

# Main Course for Higher Students

✓ the sections from the diagnostic test that you get correct

✓ the sections you feel confident about before you start

✓ after revising a section

✓ the statements that you no longer need to revise

● This is tested via Q1 on the Diagnostic Test

Ma2 Number & Algebra - Higher			I PASSED !!!		
NC Ref	Things I Can Do	I can do this	Diagnostic Test	Revised	Done
NA1	2a	Calculate Highest Common Factors & Least Common Multiples			
NA2	2a 3a	Know What a Prime Number is & Write Whole Numbers as the Product of Primes			
NA3	3a	Calculate with Negative Numbers with & without a Calculator using $+-\times\div$			
NA4	5a 5g	Substitute Numbers into a Formula			
NA5	2b 5d 3a	Know & Use the Index Laws (for Numbers and Letters)			
NA6	3h	Round to a Given Number of Significant Figures			
NA7	2b 3h 3m 3r	Write Numbers in Standard Index Form & Understand the Calculator Display			
NA8	3f 2f	i) Simplify Ratio ii) Divide a Quantity in a Given Ratio			
NA9	3d	Calculate with Fractions with & without a calculator using $+-\times\div$			
NA10	3a	Interpret & Simplify Fractional & Negative Powers - (H)			
NA11	2d 3c	Convert a Recurring Decimal to a Fraction - (H)			
NA12	3e 3j 3k 3t	Solve Simple % Problems and Compound Interest Problems Links to Exponential growth and Large Calculations (H)			
NA13	3e 3j 3s	Solve Reverse Percentage Problems			
NA14	3l 5h	Solve i) Direct Proportion Problems ii) Inverse Proportion Problems- (H) iii) Complex Proportion Of The Type $Y \propto X^2, Y \propto 1/X^2$ - (H)			
NA15	3q	Calculate the Upper & Lower Bounds of Calculations - (H)			
NA16	5b	Expand Brackets i) Single ii) Double			
NA17	5b	Factorise Expressions i) Linear ii) Quadratic			
NA18	3n	i) Simplify Calculations using Surds & $\pi$ Leaving these in your Answer ii) Simplify Surds In The Denominator - (H)			
NA19	5e	Set Up Simple Equations (Linear)			
NA20	5e 5f	Solve Simple Equations (Linear) i) Basic ii) with Brackets iii) 'Over One' Equations			
NA21	5g	Change the Subject of a Formula i) Basic ii) where the Power of the Subject Appears & Equations iii) where the Subject occurs Twice			
NA22	5j	Solve Simple Linear Inequalities			
NA23	5j	Solve Several Linear Inequalities in Two Variables & find the Solution Set			
NA24	6a	Continue Common Sequences			
NA25	5m	Solve Problems using Trial & Improvement Methods			
NA26	5k	Solve Quadratic Equations by Factorisation			
NA27	5k	Solve Quadratic Equations by i) Completing the Square (H) ii) using the Quadratic Formula (H)			
NA28	5h 5i	Solve Simultaneous Linear Equations			
NA29	5l	Solve Simultaneous Equations with one Linear & one Quadratic- (H)			
NA30	6a	Describe The $n^{\text{th}}$ term of a Sequence			
NA31	6b	Understand the Straight Line Equation $y = mx + c$			
NA32	6c	Know when Lines are i) Parallel ii) Perpendicular (H)			
NA33	6d	Understand i) a Distance-Time Graph ii) a Velocity-Time Graph			
NA34	6e 6f	Plot Quadratics & Cubics			
NA35	3a 6f	Understand the Word Reciprocal, Plot the Reciprocal Function and Recognise the Shape of the Graph of the Reciprocal Function			
NA36	6f	Plot i) Exponential Function $Y = K^x$ for Integer Values of $x$ ii) $y = \sin x$ & $y = \cos x$ iii) Recognise the Characteristic Shapes of these Functions- (H)			
NA37	6g	Transform Linear, Quadratic, Sine & Cosine Functions $f(x)$ by the Functions, $y = f(x) + a, y = f(ax), y = f(x + a), y = af(x)$ (H)			

The question numbers in the Diagnostic Test correspond to these numbers!

		Ma3 <b>Shape &amp; Space - Higher</b>	<b>I can do this</b>	<b>I PASSED !!!</b>		
	NC Ref	<b>Things I Can Do</b>		<b>Diagnostic Test</b>	<b>Revised</b>	<b>Done</b>
SS1	2f 3e	Calculate lengths using Pythagoras' theorem				
SS2	2g	Calculate lengths & angles using trigonometry for right angled triangles				
SS3	3f 2g	Solve Trigonometric and Pythagoras Problems in 3-Dimensions- (H)				
SS4	2g	Calculate Lengths and Angles using the Sine & Cosine Rules - (H)				
SS5	2g	Calculate the Area of a Triangle using $\frac{1}{2}ab \sin C$ - (H)				
SS6		Draw/Sketch/Interpret a Diagram using Bearings				
SS7	2i	Calculate the Surface Area of Prisms, Cylinders & Pyramids (H)				
SS8	2i 4d	Calculate the Volume of Prisms, Cylinders and Pyramids (H)				
SS9	2h	Know basic Circle Properties, & Prove (H) & Use the Circle Theorems The Circle Properties are: i) that tangent and radii are perpendicular ii) tangents from an external point are equal in length iii) the perpendicular from the centre to a chord, bisects the chord The Circle Theorems are: i) angle subtended by an arc at the centre of a circle is twice the angle subtended at any point on the circumference ii) the angle subtended at the circumference by a semicircle is a right angle iii) angles in the same segment are equal iv) opposite angles of a cyclic quadrilateral sum to 180 degrees v) (prove & use) the alternate segment theorem (H)				
SS10	4d	Calculate Arc Lengths and Sector and Segment Areas within Circles - (H)				
SS11	2e	Know the meaning of SSS, SAS, ASA & RHS conditions, for congruent triangles - (H)				
SS12	4c	Draw Basic Constructions i) equilateral triangle ii) perpendicular bisector iii) the perpendicular from a point to a line iv) the angle bisector				
SS13	6h	Construct Basic Loci i) The fixed distance from a single point : Circle ii) The equidistance from two lines (or nearer to one line than another): Perpendicular Bisector iii) The equidistance from two points (or nearer one point than another): Angle Bisector iv) The fixed distance from a line: Race Track Extra v) The circle $x^2 + y^2 = r^2$ Centre (0, 0) Radius, r.				
SS14	3a 3b	Describe the Transformations; Reflections/Rotations/Translations Notes: Rotation from any point & calculate the angle of rotation. Translation as a vector.				
SS15	3c 3b	Describe and construct Enlargements of objects using positive fractional & negative scale factors (H)				
SS16	2g	Calculate lengths in similar triangles				
SS17	3d	Calculate Area and Volume of Similar Shapes - (H)				
SS18	3d	Decide if a Formula is a Perimeter, Area or Volume by considering Dimensions				
SS19	4a	Calculate Compound Measures like Speed & Density				
SS20	4d	Convert between Volume Measures including $\text{cm}^3$ and $\text{m}^3$				
SS21	3f	Vectors: i) Add/Subtract Vectors and Multiply by a Scalar and Understand this Graphically ii) Solve Geometric Problems - (H)				

		Ma4 <b>Handling Data - Higher</b>	<b>I can do this</b>	<b>I PASSED !!!</b>		
	NC Ref	<b>Things I can do</b>		<b>Diagnostic Test</b>	<b>Revised</b>	<b>Done</b>
<b>HD1</b>	5f 4i	Recognise Positive, Negative & Zero Correlation using lines of best fit. <i>Note also covered in this section is drawing lines of best fit.</i>				
<b>HD2</b>	4b 4h 4g	i) Estimate Probability using Relative Frequency ii) Use Tree Diagrams iii) Multiply Probabilities for Several Independent Events Knowing when to ADD (+), TAKE (-), and MULTIPLY (x)				
<b>HD3</b>	2c d e  2d 2c 2e	Describe Random, Stratified Sampling, Bias & Primary & Secondary Data <i>Tested via:</i> i) Identify possible sources of Bias ii) Describe the difference between Primary & Secondary Data iii) Describe Random & Stratified sampling (H)				
<b>HD4</b>	4e	Basic Statistical Calculations Mean/Median/Mode/Range/Quartiles <i>Tested via:</i> i) Calculate the Mean for large data sets with Grouped Data ii) Calculate the Median/Mode/Range for ungrouped data in a table iii) Calculate Quartiles for ungrouped data. (Tabulated or not).				
<b>HD5</b>	4f	Calculate Moving Averages				
<b>HD6</b>	4a	Produce Cumulative Frequency Tables & Diagrams				
<b>HD7</b>	4a	Interpret or Draw Box Plots				
<b>HD8</b>	4a	Produce Histograms for Grouped Continuous Data - (H)				
<b>HD9</b>	5d	Understand Frequency Density - (H) <i>Note: Usually meaning completing a partial table from a histogram.</i>				