either:

- A single number
- A variable
- Numbers and variables connected

An **Expression** is a set of numbers, symbols, and operators (such as $-$ or \div) grouped together that show the value of something.

Now for this next part... let's practice combine some like terms. Simplify by combining like terms. Remember... you can **ONLY** combine like terms if they are the **SAME TYPE** of term.

$$\begin{array}{cccccc} x^2 & -22 & 4x & -3y & 7x^2 & 5 \\ 2xy & -2y & +8 & x^2y & 3x^2 & -2x \end{array}$$

How many terms does our final answer have?

Simplify the following expressions.

$$6k + 7k$$

$$-r - 10r + 5$$

$$12y + 5 + 3y - 5$$

$$2x - 4y - 4x + 2y$$

On your own

$$-8x - 11x$$

$$-11x + 8x$$

$$2 \otimes -5\Delta + 7\Delta + 3\nabla - \otimes + 9\nabla + 2\nabla$$

$$2x^2 + 3x - 6x + 7$$

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Handwritten diagram showing terms grouped by shape:

x^2 (circle)	-22 (square)	$4x$ (diamond)	$-3y$ (triangle)	$7x^2$ (circle)	5 (square)
$2xy$	$-2y$ (triangle)	$+8$ (square)	x^2y	$3x^2$ (circle)	$-2x$ (diamond)

NO OTHER LIKE TERM (under x^2)

NO OTHER LIKE TERM (under x^2y)

$$x^2y + x^2 + 3x^2 + 7x^2 + 4x - 2x - 2y - 3y + 2xy - 22 + 8 + 5$$
$$x^2y + 11x^2 + 2x - 5y + 2xy - 9$$

How many terms does our final answer have?

6

Simplify the following expressions.

$$6k + 7k$$

$$13k$$

$$-r - 10r + 5$$

$$-11r + 5$$

$$12y + 5 + 3y - 5$$

$$15y$$

$$2x - 4y - 4x + 2y$$

$$-2x - 2y$$

On your own

$$-8x - 11x$$

$$-19x$$

$$-11x + 8x$$

$$-3x$$

$$\cancel{2\otimes} - \cancel{5\triangle} + \cancel{7\triangle} + \cancel{3\nabla} - \cancel{\otimes} + \cancel{9\nabla} + 2\nabla$$

$$\otimes + 2\triangle + 12\nabla + 2\nabla$$

$$2x^2 + 3x - 6x + 7$$

$$2x^2 - 3x + 7$$