



Unit 1 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		
Integers: Unit 1 Revision Sheet A Fractions Decimal Percentages Foundation & Higher		
Understand and use integers (positive, negative and zero)		
Understand place value	Write in figures the number two thousand and eighteen	
Use directed numbers in practical situations	Here are the temperatures, in °C, in Paris at midnight for one week. -3 -7 -2 -6 -9 -1 -5 . Write down the lowest temperature	
Order integers	Write these numbers in order of size. Start with the smallest number. 73 138 36 219 89	
Use the four rules of addition, subtraction, multiplication and division	Neha writes $4 + 9 \times 3 = 13 \times 3 = 39$. Her teacher says that Neha has made a mistake. What mistake has Neha made?	
Use brackets and the hierarchy of operations	Write brackets in this calculation so that the answer is correct $7 - 2 \times 5 + 7 = 60$	
Use the terms 'odd', 'even', 'prime numbers', 'factors' and 'multiples'	Write down the prime number whose value is nearest to 33	
Identify prime factors, common factors and common multiples	Write down all the factors of 30	
Fractions: Unit 1 Revision Sheet A Fractions Decimal Percentages Foundation & Higher		
Understand and use equivalent fractions, simplifying a fraction by cancelling common factors	$\frac{8}{60} = \frac{2}{15}$ in its simplest form (lowest terms)	
Understand and use mixed numbers and vulgar fractions		
Identify common denominators		
Order fractions and calculate a given fraction of a given quantity		
Express a given number as a fraction of another number	Write 14 as a fraction of 28, giving your answer in its simplest form	
Use common denominators to add and subtract fractions and mixed numbers	$\frac{2}{3} + \frac{5}{7}, 3\frac{1}{5} - 2\frac{2}{3}$	



Content	Notes	Y/N
Convert a fraction to a decimal or a percentage	$\frac{3}{5} = 0.6 = 60\%$ $\frac{4}{9} = 0.4444... = 44.4...%$	
Understand and use unit fractions as multiplicative inverses	$3 \div 5 = 3 \times \frac{1}{5}$	
Multiply and divide fractions and mixed numbers	$\frac{2}{3} \times \frac{5}{7}, 3\frac{1}{5} \div 2\frac{2}{3}$	
Decimals: Unit 1 Revision Sheet A Fractions Decimal Percentages Foundation & Higher		
Use decimal notation	Work out the number which is exactly halfway between 1.2 and 1.4	
Understand place value	Write down the value of the 3 in the number 7.432	
Order decimals	Write these decimals in order of size. Start with the smallest decimal. 0.204, 0.24, 0.04, 0.2, 0.042	
Convert a decimal to a fraction or a percentage	Terminating decimals only	
Recognise that a terminating decimal is a fraction	$0.65 = \frac{65}{100} = \frac{13}{20}$	
Powers and roots: Unit 1 Revision Sheet A Fractions Decimal Percentages Foundation & Higher		
Identify square numbers and cube numbers	Find the cube number that is between 20 and 40	
Calculate squares, square roots, cubes and cube roots	Find the cube root of 343	
Use index notation and index laws for multiplication and division of positive and negative integer powers including zero	Write down the value of n, given that $(53)^7 = 5n$	
Set language and notation: Unit 1 Revision Sheet F Probability Venn Diagrams and Handling Data Foundation & Higher		
Understand the definition of a set		
Use the set notation \cup , \cap and \in and \notin	E = universal set \emptyset = empty set	
Understand the concept of the universal set and the empty set and the symbols for these sets		
Understand and use the complement of a set	Use the notation A'	
Use Venn diagrams to represent sets		
Percentages: Unit 1 Revision Sheet A Fractions Decimal Percentages Foundation & Higher		
Understand that 'percentage' means 'number of parts per 100'		
Express a given number as a percentage of another number	Express 12 as a percentage of 75	
Express a percentage as a fraction and as a decimal	Express 12.5% as a fraction	



Content	Notes	Y/N
Degree of accuracy: Unit 1 Revision Sheet A Fractions Decimal Percentages Foundation & Higher		
Round integers to a given power of 10	Round 56702 to the nearest ten thousand	
Round to a given number of significant figures or decimal places	Round 3.421 to two significant figures	
Identify upper and lower bounds where values are given to a degree of accuracy	The length of a fence is 137 metres, correct to the nearest metre. Write down the lower bound for the length of the fence	
Use estimation to evaluate approximations to numerical calculations	By rounding values to 1 significant figure	
Applying number: Unit 1 Revision Sheet A Fractions Decimal Percentages Foundation & Higher		
Use and apply number in everyday personal, domestic or community life	The cost of a litre of petrol in Hong Kong is 17.50 Hong Kong dollars (\$). Chen buys 25 litres of petrol in Hong Kong. The only money he has to pay with are \$50 notes. What is the smallest number of \$50 notes he needs?	
Carry out calculations using standard units of mass, length, area, volume and capacity	Metric units only	
Understand and carry out calculations using time, and carry out calculations using money, including converting between currencies	1 euro = 1.45 US Dollars. Change 320 euros to US dollars	
Electronic calculators: Unit 1 Revision Sheet A Fractions Decimal Percentages Foundation & Higher		
Use a scientific electronic calculator to determine numerical results		
Algebra		
Use of symbols: Unit 1 Revision Sheet B Algebra Foundation & Higher		
Understand that symbols may be used to represent numbers in equations or variables in expressions and formulae	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	
Understand that algebraic expressions follow the generalised rules of arithmetic	$a \times b = b \times a$ as $3 \times 4 = 4 \times 3$	
Use index notation for positive and negative integer powers (including zero)	$a \times a \times a = a^3$ $a^{-5} = \frac{1}{a^5}$; $a^0 = 1$	



Content	Notes	Y/N
Use index laws in simple cases	$x^m \times x^n = x^{m+n}$ $x^m \div x^n = x^{m-n}$ $(x^m)^n = x^{mn}$	
Algebraic manipulation: Unit 1 Revision Sheet B Algebra Foundation & Higher		
Evaluate expressions by substituting numerical values for letters	$T = 5m - 6n$ Work out the value of T when $m = 4.2$ and $n = -2.5$	
Collect like terms	$4x^2 - 25y^2$	
Multiply a single term over a bracket	$3x(2x + 5)$	
Take out common factors	Factorise fully $8xy + 12y^2$	
Expand the product of two simple linear expressions	Expand and simplify $(x + 8)(x - 5)$	
Understand the concept of a quadratic expression and be able to factorise such expressions (limited to $x^2 + bx + c$)	Factorise $x^2 + 10x + 24$	
Linear equations: Unit 1 Revision Sheet B Algebra Foundation & Higher		
Solve linear equations, with integer or fractional coefficients, in one unknown in which the unknown appears on either side or both sides of the equation	$5x + 8 = 12$ $7(x + 3) = 5x - 8$ $\frac{4x + 5}{2} = 3$	
Set up simple linear equations from given data	The three angles of a triangle are a° , $(a + 10)^\circ$, $(a + 20)^\circ$. Find the value of a	
Quadratic equations: Unit 1 Revision Sheet B Algebra Foundation & Higher		
Solve quadratic equations by factorisation (limited to $x^2 + bx + c = 0$)	Solve $x^2 + x - 30 = 0$	
Graphs: Unit 1 Revision Sheet C Graphs Foundation & Higher		
Interpret information presented in a range of linear and non-linear graphs	To include speed/time and distance/time graphs	
Understand and use conventions for rectangular Cartesian coordinates		
Plot points (x, y) in any of the four quadrants or locate points with given coordinates		
Determine the coordinates of points identified by geometrical information	Point A has the coordinates (-3, 4). Write down the coordinates after point A is reflected in the line $y = x$	
Determine the coordinates of the midpoint of a line segment, given the coordinates of the two end points	The point A has coordinates (5, -4). The point B has coordinates (13, 1). Work out the coordinates of the midpoint of AB	
Draw and interpret straight line conversion graphs	To include currency conversion graphs	



Content	Notes	Y/N
Find the gradient of a straight line	gradient = (increase in y) \div (increase in x)	
Recognise that equations of the form $y = mx + c$ are straight line graphs with gradient m and intercept on the y -axis at the point $(0, c)$	Write down the gradient and coordinates of the y intercept of $y = 3x + 5$; Write down the equation of the straight line with gradient 6 that passes through the point $(0, 2)$	
Recognise, generate points and plot graphs of linear and quadratic functions	To include $x = k$, $y = c$, $y = x$, $y - x = 0$ Including completion of values in tables and equations of the form $ax + by = c$	
Shape and Space		
Angles, lines and triangles: Unit 1 Revision Sheet D Shape and Space Foundation & Higher		
Distinguish between acute, obtuse, reflex and right angles		
Use angle properties of intersecting lines, parallel lines and angles on a straight line	Angles at a point, vertically opposite angles, alternate angles, corresponding angles, allied angles	
Understand the exterior angle of a triangle property and the angle sum of a triangle property	Interior angles in a triangle sum to 1800	
Understand the terms 'isosceles', 'equilateral' and 'right-angled triangles' and the angle properties of these triangles		
Polygons: Unit 1 Revision Sheet D Shape and Space Foundation & Higher		
Recognise and give the names of polygons	To include parallelogram, rectangle, square, rhombus, trapezium, kite, pentagon, hexagon and octagon	
Understand and use the term 'quadrilateral' and the angle sum property of quadrilaterals	The four angles of a quadrilateral are 90, $(x + 15)$, $(x + 25)$ and $(x + 35)$ Find the value of x	
Understand and use the properties of the parallelogram, rectangle, square, rhombus, trapezium and kite	eg the number of parallel sides, the number of equal angles, the number of right angles, the number of equal sides	
Measures: Unit 1 Revision Sheet D Shape and Space Foundation & Higher		
Understand and use the relationship between average speed, distance and time		
Use compound measure such as speed, density and pressure	Formula for pressure will be given	



Content	Notes	Y/N
Geometrical reasoning: Unit 1 Revision Sheet D Shape and Space Foundation & Higher		
Give informal reasons, where required, when arriving at numerical solutions to geometrical problems	Reasons will only be required for geometrical calculations based on lines (including chords and tangents), triangles or polygons	
Trigonometry and Pythagoras' theorem: Unit 1 Revision Sheet E Pythagoras and Trig Foundation & Higher		
Know, understand and use Pythagoras' theorem in two dimensions		
Know, understand and use sine, cosine and tangent of acute angles to determine lengths and angles of a right-angled triangle		
Apply trigonometrical methods to solve problems in two dimensions		
Mensuration of 2D shapes: Unit 1 Revision Sheet D Shape and Space Foundation & Higher		
Convert measurements within the metric system to include linear and area units	e.g. cm^2 to m^2 and vice versa	
Find the perimeter of shapes made from triangles and rectangles		
Find the area of simple shapes using the formulae for the areas of triangles and rectangles		
Find the area of parallelograms and trapezia	The formula for area of a trapezium is included in the formula sheet in the inside front cover of an exam paper	
Find circumferences and areas of circles using relevant formulae; find perimeters and areas of semicircles		
3D shapes and volume: Unit 1 Revision Sheet D Shape and Space Foundation & Higher		
Recognise and give the names of solids	To include cube, cuboid, prism, pyramid, cylinder, sphere and cone	
Understand the terms 'face', 'edge' and 'vertex' in the context of 3D solids		
Probability and Handling Data		
Graphical representation of data: Unit 1 Revision Sheet F Probability Venn Diagrams and Handling Data Foundation & Higher		
Use different methods of presenting data	two-way tables	
Probability: Unit 1 Revision Sheet F Probability Venn Diagrams and Handling Data Foundation & Higher		
Understand the language of probability	Outcomes, equal likelihood, events, random. Understand the differences between certain, likely, unlikely and impossible and how they relate to the probability scale	
Understand and use the probability scale	$P(\text{certainty}) = 1$ $P(\text{impossibility}) = 0$	



Content	Notes	Y/N
Understand and use estimates or measures of probability from theoretical models		
Find probabilities from a Venn diagram		
Understand the concepts of a sample space and an event, and how the probability of an event happening can be determined from the sample space	For the tossing of two coins, the sample space can be listed as: Heads (H), Tails (T): (H, H), (H, T), (T, H), (T, T)	
List all the outcomes for single events and for two successive events in a systematic way	Mario is going to play two games on Saturday. He will play one game on Saturday morning and one game on Saturday afternoon. In the morning he will play either Bridge, Chess or Draughts. In the afternoon he will play Ludo, Mahjong or Snakes and Ladders. Write down all the possible combinations of games that Mario can play on Saturday	
Estimate probabilities from previously collected data		
Calculate the probability of the complement of an event happening	$P(A') = 1 - P(A)$	
Use the addition rule of probability for mutually exclusive events	$P(\text{either } A \text{ or } B \text{ occurring})$ $= P(A) + P(B)$ when A and B are mutually exclusive	
Understand and use the term 'expected frequency'	Determine an estimate of the number of times an event with a probability of 0.4 will happen over 300 tries	