

OXBRIDGE MATH TUTORS

PARENT EDITION

VOLUME 2 · THE DEEP-DIVE COMPANION

IGCSE & A-Level Maths

The tier decision, bridging to A-Level,
a readiness check,
and Further Maths.

Facts last checked: October 2026

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If You Read Only One Page

A-Level introduces additional content and depth. Review the school's course plan and the student's recent work; an IGCSE grade alone does not establish readiness.

The five things worth knowing

- **Know the board.** Cambridge and Pearson Edexcel are structured differently. Confirm which one the school uses.
 - **The tier matters.** At Cambridge IGCSE, Core caps the grade at C and Extended reaches A*. Foundation tier at Edexcel also limits the top grade.
 - **Cambridge IGCSE now has a non-calculator paper at both tiers**, worth half the marks. Practise by hand.
 - **A-Level algebra is the language of everything.** Small gaps cause errors across every topic.
- Independent practice can help. Use varied questions, review errors and seek feedback; the amount of practice alone does not guarantee a grade.

Five questions to ask your child's school

- Which board and which tier is my child entered for, and who made that decision and when?
- Is there a deadline to change tier, and what would trigger a change?
- What are the entry requirements to start A-Level Maths here, and is a bridging course offered?
- For A-Level: is it a staged or linear route (Cambridge), or how are the units planned across sittings (Edexcel)?
- Is Further Mathematics offered, and who is it recommended for?

One thing to do this week

Ask your child to solve one equation out loud, without a calculator, and explain each line. If they cannot say why each step is allowed, algebra is the first thing to repair.

SECTION 1

The Qualifications at a Glance

How the IGCSE grade is built

Cambridge IGCSE 0580 (either tier)	Non-calculator paper 50%	Calculator paper 50%
Edexcel Intl GCSE 4MA1 (either tier)	Paper 1 50%	Paper 2 50%

	Cambridge	Pearson Edexcel
IGCSE	Mathematics 0580. Core (grades C to G) and Extended (A* to E). Two papers per tier, 50% each: Core Paper 1 non-calculator and Paper 3 calculator, 1h30, 80 marks each. Extended Paper 2 non-calculator and Paper 4 calculator, 2h, 100 marks each.	International GCSE Mathematics A (4MA1). Foundation: grades 5-1; Higher: 9-4, with an allowable 3. Two 2-hour papers, 100 marks and 50% each. Calculator allowed on both.
AS and A-Level	9709 Mathematics. Pure Mathematics plus Mechanics and/or Probability & Statistics. Staged or linear routes exist; the school decides.	International Advanced Level Mathematics. Unit-based: Pure, Mechanics and Statistics units that can be sat across different series.

Check the syllabus version for your child's exam year. The Cambridge 0580 structure above is for exams from 2025 to 2027.

New Cambridge syllabuses are coming for 2028

Cambridge lists 2028-2030 syllabuses for Mathematics 0580, Additional Mathematics 0606 and AS & A Level Mathematics 9709. Use the specification for the year of the examination, not merely the year study begins.

Exam timetables depend on the administrative zone

Cambridge places every exam centre in one of six administrative zones, and each zone has its own timetable. The UK has a separate timetable of its own. Cambridge publishes a separate June and November timetable for each zone. Your child's school exams officer knows the zone, and Cambridge's own online zone tool gives the answer by location. Do not rely on websites that list countries by zone, because they disagree with each other.

From IGCSE to A-Level: a typical sequence



SECTION 2

The Tier Decision

A tier determines the content assessed and eligible grades. Ask the school how and when the entry is decided. Progression requirements vary: check the intended AS or A-Level course rather than assuming one universal rule.

Question	Why it matters
Who decides the tier, and based on what evidence?	Some schools decide on mock results, some on class tests, some on teacher judgement. You should know which.
When is the decision made, and when is it final?	Boards set entry deadlines. After the deadline, changing tier may be difficult. Ask the school for the date.
What grade does my child need for A-Level Maths here?	If the school requires a high IGCSE grade, a capped tier may close the door.
What happens if my child is moved down, or up?	Some students gain from a tier that fits their level. Others lose confidence. Ask about both.
Can we see the mock marks that support the decision?	A clear, evidence-based answer is a good sign.

Core and Foundation are not a failure

A well-chosen tier can lead to a better grade than a stretch entry that goes badly. The point is that the choice should be made with evidence and understood by the family, not made by default.

A conversation to have at home

Ask the school to explain the proposed tier using recent evidence, the change deadline and the grade needed for the next course. Use an independent practice question to identify algebra that needs repair. A tier decision should be understood, not inferred from a worksheet.

SECTION 3

Bridging to A-Level: What Changes

At IGCSE	At A-Level
Success often comes from recognising question types.	Success needs choosing and justifying a method for an unfamiliar problem.
Algebra is a topic.	Algebra is the language of every topic.
Lots of repetition in class.	Faster pace, more reading, more independent practice.
Mostly applying a given method.	Reasoning, and in places proof.
Statistics and mechanics hardly appear.	Applied papers ask students to build and interpret models.

A 15-question readiness check, no calculator

#	Question	#	Question
1	Expand $(x + 3)(2x - 5)$.	9	$\sin 30$, $\cos 60$, $\tan 45$ (degrees).
2	Factorise $x^2 - 5x - 6$.	10	Simplify $(2x^3)^2 / (4x^2)$.
3	Solve $3x - 7 = 2(x + 4)$.	11	Evaluate 8 to the power $2/3$.
4	Simplify the square root of 50.	12	Solve $2x - 3 > 7$.
5	Solve $x^2 - 4x - 12 = 0$.	13	Complete the square: $x^2 + 6x + 1$.
6	Make r the subject of $A = \pi r^2$.	14	Evaluate log base 2 of 32.
7	Solve $2x + y = 7$ and $x - y = 2$.	15	Expand $(\sqrt{3} + 1)(\sqrt{3} - 1)$.
8	Gradient through (1, 2) and (4, 11).		

Answer key

1. $2x^2 + x - 15$. 2. $(x - 6)(x + 1)$. 3. $x = 15$. 4. $5\sqrt{2}$. 5. $x = 6$ or -2 . 6. $r = \sqrt{A / \pi}$. 7. $x = 3$, $y = 1$. 8. 3. 9. $1/2$, $1/2$, 1. 10. x^4 . 11. 4. 12. $x > 5$. 13. $(x + 3)^2 - 8$. 14. 5. 15. 2.

Informal check: 13-15 suggests secure foundations; 10-12 means revise the misses. Below 10, plan foundation work with the teacher. This is not a validated entry test.

SECTION 4

Worked Practice Answers

These are original practice questions with checked answers.

IGCSE example (no calculator)

Question. Without a calculator, find the exact value of $(3 + \sqrt{5})(3 - \sqrt{5})$.

Answer. This is a difference of two squares. $3^2 - (\sqrt{5})^2 = 9 - 5 = 4$.

Question. Solve $3x^2 - 5x - 2 = 0$.

Answer. Factorise: $(3x + 1)(x - 2) = 0$, so $x = 2$ or $x = -1/3$. Check by substituting: $3(4) - 10 - 2 = 0$, correct.

A-Level example: reasoning, not just calculation

Question. Find the range of values of k for which $x^2 + kx + 9 = 0$ has real roots.

Answer. Real roots need the discriminant to be at least zero: $k^2 - 4(1)(9)$ at least 0, so k^2 at least 36, so k is at most -6 or k is at least 6.

What loses marks	What earns marks
Writing " $k = 6$ " only.	Setting the discriminant at least zero, and solving the inequality properly.
Giving "-6 to 6" as the range.	Recognising the inequality splits into two ranges, and checking with a test value, such as $k = 0$, which gives no real roots.
Using a strict inequality.	Remembering that a repeated root is still real, so the discriminant can equal zero.

Why this question matters

It looks short, but it combines algebra, an inequality and a concept (what real roots mean). A student who only learnt the rule "discriminant = 0 means equal roots" gets caught. This is the A-Level habit: understand why the rule works.

SECTION 5

Further Mathematics, and Practice Routines

Further Mathematics is a second maths qualification taken alongside A-Level Maths. Some mathematics-heavy degrees at selective universities expect or strongly prefer it. Others do not. Entry requirements are set by each university and degree, so read the requirements for any course your family is considering.

Ask this	Lean toward
Does a target degree expect or recommend Further Maths?	Check whether the school offers it, and from when
Is Maths the student's strongest and most-loved subject?	Further Maths is realistic
Is the student's timetable already full of demanding subjects?	Protect the other grades first

A practice routine

Session	What to do	Time
1. Algebra warm-up	Ten minutes, no calculator, mixed algebra and trigonometry.	15 min
2. Topic work	One topic, written-out solutions. Explain one question aloud afterwards.	35 min
3. Past paper	A timed section, marked against the official mark scheme. Note where method marks were lost.	45 min
4. Repair	Redo the questions that lost marks until they are right without notes.	30 min

The error log

Date	Question	What I wrote	What was missing	Type of error

SECTION 6

What to Say, and When to Get Help

When your child says	Try this	Avoid
"I was fine at IGCSE."	"What does A-Level ask that IGCSE did not? Show me one question that felt new."	Dismissing it as a slow start.
"I understand it in lessons."	"Do one question now, with no notes, and talk me through it."	Taking "understood in class" as proof.
"The non-calculator paper is unfair."	"Which step would you do on a calculator? Let's practise it by hand."	Agreeing the paper is unfair.
"I don't like the applied papers."	"Which part: building the model, or interpreting the result?"	Letting them avoid the topic.

Signs worth a conversation

What you see	Possible explanation	What helps
Strong in class tests, weaker on full papers	Timing or stamina	Timed full papers
Big gap between calculator and non-calculator work	Technique gap	Practise each paper type separately
Grades falling since the course began	Foundation gaps showing	Go back to algebra and trigonometry
Avoiding Mechanics or Statistics	Modelling is unfamiliar	Short, regular applied practice

Glossary

Term	In plain English
Tier	The level of paper a student is entered for: Core or Extended (Cambridge), Foundation or Higher (Edexcel).
AS / A-Level	AS is a qualification; its A-Level role depends on the board.
Staged / linear route	Staged: AS first, then A-Level components later. Linear: all components in the same series.
Unit-based	A structure where units can be taken in different exam sittings.
Discriminant	The part of the quadratic formula, $b^2 - 4ac$, that tells you how many real roots there are.
Method mark	A mark for using a valid method, even if the final answer is wrong.

Check before you rely on this volume

Confirm the board, tier and specification code with the school.

Confirm the syllabus for your child's exam year. Structures change between years.

Check university entry requirements, including Further Maths, for each course your family considers.

Official Sources and Use Notes

Reviewed on 5 October 2026. This Volume 2 companion supplements the shorter parent guide. Confirm the student's exam session and specification with the school.

Worked examples and suggested mark allocations are teaching illustrations, not official scoring rubrics, promises of marks or material for assessed submissions. Readiness scores are informal discussion prompts, not validated course-placement tests.

This volume's board comparison covers Cambridge and Pearson International routes, not every UK board. Confirm the exact qualification before applying the tier and calculator advice. Pearson 4MA1 permits a calculator on both papers; Cambridge 0580 has a non-calculator paper at each tier.

For the algebra readiness checks, treat r as a non-negative radius. Expressions with denominators require non-zero denominators; logarithms require positive arguments. The checks are foundation practice, not a complete entry test for every course.

Cambridge 0580: current and 2028-2030 syllabuses

Cambridge 0580: 2025-2027 specification

Cambridge 9709: exam-year syllabuses

Pearson 4MA1: calculator rules and paper structure

Make an enquiry through the website

The diagnostic is 45 minutes: 30 minutes live plus 15 minutes independent. Launch price: AED 150. Written report within 24 hours; the full fee is credited if a programme starts within seven days.

Parent discussion tables offer possible explanations, not established causes. Work samples, observation and school context are needed before attributing a difficulty to a cause. Informal readiness bands do not validate a diagnosis or predict a grade.