Subject: Maths
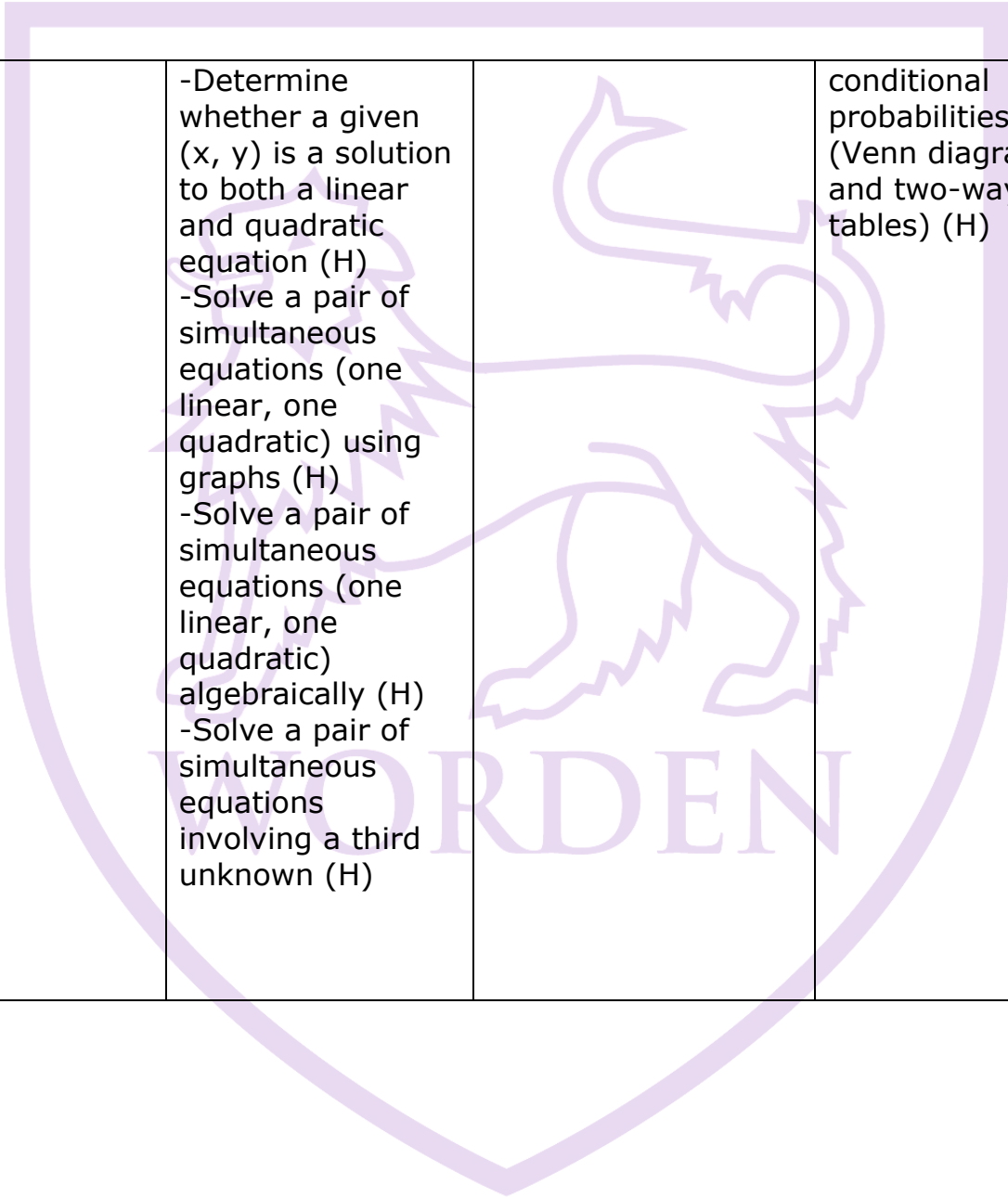
Year: 10

Y10 Autumn HT 1	Y10 Autumn HT 2	Y10 Spring HT 1	Y10 Spring HT 2	Y10 Summer HT 1	Y10 Summer HT 2
Unit 1: Congruence, Similarity and Enlargement -Enlarge a shape by a positive integer scale factor (R) -Enlarge a shape by a fractional scale factor (R) -Enlarge a shape by a negative scale factor (H) -Identify similar shapes -Work out missing sides and angles in a given pair of similar shapes -Use parallel line rules to work out missing angles (R) -Establish a pair of triangles are similar -Explore areas of similar shapes (H)	Unit 3 : Collecting, representing & interpreting data -Understand populations and samples -Construct a stratified sample (H) -Primary and secondary data -Construct and interpret frequency tables and frequency polygons -Construct and interpret two-way tables (R) -Construct and interpret line and bar charts (including composite bar charts)	Unit 5: Representing solutions of equations & inequalities -Understand the meaning of a solution -Form and solve one-step and two-step equations (R) -Form and solve one-step and two-step inequalities (R) -Show solutions to inequalities on a number line -Interpret representation on number lines as inequalities -Represent solutions to inequalities using set notation (H)	Unit 7: Angles & bearings -Use cardinal directions and related angles (R) -Draw and interpret scale diagrams (R) -Understand and represent bearings -Measure and read bearings -Make scale drawings using bearings -Calculate bearings using angle rules -Solve bearings problems using Pythagoras and trigonometry -Solve bearings problems using the sine and cosine rules (H)	Unit 10 : Ratios & fractions -Compare quantities using a ratio (R) -Link ratios and fractions (R) -Share in a ratio (given total or one part) (R) -Use ratios and fractions to make comparisons -Link ratios and graphs -Solve problems with currency conversion -Link ratios and scales (R) -Use and interpret ratios of the form 1 : n and n : 1 -Solve best buy problems	Unit 13 : Types of number sequences -Understand the difference between factors and multiples (R) -Understand primes and express a number as a product of its prime factors (R) -Find the HCF and LCM of a set of numbers (R) -Describe and continue arithmetic and geometric sequences -Explore other sequences -Describe and continue sequences involving surds (H) -Find the rule for the nth term of a linear sequence (R)

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-Explore volumes of similar shapes (H) -Solve mixed problems involving similar shapes (H) -Understand the difference between congruence and similarity -Understand and use conditions for congruent triangles -Prove a pair of triangles are congruent (H) Unit 2 : Trigonometry -Explore ratio in similar right-angled triangles -Work fluently with the hypotenuse, opposite and adjacent sides -Use the tangent ratio to find missing side lengths -Use the sine and cosine ratio to find missing side lengths	-Construct and interpret pie charts (R) -Criticise charts and graphs -Construct histograms (H) -Interpret histograms (H) -Find and interpret averages from a list (R) -Find and interpret averages from a table (R) -Construct and interpret time series graphs (R) -Construct and interpret stem-and-leaf diagrams Construct and interpret cumulative frequency diagrams (H) -Use cumulative frequency diagrams to find measures (H) -Construct and interpret box plots (H)	-Draw straight line graphs (R) -Find solutions to equations using straight line graphs -Represent solutions to single inequalities on a graph (H) -Represent solutions to multiple inequalities on a graph (H) -Form and solve equations with unknowns on both sides (R) -Form and solve inequalities with unknowns on both sides -Form and solve more complex equations and inequalities -Solve quadratic equations by factorisation (H) -Solve quadratic inequalities in one variable (H)	Unit 8 : Working with circles Recognise and label parts of a circle (R) -Calculate fractional parts of a circle -Calculate the length of an arc -Calculate the area of a sector -Circle theorem: Angles at the centre and circumference (H) -Circle theorem: Angles in a semi-circle (H) -Circle theorem: Angles in the same segment (H) -Circle theorem: Angles in a cyclic quadrilateral (H) -Understand and use the volume of a cylinder and cone -Understand and use the volume of a sphere -Understand and use the surface area of a sphere	-Combine a set of ratios -Link ratio and algebra -Ratio in area problems (H) -Ratio in volume problems (H) -Mixed ratio problems Unit 11 : Percentage and Interest Convert and compare fractions, decimals and percentages (R) -Work out percentages of amounts (with and without a calculator) (R) -Increase and decrease by a given percentage (R) -Express one number as a percentage of another (R)	-Find the rule for the nth term of a quadratic sequence (H) Unit 14 : Indices and Roots -Square and cube numbers (R) -Calculate higher powers and roots -Powers of ten and standard form (R) -The addition and subtraction rules for indices (R) -Understand and use the power zero and negative indices -Work with powers of powers -Understand and use fractional indices (H) -Calculate with numbers in standard form (R) Unit 15 : Manipulating Expressions

-Use the sine, cosine and tangent to find missing side lengths -Use the sine, cosine and tangent to find missing angles -Calculate sides in right-angled triangles using Pythagoras' Theorem (R) -Select the appropriate method to solve right-angled triangle problems -Work with key angles in right-angled triangles -Use trigonometry in 3-D shapes (H) -Use the formula 1/2absinC to find the area of non-right angled triangles (H) -Understand and use the sine rule to find missing lengths (H) -Understand and use the sine rule to find missing angles (H) -Understand and use the cosine rule to find missing lengths (H)	-Compare distributions using charts and measure -Compare distributions using complex charts and measures (H) -Construct and interpret scatter graphs (R) -Draw and use a line of best fit (R) -Understand extrapolation Unit 4 : Non-calculator methods Mental/written methods of integer/decimal addition and subtraction (R) -Mental/written methods of integer/decimal multiplication and division -The four rules of fraction arithmetic (R) -Exact answers	Unit 6: Simultaneous equations -Understand that equations can have more than one solution -Determine whether a given (x, y) is a solution to a pair of linear simultaneous equations -Solve a pair of linear simultaneous equations by substituting a known variable -Solve a pair of linear simultaneous equations by substituting an expression -Solve a pair of linear simultaneous equations using graphs -Solve a pair of linear simultaneous	-Understand and use the surface area of a cylinder and cone -Solve area and volume problems involving similar shapes (R) (H) Unit 9 : Vectors -Understand and represent vectors -Use and read vector notation -Draw and understand vectors multiplied by a scalar -Draw and understand addition of vectors -Draw and understand addition and subtraction of vectors -Explore vector journeys in shapes (H) -Explore quadrilaterals using vectors (H) -Understand parallel vectors (H)	-Calculate simple and compound interest -Repeated percentage change -Find the original value after a percentage change (R) -Solve problems involving growth and decay -Understand iterative processes (H) -Solve problems involving percentages, ratios and fractions Unit 12 : Probability Know how to add, subtract and multiply fractions (R) -Find probabilities using equally likely outcomes (R)	Simplify algebraic expressions (R) -Use identities -Add and subtract simple algebraic fractions (H) -Add and subtract complex algebraic fractions (H) -Multiply and divide simple algebraic fractions (H) -Multiply and divide complex algebraic fractions (H) -Form and solve equations and inequalities with fractions -Solve equations with algebraic fractions (H) -Represent numbers algebraically -Algebraic arguments and proof

-Understand and use the cosine rule to find missing angles (H) -Choose and use the sine and cosine rules (H)	-Rational and irrational numbers (H) -Understand and use surds (H) -Calculate with surds (H) -Rounding to decimal places and significant figures (R) -Estimating answers to calculations (R) -Understand and use limits of accuracy -Upper and lower bounds (H) -Use number sense -Solve financial maths problems -Break down and solve multi-step problems	equations by subtracting equations -Solve a pair of linear simultaneous equations by adding equations -Use a given equation to derive related facts (R) -Solve a pair of linear simultaneous equations by adjusting one equation -Solve a pair of linear simultaneous equations by adjusting both equations -Form a pair of linear simultaneous equations from given information -Form and solve pair of linear simultaneous equations from given information	-Explore co-linear points using vectors (H) -Use vectors to construct geometric arguments and proofs (H)	-Use the property that probabilities sum to 1 (R) -Using experimental data to estimate probabilities -Find probabilities from tables, Venn diagrams and frequency trees -Construct and interpret sample spaces for more than one event (R) -Calculate probability with independent events -Use tree diagrams for independent events -Use tree diagrams for dependent events -Construct and interpret conditional probabilities (tree diagrams) (H) -Construct and interpret	

		-Determine whether a given (x, y) is a solution to both a linear and quadratic equation (H) -Solve a pair of simultaneous equations (one linear, one quadratic) using graphs (H) -Solve a pair of simultaneous equations (one linear, one quadratic) algebraically (H) -Solve a pair of simultaneous equations involving a third unknown (H)		conditional probabilities (Venn diagrams and two-way tables) (H)	