



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
- 👤 **Bilingual learners** — Use the Chinese and Pinyin columns for support
- 🖨 **Printing tip** — Print flashcard pages double-sided for front/back cards

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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
Variable	变量	biàn liàng	A letter that represents an unknown or changing value
Constant	常量	cháng liàng	A fixed value that does not change, e.g. 5, π
Coefficient	系数	xì shù	The number multiplying a variable, e.g. 3 in $3x$
Expression	表达式	biǎo dá shì	A combination of terms, e.g. $2x + 3y - 1$
Term	项	xiàng	A single part of an expression, e.g. $5x^2$
Like terms	同类项	tóng lèi xiàng	Terms with the same variable and power, e.g. $3x$ and $-2x$
Formula	公式	gōng shì	An equation showing a relationship, e.g. $A = \pi r^2$
Substitution	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
Simplify	化简	huà jiǎn	Collect like terms to write in a shorter form
Expand	展开	zhǎn kāi	Multiply out brackets, e.g. $2(x + 3) = 2x + 6$
Factorise	因式分解	yīn shì fēn jiě	Write as a product of factors, e.g. $6x + 9 = 3(2x + 3)$
Common factor	公因式	gōng yīn shì	A factor shared by all terms, e.g. 3 in $6x + 9$
Difference of squares	平方差	píng fāng chā	$a^2 - b^2 = (a + b)(a - b)$ (H)
Completing the square	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
Index (plural: indices)	指数	zhǐ shù	The power in a^n ; rules: $a^m \times a^n = a^{m+n}$
Linear equation	一次方程	yī cì fāng chéng	Equation of degree 1, e.g. $3x - 5 = 7$
Quadratic equation	二次方程	èr cì fāng chéng	Equation of degree 2, e.g. $x^2 - 5x + 6 = 0$ (H)
Simultaneous equations	联立方程	lián lì fāng chéng	Two or more equations solved together
Subject of a formula	公式的主项	gōng shì de zhǔ xiàng	The variable written alone on one side
Quadratic formula	求根公式	qiú gēn gōng shì	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ (H)
Root / Solution	根/解	gēn / jiě	A value of x that satisfies the equation
Inequality	不等式	bù děng shì	A statement using $<$, $>$, \leq , \geq
Number line	数轴	shù zhóu	A line showing inequality solutions (open/closed circles)
Region	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
Algebraic fraction	代数分式	dài shù fēn shì	A fraction with algebraic expressions, e.g. $\frac{x+1}{x-2}$ (H)
Direct proportion	正比例	zhèng bǐ lì	$y \propto x$: y increases as x increases
Inverse proportion	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

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

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。