



Edexcel IGCSE 4MA1

# Equations, Formulae & Identities Vocabulary

方程、公式与恒等式词汇卡

Topic 2 | Foundation & Higher

FREE | Edexcel 4MA1 | Bilingual 双语

📘 Bilingual Vocabulary Cards 双语词汇卡

🎓 For Chinese-English Math Education

适用于中英双语数学教学

👉 Vocab Tables ✂️ Printable Flashcards 📖 Foundation & Higher

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## How to Use This Resource / 使用说明 **What's inside** / 内容概览

- ▣ **Vocabulary Tables** (p. 3–4) — 27 bilingual terms with pinyin & definitions
- ☒ **Flashcards** (p. 5–10) — 3 sets of printable cards, print front/back pages back-to-back
- ➥ **Higher labels** — Look for (H) to spot Higher-only content



## Differentiation Tips / 分层教学建议

- ★ **Foundation students** — Focus on terms without the (H) marker
- ➥ **Higher students** — Learn all terms including (H) items
- 人群 **Bilingual learners** — Use the Chinese and Pinyin columns for support
- 🖨 **Printing tip** — Print flashcard pages double-sided for front/back cards

### ♥ Enjoying this resource?

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Also available for Edexcel 4MA1: **Numbers & Number System, Sequences, Functions & Graphs, Geometry & Trigonometry, Vectors & Transformation Geometry, Statistics & Probability Vocabulary Cards**

## 2.1 Use of Symbols & 2.2 Algebraic Manipulation

2.1 符号的使用 2.2 代数运算

### Algebraic Expressions | 代数表达式

English 英文	Chinese 中文	Pinyin 拼音	Definition 定义
<b>Variable</b>	变量	biàn liàng	A letter that represents an unknown or changing value
<b>Constant</b>	常量	cháng liàng	A fixed value that does not change, e.g. 5, $\pi$
<b>Coefficient</b>	系数	xì shù	The number multiplying a variable, e.g. 3 in $3x$
<b>Expression</b>	表达式	biǎo dá shì	A combination of terms, e.g. $2x + 3y - 1$
<b>Term</b>	项	xiàng	A single part of an expression, e.g. $5x^2$
<b>Like terms</b>	同类项	tóng lèi xiàng	Terms with the same variable and power, e.g. $3x$ and $-2x$
<b>Formula</b>	公式	gōng shì	An equation showing a relationship, e.g. $A = \pi r^2$
<b>Substitution</b>	代入	dài rù	Replacing a variable with a number to evaluate

### Algebraic Manipulation | 代数运算

English 英文	Chinese 中文	Pinyin 拼音	Definition 定义
<b>Simplify</b>	化简	huà jiǎn	Collect like terms to write in a shorter form
<b>Expand</b>	展开	zhǎn kāi	Multiply out brackets, e.g. $2(x + 3) = 2x + 6$
<b>Factorise</b>	因式分解	yīn shì fēn jiě	Write as a product of factors, e.g. $6x + 9 = 3(2x + 3)$
<b>Common factor</b>	公因式	gōng yīn shì	A factor shared by all terms, e.g. 3 in $6x + 9$
<b>Difference of squares</b>	平方差	píng fāng chā	$a^2 - b^2 = (a + b)(a - b)$ ( $H$ )
<b>Completing the square</b>	配方法	pèi fāng fǎ	Rewrite $ax^2 + bx + c$ as $a(x + p)^2 + q$ ( $H$ )

## 2.3–2.8 Equations, Formulae, Inequalities & Proportion

2.3–2.8 方程、公式、不等式与比例

### Indices, Equations & Inequalities | 指数、方程与不等式

English 英文	Chinese 中文	Pinyin 拼音	Definition 定义
<b>Index (plural: indices)</b>	指数	zhǐ shù	The power in $a^n$ ; rules: $a^m \times a^n = a^{m+n}$
<b>Linear equation</b>	一次方程	yī cì fāng chéng	Equation of degree 1, e.g. $3x - 5 = 7$
<b>Quadratic equation</b>	二次方程	èr cì fāng chéng	Equation of degree 2, e.g. $x^2 - 5x + 6 = 0$ (H)
<b>Simultaneous equations</b>	联立方程	lián lì fāng chéng	Two or more equations solved together
<b>Subject of a formula</b>	公式的主项	gōng shì de zhǔ xiàng	The variable written alone on one side
<b>Quadratic formula</b>	求根公式	qiú gēn gōng shì	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ (H)
<b>Root / Solution</b>	根/解	gēn / jiě	A value of $x$ that satisfies the equation
<b>Inequality</b>	不等式	bù děng shì	A statement using $<$ , $>$ , $\leq$ , $\geq$
<b>Number line</b>	数轴	shù zhóu	A line showing inequality solutions (open/closed circles)
<b>Region</b>	区域	qū yù	Area on a graph satisfying inequalities (H)

### Proportion | 比例

English 英文	Chinese 中文	Pinyin 拼音	Definition 定义
<b>Algebraic fraction</b>	代数分式	dài shù fēn shì	A fraction with algebraic expressions, e.g. $\frac{x+1}{x-2}$ (H)
<b>Direct proportion</b>	正比例	zhèng bǐ lì	$y \propto x$ : $y$ increases as $x$ increases
<b>Inverse proportion</b>	反比例	fǎn bǐ lì	$y \propto \frac{1}{x}$ : $y$ decreases as $x$ increases

## Flashcards — Front (Terms)

闪 卡 正 面 — 术 语

**Variable**

变 量

**Factorise**

因 式 分 解

**Linear Equation**

一 次 方 程

**Quadratic Equation (H)**

二 次 方 程

**Expression**

表 达 式

**Inequality**

不 等 式

Cut along dashed lines. Print this and next back-to-back. 沿虚线剪开。本页与下一页双面打印。

## Flashcards — Back (Definitions)

闪卡背面—定义

### Factorise

因式分解

Write as a product of factors,  
e.g.  $6x + 9 = 3(2x + 3)$

写成因式乘积, 如  $6x + 9 = 3(2x + 3)$

### Variable

变量

A letter representing an unknown or changing value

代表未知或变化值的字母

### Quadratic Equation

二次方程

Equation of degree 2, e.g.  $x^2 - 5x + 6 = 0$

二次方程, 如  $x^2 - 5x + 6 = 0$

### Linear Equation

一次方程

Equation of degree 1, e.g.  $3x - 5 = 7$

一次方程, 如  $3x - 5 = 7$

### Inequality

不等式

A statement using  $<$ ,  $>$ ,  $\leq$ ,  $\geq$

使用  $<$ ,  $>$ ,  $\leq$ ,  $\geq$  的数学陈述

### Expression

表达式

A mathematical phrase with numbers, variables, and operations

包含数字、变量和运算的数学短语

🖨️ Print pages 5–6 back-to-back, then cut along dashed lines. 第5–6页双面打印, 沿虚线剪裁。

## Flashcards — Front (More Terms)

闪卡正面—更多术语

**Formula**

公式

**Subject of  
a Formula**

公式的主项

**Expand**

展开

**Root / Solution**

根/解

**Simultaneous Eq.**

联立方程

**Substitution**

代入

Cut along dashed lines. Print this and next back-to-back. 沿虚线剪开。本页与下一页双面打印。

## Flashcards — Back (Definitions)

闪卡背面—定义

### Subject of a Formula

公式的主项

The variable written alone on one side

单独写在一边的变量

### Formula

公式

A mathematical rule using symbols, e.g.

$$A = \pi r^2$$

使用符号的数学规则, 如  $A = \pi r^2$

### $n$ th Term

通项公式

The formula for the general term, e.g.  $2n + 1$

通项的公式, 如  $2n + 1$

### Expand

展开

Multiply out brackets, e.g.  $2(x+3) = 2x+6$

展开括号, 如  $2(x + 3) = 2x + 6$

### Derivative

导数

$\frac{dy}{dx}$ : rate of change of  $y$  w.r.t.  $x$

$\frac{dy}{dx}$ :  $y$  关于  $x$  的变化率

### Simultaneous Equations

联立方程

Two or more equations solved together

两个或多个方程一起求解

🖨 Print pages 7–8 back-to-back, then cut along dashed lines. 第 7–8 页双面打印, 沿虚线剪裁。

## Flashcards — Front (Advanced)

闪卡正面—进阶术语

**Coefficient**

系数

**Index**

指数

**Simplify**

化简

**Quadratic Formula ( $H$ )**

求根公式

**Direct Proportion**

正比例

**Completing the Square ( $H$ )**

配方法

Cut along dashed lines. Print this and next back-to-back. 沿虚线剪开。本页与下一页双面打印。

## Flashcards — Back (Definitions)

闪 卡 背 面 — 定 义

### Index

指数

The power in  $a^n$ ; rules:  $a^m \times a^n = a^{m+n}$   
在  $a^n$  中的幂; 规则:  $a^m \times a^n = a^{m+n}$

### Coefficient

系数

The number multiplying  
a variable, e.g. 3 in  $3x$   
乘以变量的数, 如  $3x$  中的 3

### Quadratic Formula

求根公式

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

### Simplify

化简

Collect like terms to  
write in a shorter form

合并同类项, 写成更简短的形式

### Completing the Square

配方法

Rewrite  $ax^2 + bx + c$  as  $a(x + p)^2 + q$   
将  $ax^2 + bx + c$  改写为  $a(x + p)^2 + q$

### Direct Proportion

正比例

$y \propto x$ :  $y$  increases as  $x$  increases  
 $y \propto x$ :  $y$  随  $x$  增加而增加

🖨️ Print pages 9–10 back-to-back, then cut along dashed lines. 第 9–10 页双面打印, 沿虚线剪裁。