![Advanced Mathematics Support Programme® logo]

Admissions Tests for Mathematics Degrees

A guide for students to help you find your way through the maze

Did you know that lots of universities actively encourage applicants to take a maths admissions test, even if it's not actually required for the course?

Well, I know that Oxford and Cambridge require admissions tests of some sort for almost all their courses.

Yes, but Imperial College, London and the University of Warwick require a test too.

Several other universities use admissions tests to help them decide who to interview; some make them a condition of offer, and some use them to make a reduced offer.

Why?

Well, they want you to have a deeper understanding of the maths you covered at A level. The admissions tests focus more on problem-solving skills and less on routine procedures.

What about Further Maths? Doesn't that count?

Some courses require Further Maths anyway, and some give lower offers if you have Further Maths. You need to check the admissions requirements for the course you want to apply for.

Will taking the tests involve a lot of hard work?

You will need to work hard to prepare for the tests, but most students find it fun and satisfying too. It's great preparation for undergraduate study of any STEM subject, and expands your toolkit to help you solve any tricky questions you come across in A level Maths.

What should I do now?

That depends on which year you are in, and where you intend to study. There are three different tests: STEP MAT and TMUA. You need to check the admissions requirements for specific courses you are interested in. These details are listed on the universities' websites.

› **How do the tests compare?**

	STEP	MAT	TMUA
What	• Two papers, STEP II and STEP III • Set and marked by the University of Cambridge • These tests are particularly challenging – fewer than 50% of offer holders do well enough to get a place at the University of Cambridge • Other universities may give credit for lower grades than are needed for the University of Cambridge *STEP I has been discontinued. It covered A level Mathematics only*	• A single paper • The University of Oxford entrance exam • Also used by Imperial College London and the University of Warwick • Other universities may give lower offers for a good MAT score, but you will not receive your score unless you have applied to Oxford, Imperial or Warwick	• Two papers: Mathematical Thinking and Mathematical Reasoning • The admissions test preferred by Durham University • Less demanding than STEP and MAT • Time pressure can be an issue, but you don't need to answer all the questions to get a good grade
When	• The exam usually takes place at the end of Year 13 • The application deadline is usually early May	• The exam usually takes place in November of Year 13 • The application deadline is usually mid-October (additional late fee for TMUA from early-October)	
Cost	A fee is payable per paper; for full details see the Cambridge Assessments Admissions Tests website	There is no fee for this test	A fee is payable to enter; for full details see the Cambridge Assessments Admissions Tests website
Topics covered	• STEP II: A level Mathematics and AS Further Mathematics • STEP III: A level Mathematics and A level Further Mathematics • It is a non-calculator exam, so fluency in arithmetic and knowledge of standard trigonometric values is essential	• Year 12 A level Mathematics Pure Maths • Sequences and series from Year 13 • It is a non-calculator exam, so a good knowledge of primes, squares, cubes and standard trigonometric values is essential	• Year 12 A level Mathematics Pure Maths • Logic and reasoning (see TMUA section of the Cambridge Assessment Admissions Testing website for details) • Year 13 topics: sequences, series and radians • It is a non-calculator exam, so a good knowledge of primes, squares, cubes and standard trigonometric values is essential
When to start preparing	In Year 12	From Spring of Year 12	
How to prepare	• Attend regular problem-solving groups, through your school or with the AMSP - details available at ***amsp.org.uk/students/university-admission-tests/step-mat-tmua*** • Work through past papers, then check your answers with published worked solutions • Save some papers for timed practice		*There are fewer past papers for TMUA, as the first exams were in 2017 STEP I, MAT, and TMUA past papers are useful as a starting point for STEP*
	The STEP Support Programme at ***maths.org/step*** provides a structured approach, and provides worked solutions and video solutions. Start in Year 12 with the Foundation modules.	Check out the Oxford Mathematical Institute website at ***maths.ox.ac.uk/study-here/undergraduate-study/prospectus#admissions***. It provides detailed information and advice, practice papers and worked solutions	The multiple choice MAT questions are useful for extra practice, though overall the MAT is harder than TMUA

The Cambridge Assessment Admissions Testing website at ***admissionstesting.org/for-test-takers*** provides lots of information and support for all of these admissions tests.

› Support from the AMSP

If you're interested in sitting these admissions tests, the Advanced Mathematics Support Programme (AMSP) can provide lots of support to help you.

- Each year we run **Problem Solving Matters** in partnership with a number of universities nationally. It's a course designed to prepare you for taking the MAT, TMUA, and similar exams by developing your mathematical thinking and problem-solving skills.

- We provide tailored online courses to support students sitting the STEP, MAT and TMUA examinations.

- We run local regular problem-solving classes designed to support students sitting an admissions test.

There is a small fee for attending some of these courses, but a limited number of free places are available for students at state-funded schools and colleges located in AMSP Priority Areas.

Full details of all of these courses can be found on the AMSP website at *amsp.org.uk/students/university-admission-tests/step-mat-tmua*.

❯ Other useful resources

Steps to University for Mathematical Students (SUMS) (*amsp.org.uk/resource/sums*) is an AMSP web-magazine, which provides information and advice about applying for maths degrees.

The **NRICH** website (*nrich.maths.org*) is an excellent resource for developing problem solving skills.

❯ Entering for the exams

Make sure your school has registered as a centre for the exam(s) you need to take and has entered you in plenty of time. The details they need are available on the Admissions Testing website at *admissionstesting.org*

Finally...

These tests are challenging, but they are also thought-provoking and stimulating.

Preparing for them should keep you busy but can also be enjoyable. It will help to ease your transition to university maths, however well you do in the final exam, and wherever you end up studying.

Have fun!

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Want to know more?

For more information about university admission tests, visit *amsp.org.uk/students/university-admission-tests/step-mat-tmua*