

2 Simplifying and expanding – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)
Algebra	代数	_____
term	项	_____
Like terms	同类项	_____
expand	展开	_____

Recall

Algebra 代数 uses letters to stand for numbers. A **term** 项 is a single part, like $3a$ or $-b$.

New ideas

Read these first, then do the Practice.

■ 1 Collecting like terms

Like terms 同类项 have the same letter. You can add or subtract them:

$$\begin{array}{c} 3a + 2a + 4b - b \\ \downarrow \text{collect like terms} \\ 5a + 3b \end{array}$$

You **cannot** combine unlike terms (e.g. a and b stay separate).

■ 2 Expanding brackets

To **expand** 展开 a bracket, multiply each term inside by the term outside:

$$\begin{array}{ccc} & x & 2 \\ 3 & \boxed{\begin{array}{|c|c|} \hline 3x & 6 \\ \hline \end{array}} & \\ & 3(x + 2) = 3x + 6 \end{array}$$

$$3(x + 2) = 3x + 6.$$

Watch out: you can only collect **like terms** (same letter) — a and b stay apart. When expanding, multiply the outside term by **every** term inside the bracket, keeping the signs.

Practice

Try these in order.

2.1 Simplify $5a + 3a$. [1]

2.2 Simplify $7x + 2y - 3x + 4y$. [2]

2.3 Expand $4(x + 3)$. [1]

2.4 Expand $2(3x - 5)$. [1]

2.5 Simplify $6p + 2q - p - 5q$. [2]

2.6 Challenge. Expand and simplify $3(x + 2) + 2(x - 1)$.

[3]