Unit 2 Foundation Tier

Note: Higher tier students will also be assessed on foundation tier content.

Remind yourself what is included in the formula sheet: It is in the inside cover of the exam papers and can be found here: Foundation Tier, Higher Tier.

Revision sheets can be found on the Pearson website, in the Assessment support section, here.

Content	Notes	Y/N
Number		
Powers and roots: Unit 2 Revision Sheet A Number Foundation & Higher		
Express integers as a product of powers of prime factors	Express 180 as a product of its prime factors	
Find highest common factors (HCF) and lowest common multiples (LCM)		
Percentages: Unit 2 Revision Sheet A Number Foundation & Higher		
Understand the multiplicative nature of percentages as operators	15% of 120 = $\frac{15}{100}\times 120$	
Solve simple percentage problems, including percentage increase and decrease	Azmol is paid £1500 per month. He is going to get a 3% increase in the amount of money he is paid. Work out how much money Azmol will be paid per month after the increase	
Use reverse percentages	In a sale, prices were reduced by 30%. The sale price of an item was £17.50 Calculate the original price of the item	
Ratio and proportion: Unit 2 Revision Sheet A Number Foundation & Higher		
Use ratio notation, including reduction to its simplest form and its various links to fraction notation	Express in the form 1 : *n.* Red and blue paint are mixed in the ratio of 3 : 4. What fraction of the mixed paint is red?	
Divide a quantity in a given ratio or ratios	Share £416 in the ratio 5 : 3 or 4 : 3 : 1	
Use the process of proportionality to evaluate unknown quantities	5 chocolate bars cost $5.75. 2 chocolate bars and 3 packets of sweets cost $7.85. Work out the cost of one packet of sweets	
Calculate an unknown quantity from quantities that vary in direct proportion	*s* varies directly as *t* Find the missing value in a table	
Solve word problems about ratio and proportion	Including maps and scale diagrams	

Content	Notes	Y/N
Standard form: Unit 2 Revision Sheet A Number Foundation & Higher		
Calculate with and interpret numbers in the form $a \times 10^n$ where n is an integer and $1 \leq a < 10$	150 000 000 = 1.5×10^8	
Algebra		
Expressions and formulae: Unit 2 Revision Sheet B Algebra Simultaneous Equations Inequalities Sequences Foundation & Higher		
Understand that a letter may represent an unknown number or a variable		
Use correct notational conventions for algebraic expressions and formulae	Remember to write 3n instead of 3 x n	
Substitute positive and negative integers, decimals and fractions for words and letters in expressions and formulae	Evaluate $2x - 3y$ when $x = 4$ and $y = -5$	
Use formulae from mathematics and other real-life contexts expressed initially in words or diagrammatic form and convert to letters and symbols		
Derive a formula or expression	There are 6 batteries in a small packet of batteries. There are 9 batteries in a large packet of batteries. Chow buys m small packets of batteries and g large packets of batteries. The total number of batteries Chow buys is T. Write down a formula, in terms of m and g, for T	
Change the subject of a formula where the subject appears once	Make r the subject of $A = \pi r^2$ Make t the subject of $v = u + at$	
Simultaneous linear equations: Unit 2 Revision Sheet B Algebra Simultaneous Equations Inequalities Sequences Foundation & Higher		
Calculate the exact solution of two simultaneous equations in two unknowns	$x + y = 14$, $x - y = 2$ $2a + 5b = 12$, $3a + b = 5$	
Inequalities: Unit 2 Revision Sheet B Algebra Simultaneous Equations Inequalities Sequences Foundation & Higher		
Understand and use the symbols >,<, $\geqslant$ and $\leqslant$	To include double- ended inequalities e.g. $1 < x \leqslant 5$	
Understand and use the convention for open and closed intervals on a number line		
Solve simple linear inequalities in one variable and represent the solution set on a number line	$3x - 2 < 10$, so $x < 4$ $7 - x \leqslant 5$, so $x \leqslant 2$ $3 < x + 2 \leqslant 5$ so $1 < x \leqslant 3$	

Content	Notes	Y/N
Represent simple linear inequalities on rectangular Cartesian graphs	Shade the region defined by the inequalities $x \leqslant 0$, $y \leqslant 1$, $x + y \leqslant 5$	
Identify regions on rectangular Cartesian graphs defined by simple linear inequalities	Conventions for the inclusion of boundaries are not required	
Sequences: Unit 2 Revision Sheet B Algebra Simultaneous Equations Inequalities Sequences Foundation & Higher		
Generate terms of a sequence using term-to-term and position-to-term definitions of the sequence	Including odd, even, squares, multiples and powers	
Find subsequent terms of an integer sequence and the rule for generating it	5, 9, 13, 17, … (add 4) 1, 2, 4, 8, … (multiply by 2)	
Use linear expressions to describe the nth term of arithmetic sequences	1, 3, 5, 7, 9, … nth term is $2n - 1$ nth term is $4n + 3$, write down the first 3 terms of the sequence	
Shape and Space		
Polygons: Unit 2 Revision Sheet D Polygons Congruency Symmetry Bearings Constructions Foundation & Higher		
Understand the term 'regular polygon' and calculate interior and exterior angles of regular polygons	Work out the size of each exterior angle of a regular polygon with 15 sides	
Understand and use the angle sum of polygons	For a polygon with n sides, the sum of the interior angles is $(2n - 4)$ right angles	
Understand congruence as meaning the same shape and size	Congruent shapes will be the same shape and size but may be in a different orientation	
Understand that two or more polygons with the same shape and size are said to be congruent to each other	Candidates will be asked to identify congruent shapes without giving formal reasons for congruency	
Symmetry: Unit 2 Revision Sheet D Polygons Congruency Symmetry Bearings Constructions Foundation & Higher		
Identify any lines of symmetry and the order of rotational symmetry of a given two-dimensional figure	Name a quadrilateral with no lines of symmetry and order of rotational symmetry of 2	
Measures: Unit 2 Revision Sheet D Polygons Congruency Symmetry Bearings Constructions Foundation & Higher		
Interpret scales on a range of measuring instruments	To include images of rulers, protractors and weighing scales	

Content	Notes	Y/N
Calculate time intervals in terms of the 24-hour and the 12-hour clock	Use am and pm	
Make sensible estimates of a range of measures		
Understand angle measure including three-figure bearings	Bearings are measured clockwise, from North and always have 3 figures. Eg. we write 045° and not 45°	
Measure an angle to the nearest degree	You must have a protractor in the examination. If you have forgotten it then please speak to the exam invigilator	
Construction: Unit 2 Revision Sheet D Polygons Congruency Symmetry Bearings Constructions Foundation & Higher		
Measure and draw lines to the nearest millimetre		
Construct triangles and other two-dimensional shapes using a combination of a ruler, a protractor and a pair of compasses	You must have compasses in the examination. If you have forgotten it then please speak to the exam invigilator	
Solve problems using scale drawings		
Use straight edge and a pair of compasses to: (i) construct the perpendicular bisector of a line segment (ii) construct the bisector of an angle		
Circle properties: Unit 2 Revision Sheet E Circle Theorems Foundation & Higher		
Recognise the terms 'centre', 'radius', 'chord', 'diameter', 'circumference', 'tangent', 'arc', 'sector' and 'segment' of a circle		
Understand chord and tangent properties of circles	Two tangents from a point to a circle are equal in length Tangents are perpendicular to the radius at the point of contact The line from the centre of a circle which is perpendicular to a chord bisects the chord (and the converse)	
3D shapes and volume: Unit 2 Revision Sheet F 3D Shapes Similarity Foundation & Higher		
Find the surface area of simple shapes using the area formulae for triangles and rectangles	You are expected to know the formulae to calculate their area	

Content	Notes	Y/N
Find the surface area of a cylinder	The formula for the curved surface area of a cylinder is included in the formula sheet in the inside from cover of an exam paper. Note that the total surface area of a cylinder includes the area of the circle on each end	
Find the volume of prisms, including cuboids and cylinders, using an appropriate formula	See formula sheet	
Convert between units of volume within the metric system	e.g. cm^3 to m^3 and vice versa and 1 litre = $1000\,cm^3$	
Similarity: Unit 2 Revision Sheet F 3D Shapes Similarity Foundation & Higher		
Understand and use the geometrical properties that similar figures have corresponding lengths in the same ratio but corresponding angles remain unchanged	Similar shapes are an enlargement of each other, though may be in a different orientation	
Use and interpret maps and scale drawings		
Transformation geometry: Unit 2 Revision Sheet G Transformations Foundation & Higher		
Understand that rotations are specified by a centre and an angle	When describing a rotation, you should give the coordinates of the centre of rotation, the angle and the direction, either clockwise or anticlockwise	
Rotate a shape about a point through a given angle		
Recognise that an anti-clockwise rotation is a *positive* angle of rotation and a clockwise rotation is a *negative* angle of rotation		
Understand that reflections are specified by a mirror line	Such as $x = 1$, $y = 2$, $y = x$, $y - x = 0$	
Construct a mirror line given an object and reflect a shape given a mirror line	e.g. reflect a triangle in the line $y = x$	
Understand that translations are specified by a distance and direction		
Translate a shape		
Understand and use column vectors in translations		
Understand that rotations, reflections and translations preserve length and angle so that a transformed shape under any of these transformations remains congruent to the original shape		
Understand that enlargements are specified by a centre and a scale factor	The centre of enlargement is described by coordinates. Positive scale factor only (including fractions)	

Content	Notes	Y/N
Understand that enlargements preserve angles and not lengths		
Enlarge a shape given the scale factor	With or without a centre given	
Identify and give complete descriptions of transformations	Questions commonly ask you to describe the single transformation to move shape A to shape B. You will not be given credit if you use more than one transformation as the description	
Handling Data		
Graphical representation of data: Unit 2 Revision Sheet H Representation of Data and Statistical Measures Foundation & Higher		
Use different methods of presenting data	Pictograms, bar charts and pie charts	
Use appropriate methods of tabulation to enable the construction of statistical diagrams		
Interpret statistical diagrams	Does not include tables	
Statistical measures: Unit 2 Revision Sheet H Representation of Data and Statistical Measures Foundation & Higher		
Understand the concept of average	Data could be in a list or tabulated form. Here are the temperatures in Madrid at midnight for one week. −7°C, −6°C, −1°C, 4°C, 0°C, 0°C , 3°C Work out the mean temperature	
Calculate the mean, median, mode and range for a discrete data set	In a survey, Wendy asked nine of her friends how many foreign countries they had visited. Here are her results: 7, 3, 4, 3, 9, 10, 2, 3, 4 . Find the mode of her results. Find the median of her results. Find the range of her results	
Calculate an estimate for the mean for grouped data		
Identify the modal class for grouped data		