

U2 TUITION

$$PE = mgh(\text{small } h), F = G \frac{Mm}{r^2} = mg \quad c_n = \int \psi_n(x)^* f(x) dx$$

$$B = \frac{\mu_0 I}{2\pi r}$$

$$U_{\text{capacitor}} = \frac{Q^2}{(2C)} = \frac{C V^2}{2}$$

MASTER THE MAT TEST

$$\frac{d^2 \Phi}{d\phi^2} = -m^2 \Phi \Rightarrow \Phi(\phi) =$$

$$\langle H \rangle = \sum_{n=1}^{\infty} \dots$$

$$\Delta L/L = \alpha \Delta T, \Delta V/V = 3\alpha \Delta T$$

$$S = \text{Energy}/(A \Delta t) = cU$$

$$H(a + \psi) = (E + \hbar \omega)$$

$$L_{\text{matter}} = \lambda_{\text{vac}}/n, f_{\text{matter}} = f_{\text{vac}}, c_{\text{matter}} = c_{\text{vac}}/n$$

$$v = \omega r = \frac{2\pi r}{T}, \omega = 2\pi f = \frac{2\pi}{T}, f = 1/T$$

$$\sqrt{\frac{2}{a}} \int_0^a \sin\left(\frac{n\pi}{a} x\right) \psi$$

$$\Psi_n(\mathbf{r}, t) = \psi_n(\mathbf{r}) e^{-iEt + i\mathbf{p}\cdot\mathbf{r}}$$

$$F = \alpha v B \sin \theta$$

Overview

Oxford's MAT test is central to the process - the material is quite unlike anything you face at school and there's no textbook that tells you how to answer the questions, however, there are patterns to be discovered in the questions the examiners set. Our MAT tutors have developed the ability to identify where exactly it is that any given student can make significant "gains" in terms of points achieved, be it a specific type of question, a particular bit of the syllabus, or the student's ability to divide their time in a disciplined fashion.

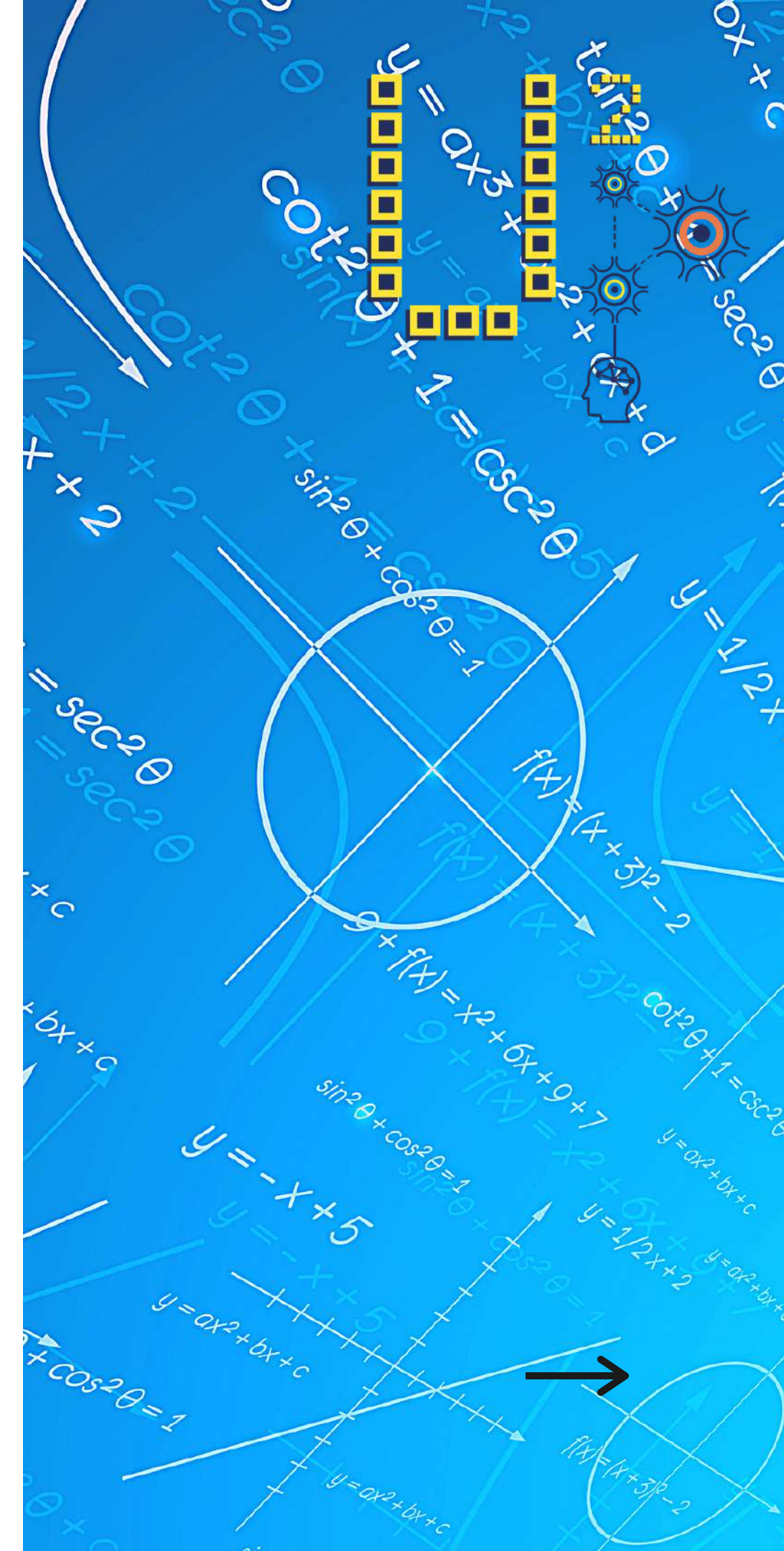
Our MAT test course aims to provide students with a final practice and push under the tutelage of a subject expert! The small group class aims to encourage team discussion and problem-solving, which will serve students well not only for the test, but also the interview process. At interview, students will be tested with very similar questions, but will be tasked with verbal problem solving, often new to students at this age.

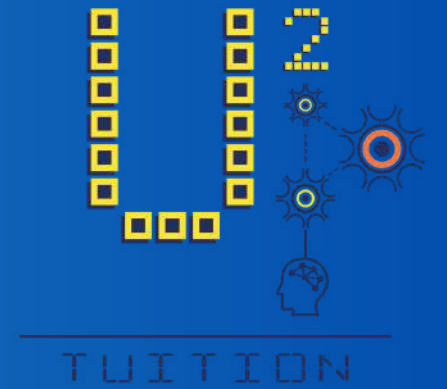
What to Expect

The course host has an extensive collection of MAT-standard maths questions, many of which have not appeared in previous past papers. Students will work through a vast array of practice questions, discuss effective approaches / methods, and how to spot patterns in questioning.

Logistical Details

- All classes will take place over Zoom. Links will be sent out prior to the course commencing.
- The course host will typically set optional tasks between classes.





Our Host

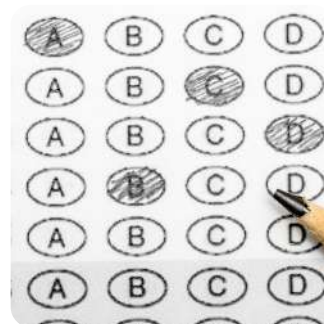
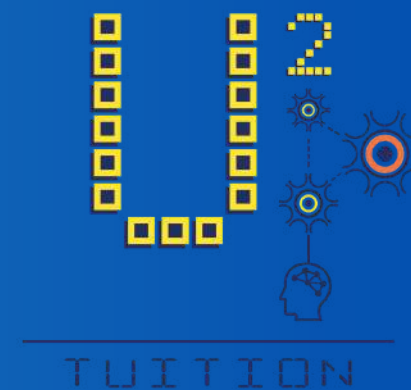


Saskia

Saskia graduated from the University of Oxford with a First Class degree in Mathematics and Philosophy. Saskia now works as a freelance classical singer, and as a private tutor specialising in Oxbridge Maths preparation support. Prior to attending Oxford, Saskia achieved A*, A*, A, A in Maths, Further Maths, Physics and Chemistry A Levels (as well as full marks in her EPQ). Saskia is an enthusiastic and committed tutor, who enjoys encouraging students to find real interest in their studies, as well as overcoming any difficulties and achieving their academic (and extra-curricular) goals. Saskia makes sure to stay up to date with examination syllabi and requirements, but also passionately believes in encouraging an understanding and enthusiasm that will carry students far beyond exams.



The Agenda:



MAT Session I: Mastering the Multiple Choice Questions

In our first session we will look at the first section of the exam, which consists of 10 multiple choice questions. We will work through past questions, considering the following:

- Strategy - are there some obvious answers to rule out? Is process of elimination a good strategy? Clues and ideas to consider if a plan doesn't immediately come to mind.
- Exam technique - These are the more 'quick fire' questions, so we will work on time management (when to move on from a question). We will practise clearly writing down some thoughts, so you can get 'unofficial' credit if you don't get the correct answer.

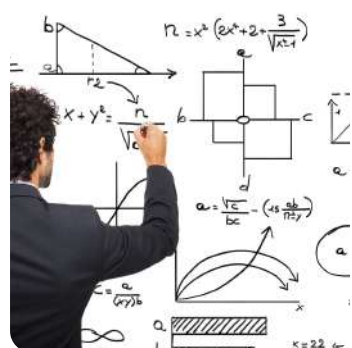
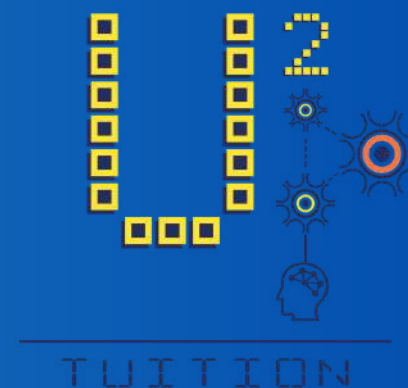


MAT Sessions 2-4: Long Questions

In the later sessions, we will work through past examples of the longer questions. We will group the questions by topic, so that you can get a sense of the way MAT goes deeper into each area of A level material. With each question we will consider the kind of initial thoughts and questions that will get you started effectively, how to rigorously develop these initial thoughts, and how to present your answer optimally. The exam doesn't require knowledge beyond what you have covered so far in the A level, but it requires you to employ that knowledge in a more creative, often more abstract way. The aim of these sessions is to develop this thinking style, by guiding you through example questions.



The Agenda:



MAT Sessions 2-4: Long Questions

- **Lesson 2 focus** - Algebra (including polynomials, logs/powers, sequences/series)
- **Lesson 3 focus** - Graphs (including transformations) and calculus
- **Lesson 4 focus** - Geometry and trigonometry

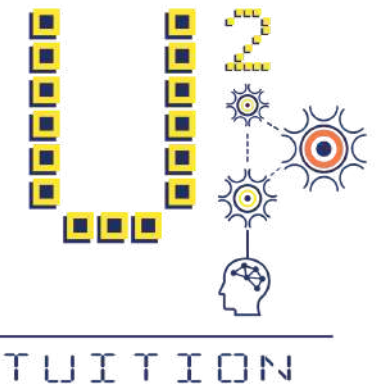
Structured around key topics that frequently appear in the exam - Algebra, Graphs, Geometry, and Trigonometry - these sessions are designed to equip students with the skills and strategies essential to excel in the test.

In each session, Saskia will delve deep into the intricacies of each fundamental topic area. You'll gain a thorough understanding of core concepts, sharpening your problem-solving abilities and developing a strategic approach to tackle various question formats within each topic.



Any questions? Get in touch!

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