

How to get a grade A in Edexcel A level Maths

A grade A means you can handle the whole course, including the harder Year 2 techniques, and choose the right method when the question doesn't tell you. You may still drop marks on the very hardest parts, but you should score well on nearly every question and lose very few marks to slips.

What a grade A asks of you

- Everything at grade B, done quickly and accurately, so you have time for the harder parts.
- The harder Pure techniques: implicit and parametric differentiation, connected rates of change, integration by substitution and by parts, integrating with partial fractions, separable differential equations, $R \cos(\theta \pm \alpha)$, identities with sec, cosec and cot, the binomial expansion for any rational power with its range of validity, proof by contradiction, and iteration and Newton–Raphson.
- The harder Paper 3 content: conditional probability, the normal distribution with an unknown mean or standard deviation, tests for correlation and for a normal mean, projectiles, friction on slopes, moments, and kinematics with vectors and calculus.
- Linking topics: Pure questions that combine two or three areas, and Paper 3 questions that need calculus, vectors or trigonometry.
- Complete, well-argued 'show that' and proof answers, and conclusions in context.

Topics and question types to secure

- Year 2 calculus: the chain, product and quotient rules in combination; implicit and parametric differentiation; integration by substitution and by parts; areas under parametric curves; setting up and solving differential equations.
- Trigonometry: compound and double angle formulae, $R \cos(\theta - \alpha)$ with maximum and minimum values, proving identities, and equations that need an identity first.
- Functions and graphs: composite and inverse functions with their domains and ranges, modulus graphs and equations, and combined transformations.
- Exponentials and logarithms: exponential models, and using a straight-line graph of $\log y$ against $\log x$ or against x to find the constants.
- Statistics: all three types of hypothesis test, critical regions and actual significance levels, conditional probability, and choosing between the binomial and normal models.
- Mechanics: projectiles, friction on slopes, connected particles after a string breaks or a particle hits the ground, moments with ladders and rods, and vectors in kinematics.

A 10-week revision plan

- Every day (about 15 minutes): your Daily 5 and your flashcards.
- Weeks 1 and 2: find your gaps. Sit one timed Mock exam of each paper and use Progress to rank your subtopics, weakest first. Fix any gaps in algebra, functions and trigonometry with the notes, worksheets and Medium Custom papers.
- Weeks 3 to 5: Year 2 Pure (calculus, trig identities, parametric equations, differential equations, numerical methods). For each topic, do a Custom paper at Medium, then one at Hard.
- Weeks 6 and 7: Paper 3. Alternate statistics and mechanics sessions, covering all three hypothesis tests, projectiles, friction and moments.
- Weeks 8 to 10: two timed Mock exams a week, rotating Papers 1, 2 and 3. After each one, redo every dropped question from Progress and add the fix to your error log.
- Once a week, do a mixed Hard Custom paper across the whole course so early topics stay fresh.

Using GCSE Paper Builder

- Custom paper: mix subtopics from different areas at Hard, so you practise spotting the method without being told the topic.
- Mock exams: use full timed papers early to diagnose, and regularly in the final weeks to build speed.
- Progress: work down the weakest-first list, and redo the questions you dropped marks on until you get full marks.
- Notes: use the grade A skill list as a checklist, the worksheets to check a method before a Custom paper, and the cheatsheets for quick review.
- Daily 5 keeps your weakest topics in rotation; Flashcards keep identities, standard results and modelling assumptions fresh.
- The Whiteboard lets you work through questions on screen.
- 1-to-1 tutoring with Chhetri Academy can target the topics holding you back from an A; the first 30-minute trial lesson is free.

Timing strategy in the exam

- Bank the routine questions at about a minute per mark to save time for the long questions near the end.
- If a Hard part is taking too long, write down the method you would use and the first step. That can earn method marks, and you can return later.
- On Paper 3, mechanics questions in several stages can overrun; check the clock at the end of each question.
- Use the last 10 minutes to return to anything you left, then check.

Traps at grade A

- Losing the final mark in a 'show that' by skipping a step or writing a wrong line and then 'correcting' to the given answer.
- Integration by substitution: forgetting to change the limits or to replace dx .
- Parametric areas: integrating with respect to t but using the x limits.
- Binomial expansion of $(a + bx)^n$: not taking out the factor a^n correctly, or forgetting the range of validity.
- Hypothesis tests: the wrong tail, a critical region that goes over the significance level, or a conclusion stated as certain.
- Mechanics: friction in the wrong direction, keeping the tension after a string goes slack, or mixing up sign conventions between stages.
- Using a regression line to predict x from y , or outside the range of the data, without comment.

Free notes, worksheets, practice papers and mock exams at chhetriacademy.com. Written for this site; not taken from past papers.
Stuck? 1-to-1 tutoring with a free 30-minute trial lesson.