Year 11 Topic Outline [2019/20]

Topic	Outline of content	Revision Guide	Workbook	MathsWatch
Linear Graphs	Plotting linear graphs (recap)	Page 43 – 44	Page 39	96
	Find and interpret the gradient and y – intercept from a linear graph	Page 45 – 46	Page 40	159a
	Sketch straight lines using y = mx + c	Page 45 – 46	Page 41 – 42	
	Find the equation of a line with the gradient and one point	Page 47		159b
	Equations of parallel lines			
	Find the equation of a line through two points			
Probability Venn Diagrams and Frequency Trees	Basic probability and sample space diagrams (recap)	Page 107 – 109	Page 100 – 102	14, 59, 126
	Tree diagrams – with and without replacement	Page 112	Page 104	151, 175
	Conditional probability			
	And/or rules for probability	Page 111	Page 103	-
	Venn diagrams – construct and use to solve problems	Page 113	Page 105	127a, 127b
	Frequency trees – construct and use to solve problems	Page 110	Page 102	57
Linear and Quadratic Equations	Form and solve linear equations – unknown on one or both sides, brackets, fractions where the unknown is in the numerator (recap)	Page 29 – 33	Page 27 – 30	135a, 137
	Expanding double brackets (recap)	Page 27	Page 25	134b
	Solving quadratic equations by factorising (recap)	Page 38	Page 35	157
Quadratic Graphs	Plot quadratic graphs	Page 48	Page 43	98
	Identify intercepts and the turning point from the graph of a quadratic function		Page 43	160
	Find the roots of a quadratic equation algebraically (recap)	Page 38	Page 35	157, 160
	Sketch graphs of quadratic functions – use symmetry to identify turning points	Page 48	Page 43	98, 99
Transformations	Identifying lines of symmetry	Page 72 – 73	Page 65	11
	Transformations of shapes around the coordinate axes – reflection, rotation, translation	Page 76	Page 70 – 72	48 – 50
	Enlargements – positive integer and fractional scale factors	Page 77	Page 73	148
Linear Inequalities	Form and solve inequalities – show solutions on a number line (recap)	Page 37	Page 34	138, 139

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Angles and Geometry	Finding missing angles using angle rules (recap)	Page 88, 90	Page 85 – 88	45, 120, 121
	Angles in polygons	Page 91	Page 89 – 90	123
	Parts of a circle (recap)	Page 79	Page 77	116, 149
	Area and circumference of circles (recap)	Page 79	Page 77	117, 118
	Arc length and area of sectors	Page 79	Page 78	167
Kinematics & Real Life Graphs	Rearranging formulae	Page 34	Page 31	136
	Substitution into SUVAT formulae $v = u + at$, $s = ut + \frac{1}{2}at^2$, $v^2 = u^2 + 2as$	See class notes - (formulae given in the exam)		-
	Problems involving distance-time graphs	Page 51	Page 46	143
	Interpret straight-line gradients as rates of change	Page 51 – 53	Page 46 – 48	107, 143, 199, 216a, 216b
	Recognise and interpret graphs that show direct and inverse proportion			
	Construct graphs for real-life contexts			
Functions	Interpret simple equations as functions with inputs and outputs	Page 31	Page 28	36
	Apply function machines to an input to find an output			
	Apply function machines in the reverse direction to an output to find the original input		See class notes	
	Generate a sequence using a function machine	See class notes		
Further Ratio and Proportion	Ratio – simplify, divide into, problem solving (recap)	Page 55, 57	Page 49 – 51	38, 106
	Proportion – direct and inverse (recap)	Page 58	Page 52 – 54	42
	Percentages – amounts, increase, decrease, change, interest (recap)	Page 61 – 65	Page 55 – 58	86 – 87, 108 – 109, 111, 164
Algebraic Graphs and Simultaneous Equations	Solve simultaneous equations graphically (recap)	Page 50	Page 45	140
	Solve simultaneous equations algebraically (recap)	Page 39	Page 36	162
	Plot linear and quadratic graphs from a table of values (recap)	Page 43 – 44	Page 39	96, 98
	Plot cubic graphs from a table of values	Page 49	Page 44	161
	Plot reciprocal graphs from a table of values			
Further Geometry	Compare lengths, area and volumes of shapes using ratios and scale factors	See class notes		-
	Calculate missing lengths, area or volumes of similar shapes or solids	Page 75	See class notes	144, 200
	Volume and surface area – prisms and pyramids (recap)	Page 81 – 83	Page 79 – 83	114a, 114b, 115, 119, 170

Further Geometry	Identify similar shapes and use to find missing side lengths	Page 75	Page 69	144
	Prove that two shapes are similar			
	Identify congruence shapes	Page 74	Page 68	12b, 166
	Prove that two shapes are congruent			
Proof and Identities	Know the difference between an equation and an identity	Page 40	Page 28	193
	Show algebraic expressions are equivalent		Page 37	
	Construct arguments using algebra			
	"Show that" problem solving			
Vectors	Represent a 2D vector as a column vector	Page 103 – 104	Page 99	174, 219
	Calculations with vectors – addition, subtraction, multiplying by a scalar value			
	Draw column vectors on a grid			