

How to get a grade 9 in GCSE Maths Higher (Edexcel)

A grade 9 needs almost every mark on the standard and middle questions, plus a large share of the hardest questions at the end of each paper: unfamiliar problems, proofs and the grade 8 and 9 algebra and geometry. The gap between an 8 and a 9 is usually accuracy and exam technique across all three papers, not one missing topic.

What a grade 9 asks of you

- Near-perfect accuracy on everything up to grade 7. Every slip early in a paper is a mark you have to win back on the hardest questions.
- Secure command of all the grade 8 and 9 content, including the less common topics.
- Solving unfamiliar, multi-topic problems with no hints about the method, and writing rigorous proofs.
- Enough speed to leave 25 to 30 minutes for the final part of each paper.

Topics to master

- Algebra: quadratic inequalities, turning points by completing the square, the equation of a circle and the tangent at a point, solving a line and a circle simultaneously, transformations of graphs ($f(x) + a$, $f(x + a)$, $-f(x)$, $f(-x)$), trigonometric graphs, the n th term of a quadratic sequence, algebraic fractions in equations, inverse and composite functions, algebraic proof.
- Number: rationalising denominators, bounds to a suitable degree of accuracy, fractional and negative indices, proving recurring decimals are fractions.
- Geometry: angles between a line and a plane in 3D, sine and cosine rules in multi-step problems, circle theorem proofs, vector proofs with ratios, similar solids with algebra, frustums, exact trigonometric values.
- Rates of change: gradients of curves using tangents, estimating areas under curves with trapezia, and interpreting both in context.
- Probability and statistics: conditional probability with algebra (forming and solving a quadratic), set notation in Venn diagrams, histograms with unequal classes, the product rule for counting.

Question types to master

- The final questions on each paper, usually 4 to 6 marks each, which combine topics: a probability question that becomes a quadratic, a circle-and-line intersection, a vector proof, a 3D trigonometry problem.
- Algebraic, geometric and vector proofs, with a conclusion that states exactly what has been proved.
- “Show that” with exact answers, such as an area in the form $a + b\sqrt{3}$ or a length in terms of π .
- Bounds questions that ask you to justify the accuracy of your answer.
- Graph questions: sketching transformations, finding turning points, and finding the equation of a tangent to a circle.
- Long unstructured problems in unfamiliar contexts, where you have to invent the method and decide what to calculate first.

Revision week by week (12 weeks)

- Aim for five or six sessions a week of 45 to 60 minutes, plus the Daily 5 every day and one proof or unstructured problem each day.
- Week 1: sit all three mock exams on this site, timed. In Progress, note every subtopic where you lost any marks, even small ones.
- Weeks 2 to 4: grade 8 and 9 algebra. Custom papers on Hard, then Extreme once you are scoring well on Hard.
- Weeks 5 and 6: geometry (3D trigonometry, circle theorems and circle equations, vectors, similar solids).
- Week 7: number, rates of change, and the harder probability and statistics.
- Weeks 8 to 10: two full timed papers a week, alternating non-calculator and calculator, using the site's mocks and Pearson past papers from your teacher. After each, redo every dropped mark and find out why you dropped it.
- Weeks 11 and 12: Extreme custom papers on your two weakest areas, a last timed mock, your mistakes list and the exam technique guide.

How to use this website

- Notes: go through the grade-by-grade skill lists all the way to grade 9 and tick the checklist. Anything unticked becomes a custom paper topic.
- Custom paper: work mainly on Hard (around grades 7 to 9). Extreme goes beyond grade 9, so use it for stretch once Hard feels comfortable.
- Mock exams: sit them under strict time and aim to finish with at least 10 minutes to check. Treat every lost mark as something to fix.
- Progress: look beyond the weakest subtopics. A subtopic at 80% still has a lost mark to explain, and redoing those questions is how you remove careless errors.
- Daily 5 and Flashcards: short daily practice keeps older topics fresh while you focus on the hardest content.
- Use the Whiteboard to sketch graphs and diagrams before you commit to a method.
- Written reasoning is hard to mark yourself. A free 30-minute trial lesson with Chhetri Academy can give you feedback on your proofs and extended answers.

Timing strategy in the exam

- Move briskly through the first half, in about 30 minutes, but check each answer as you write it. Speed is useless if it causes slips.
- Give the second half about 45 minutes, and keep 10 to 15 minutes to check.
- If a final question stalls, write down the set-up (the equation, the diagram labels, the first process), move on, and come back with fresh eyes.
- Check by redoing key steps and rereading each question for the answer form, not just by glancing over your work.

Traps at grade 9

- Careless slips early in the paper: the most common reason strong students miss a 9.
- Proofs without a final concluding sentence, or with numerical examples instead of algebra.
- “Show that” answers that skip steps or start from the given answer.
- Not rejecting impossible solutions, such as a negative length or a probability above 1, or not saying why you rejected one.
- Decimals where an exact answer was asked for: surds, fractions or multiples of π .
- Bounds: giving an answer to a suitable degree of accuracy without the reason.
- Graph transformations: for positive a , $f(x + a)$ moves the graph a units to the left, not to the right.
- Missing a simpler route by ignoring an earlier part or the word “hence”, then running out of time.

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.