SPECA REVISION CHECKLIST

AQA GCSE Maths

Rate each topic: tick **R** if you are not there yet, **A** if you are getting there, **G** if you are confident. Start with the reds. Every topic links to free worked examples and notes.

H marks content that is for the Higher tier only. If you sit Foundation, you can leave those lines blank.

Scan for every topic, free

TOPIC AND WHAT I CAN DO		RED, AMBER, GREEN
Solving linear equations	speca.co.uk/resources/gcse-maths/solving-linear-equations/	R A G
• I can solve equations with the unknown on both sides, with brackets, or with a fraction of x		
• I can turn a worded problem into an equation, solve it, and check by substituting back		
H I can solve equations with the unknown in a denominator, such as 3/(x + 1) = 2		
H I can rearrange a formula to make a different letter the subject		
Quadratic equations	speca.co.uk/resources/gcse-maths/quadratic-equations/	R A G
• I can solve a quadratic by factorising when x^2 has no number in front, using the zero product rule		
• I can solve $x^2 = a$, remembering both the positive and the negative answer		
H I can factorise when x^2 has a number in front, and complete the square		
H I can use the quadratic formula, and solve quadratics set in words or with a linear equation		
Ratio and proportion	speca.co.uk/resources/gcse-maths/ratio-and-proportion/	R A G
• I can simplify a ratio, share an amount in a given ratio, and turn a ratio into a fraction		
• I can compare best buys using unit prices, and use direct and simple inverse proportion		
H I can solve ratio problems with algebra, and write inverse proportion as y = k/x		
Percentages	speca.co.uk/resources/gcse-maths/percentages/	R A G
• I can find a percentage of an amount, and work out a percentage increase or decrease		
• I can work out simple interest, and compound interest, growth and decay in straightforward cases		
• I can find the original amount before a single percentage change		
H I can use multipliers for successive changes and for multi-step reverse percentages		
Pythagoras' theorem	speca.co.uk/resources/gcse-maths/pythagoras-theorem/	R A G
• I can find the hypotenuse, and find a shorter side, in a right-angled triangle		
• I can use Pythagoras in simple 2D problems such as a ladder against a wall		
H I can use it in 3D, test whether a triangle is right-angled, and leave answers as surds		
Right-angled trigonometry (SOHCAHTOA)	speca.co.uk/resources/gcse-maths/right-angled-trigonometry/	R A G
• I can label opposite, adjacent and hypotenuse, then choose sin, cos or tan		
• I can find a missing side or a missing angle, including angles of elevation and depression		
• I can recall the exact trig values for 0°, 30°, 45°, 60° and 90° without a calculator		
H I can use the sine rule, the cosine rule and area = ½ab sin C		
Area and volume of compound shapes	speca.co.uk/resources/gcse-maths/area-and-volume-compound-shapes/	R A G
• I can find areas of triangles, parallelograms, trapezia, circles and compound shapes		
• I can find circumference and area of a circle, including answers in terms of π		
• I can find the volume of prisms and cylinders, and the volume and surface area of cones, spheres and pyramids		
H I can solve frustum and other composite 3D problems, and rearrange a formula to find a missing length		
Sequences	speca.co.uk/resources/gcse-maths/sequences/	R A G
• I can continue a sequence and describe its term-to-term rule		
• I can find and use the nth term of a linear sequence, and check whether a number is in it		
• I can recognise square, triangular, Fibonacci-type, quadratic and geometric sequences		
H I can find the nth term of a quadratic sequence or a geometric sequence		
Probability	speca.co.uk/resources/gcse-maths/probability/	R A G
• I can work out the probability of one event, and use the fact that probabilities add up to 1		
• I can use sample space diagrams, two-way tables and relative frequency		
• I can draw and use tree diagrams with the AND and OR rules		
H I can use tree diagrams without replacement, and solve conditional probability problems		

TOPIC AND WHAT I CAN DO		RED, AMBER, GREEN

Averages and spread

speca.co.uk/resources/gcse-maths/averages-and-spread/ R A G

- I can find the mean, median, mode and range from a list and from a frequency table
- I can find the modal class and estimate the mean from grouped data
- I can compare two sets of data using an average and the range
- H I can use cumulative frequency graphs and box plots to find the median and interquartile range

Graphs and simultaneous equations

speca.co.uk/resources/gcse-maths/graphs-and-simultaneous-equations/ R A G

- I can plot points in all four quadrants, and draw straight-line and quadratic graphs from a table
- I can find the gradient and y-intercept from $y = mx + c$, and solve simultaneous equations from a graph
- I can read real-life graphs such as conversion graphs and distance-time graphs
- H I can solve simultaneous equations by elimination or substitution, including a linear and a quadratic
- H I can find parallel and perpendicular lines, and sketch cubic, reciprocal and exponential graphs

Transformations and constructions

speca.co.uk/resources/gcse-maths/transformations-and-constructions/ R A G

- I can translate, reflect, rotate and enlarge shapes, and describe a single transformation fully
- I can construct perpendicular bisectors, angle bisectors and an SSS triangle, and draw simple loci
- H I can enlarge by a fractional or negative scale factor, and describe a combination of two transformations
- H I can shade a region that meets two or more loci conditions at once

Angle properties and similarity

speca.co.uk/resources/gcse-maths/angle-properties-and-similarity/ R A G

- I can find missing angles on straight lines, in triangles and quadrilaterals, and with parallel lines
- I can work out interior and exterior angles of polygons using $(n - 2) \times 180°$
- I can spot congruent triangles (SSS, SAS, ASA, RHS) and use a scale factor on similar shapes
- H I can prove triangles are similar, and use area (scale factor squared) and volume (scale factor cubed)

Indices, standard form, and surds

speca.co.uk/resources/gcse-maths/indices-standard-form-and-surds/ R A G

- I can use the laws of indices, including zero and negative powers
- I can write numbers in standard form, and compare, multiply and divide them
- H I can use fractional indices, and add and subtract numbers in standard form
- H I can simplify, multiply and divide surds, and rationalise a denominator

Expanding, factorising, and inequalities

speca.co.uk/resources/gcse-maths/expanding-factorising-and-inequalities/ R A G

- I can expand single and double brackets and simplify, and factorise by taking out the highest common factor
- I can solve linear inequalities and show the answer on a number line or in inequality notation
- H I can factorise harder quadratics and a difference of two squares, and factorise by grouping
- H I can solve quadratic inequalities, and show a two-variable inequality as a region on a graph

Compound measures and proportion

speca.co.uk/resources/gcse-maths/compound-measures-and-proportion/ R A G

- I can use speed = distance ÷ time and density = mass ÷ volume, and convert units of speed
- I can use direct proportion $y = kx$, finding k and solving problems with it
- H I can use pressure = force ÷ area, and set up formulae with compound units
- H I can use inverse proportion and its graph, and solve growth and decay problems with multipliers

Vectors and bearings

speca.co.uk/resources/gcse-maths/vectors-and-bearings/ R A G

- I can use column vectors: add, subtract, multiply by a number, and find a resultant
- I can use three-figure bearings and angle facts to solve simple bearing problems
- H I can use vectors to show that points are in a line or that lines are parallel
- H I can solve bearing problems that need trigonometry or a scale diagram

Circle theorems

speca.co.uk/resources/gcse-maths/circle-theorems/ R A G

- I can name the parts of a circle: radius, diameter, chord, tangent, arc, sector, segment
- H I can use the semicircle, tangent-radius, angle-at-centre, same-segment and cyclic quadrilateral theorems
- H I can use the chord, equal tangents and alternate segment theorems

Data representation and scatter graphs

speca.co.uk/resources/gcse-maths/data-representation-and-scatter-graphs/ R A G

- I can draw and read bar charts, pictograms, pie charts, frequency polygons and time-series graphs
- I can draw a scatter graph, describe the correlation, and use a line of best fit by eye
- H I can describe the strength of correlation, and predict beyond the data while judging how reliable that is
- H I can draw histograms with unequal class widths, and spot bias in sampling methods

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