

Revision for Year 7 Maths Exams 7A1 & 7B1

Exams: You will sit two one hour papers.
The first will be non-calculator and the second calculator.

This booklet lists all of the topics that you have covered in your Maths lessons this year – if there is anything you are unsure about make sure you ask your Maths teacher.

Maths Revision Tips

- The only way to revise for Maths is to **DO** Maths! Some time making notes can be useful but most of your time must be spent answering questions, the websites below will be helpful for this;
 - **MyMaths** <https://mymaths.co.uk>
login: southam password: integer1
 - **BBC Bitesize** <https://www.bbc.com/education>
 - **EMaths** <https://emaths.co.uk/>
This has the old style SATS papers but they are still a good way to practice your Maths.
- Start with the topics you find most difficult, going over things you can already do is a waste of your time.
 - Get help if you don't understand something.
- Practice using your calculator – it is important that you know how YOUR calculator works as they are all different.

Direct proportion	<ul style="list-style-type: none"> Recognise when values are in direct proportion Plot graphs and read values to solve problems
FINANCE: Interpret financial graphs	<ul style="list-style-type: none"> Interpret graphs from different sources Understand financial graphs
Distance-time graphs	<ul style="list-style-type: none"> Draw and interpret distance-time graphs Use distance-time graphs to solve problems
Rates of change	<ul style="list-style-type: none"> Interpret graphs that are curved Interpret real-life graphs
Misleading graphs	<ul style="list-style-type: none"> Understand when graphs are misleading
Prime factor decomposition	<ul style="list-style-type: none"> Write the prime factor decomposition of a number Use prime factor decomposition to find the HCF or LCM of two numbers
Laws of indices	<ul style="list-style-type: none"> Work out the laws of indices for positive powers Show that any number to the power of zero is 1 Use the laws of indices for multiplying and dividing
STEM: Powers of 10	<ul style="list-style-type: none"> Use and understand powers of 10 Use the prefixes associated with powers of 10 Understand the effect of multiplying and dividing by any integer power of 10
Calculating and estimating	<ul style="list-style-type: none"> Calculate with powers Round to a number of significant figures
Simplifying expressions	<ul style="list-style-type: none"> Simplify expressions involving powers and brackets Understand the meaning of an identity
More simplifying	<ul style="list-style-type: none"> Use index laws in algebraic calculations and expressions Simplify expressions with powers
Expanding and factorising expressions	<ul style="list-style-type: none"> Write and simplify expressions involving brackets and powers Factorise an algebraic expression
Substituting and solving	<ul style="list-style-type: none"> Substitute integers into expressions Construct and solve equations
Recurring decimals	<ul style="list-style-type: none"> Recognise fractional equivalents to some recurring decimals Change a recurring decimal into a fraction
Using percentages	<ul style="list-style-type: none"> Calculate percentages Work out an original quantity before a percentage increase or decrease
Percentage change	<ul style="list-style-type: none"> Calculate percentage change
FINANCE: Repeated percentage change	<ul style="list-style-type: none"> Calculate the effect of repeated percentage changes
Plans and elevations	<ul style="list-style-type: none"> Use 2D representation of 3D solids
Surface area of prisms	<ul style="list-style-type: none"> Sketch nets of 3D solids Calculate the surface area of prisms
Volume of prisms	<ul style="list-style-type: none"> Calculate the volume of right prisms
Circumference of a circle	<ul style="list-style-type: none"> Name different parts of a circle Calculate the circumference Calculate the radius or diameter when you know the circumference
Area of a circle	<ul style="list-style-type: none"> Calculate the area of a circle Calculate the radius or diameter when you know the area
Cylinders	<ul style="list-style-type: none"> Calculate the volume and surface area of a cylinder
Pythagoras' theorem	<ul style="list-style-type: none"> Use Pythagoras' theorem in right-angled triangles

Comparing probabilities	<ul style="list-style-type: none"> • Calculate and compare probabilities • Decide if a game is fair
Mutually exclusive events	<ul style="list-style-type: none"> • Identify mutually exclusive outcomes and events • Find the probability of mutually exclusive outcomes and events • Find the probability of an event not happening
Estimating probabilities	<ul style="list-style-type: none"> • Calculate the relative frequency of a value • Use relative frequency to make estimates • Use relative frequency to estimate the probability of an event • Use estimated probability to calculate expected frequencies
Experimental probability	<ul style="list-style-type: none"> • Carry out a probability experiment • Estimate probability using data from an experiment • Work out the expected results when an experiment is required
Probability diagrams	<ul style="list-style-type: none"> • List all the possible outcomes of one or two events in sample space diagrams or Venn diagrams • Calculate probabilities of repeated events
Tree diagrams	<ul style="list-style-type: none"> • Use tree diagrams to find the probabilities of two or more events
Maps and scales	<ul style="list-style-type: none"> • Use scales in maps and plans • Use and interpret maps
Bearings	<ul style="list-style-type: none"> • Measure and use bearings • Draw diagrams to scale using bearings
Scales and ratio	<ul style="list-style-type: none"> • Draw diagrams to scale • Use and interpret scale drawings
Congruent and similar shapes	<ul style="list-style-type: none"> • Identify congruent and similar shapes • Use congruence to solve problems in triangles and quadrilaterals
Solving geometry problems	<ul style="list-style-type: none"> • Use similarity to solve problems in 2D shapes

Accurate drawings	<ul style="list-style-type: none"> • Draw triangles accurately using a ruler and protractor • Draw diagrams to scale
Constructing shapes	<ul style="list-style-type: none"> • Draw accurate nets of 3D solids • Construct triangles using a ruler and compasses • Construct nets of 3D solids using a ruler and compasses
Constructions 1	<ul style="list-style-type: none"> • Bisect a line using a ruler and compasses • Construct perpendicular lines using a ruler and compasses
Constructions 2	<ul style="list-style-type: none"> • Bisect angles using a ruler and compasses • Draw accurate diagrams to solve problems
Loci	<ul style="list-style-type: none"> • Draw a locus • Use loci to solve problems
Plotting linear graphs	<ul style="list-style-type: none"> • Plot straight-line graphs • Find the y-intercept of a straight-line graph
The gradient	<ul style="list-style-type: none"> • Find the gradient of a straight-line graph • Plot graphs using the gradient and the y-intercept
$y = mx + c$	<ul style="list-style-type: none"> • Use $y = mx + c$ • Find the equation of a straight-line graph
Parallel and perpendicular lines	<ul style="list-style-type: none"> • Identify parallel and perpendicular lines
Inverse functions	<ul style="list-style-type: none"> • Find the inverse of a linear function
STEM: Non-linear graphs	<ul style="list-style-type: none"> • Plot and use non-linear graphs
Reflection and translation	<ul style="list-style-type: none"> • Describe and carry out translations • Describe and carry out reflections
Rotation	<ul style="list-style-type: none"> • Describe and carry out rotations
Enlargements	<ul style="list-style-type: none"> • Enlarge a shape • Describe an enlargement
More enlargement	<ul style="list-style-type: none"> • Enlarge a shape using a negative scale factor • Enlarge a shape using a fractional scale factor
STEM: Combining transformations	<ul style="list-style-type: none"> • Transform 2D shapes using a combination of reflection, rotation, enlargement and translation
2D shapes and 3D solids	<ul style="list-style-type: none"> • Identify planes of reflection symmetry in 3D solids • Find the perimeter and area of 2D shapes after enlargements • Find the volume of 3D solids after enlargements