Year 10

June Exams

Maths

Revision List

In this document you will find the topics you have covered over the last two years in Maths. This will be your first experience of completing a full set of three GCSE papers covering everything that is in the Edexcel Specification.

To help you with your revision you can use the Hegarty Maths website. We have linked the majority of topics to a video on Hegarty Maths. You can watch the video and answer some practice questions. Hopefully you will find that this is a really useful resource.

To access Hegarty Maths if you have not done so before, please use the following steps:

1. Go to the website: www.hegartymaths.com
2. Click Student log in (top right corner the green box)
3. Type in Southam College for the school name
4. Enter your first name, last name and date of birth
5. You will then be asked to create a password and this will make you a log in that you can keep using.

If you have any issues or need any support with any of this please email: alcock.c@welearn365.com

"The only way to learn mathematics is to do mathematics"

-Paul Halmos

Good luck with your revision ☺

Foundation: Chapter 1 - Number

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lessons
Rules of negative numbers. BIDMAS Simplifying fractions to help with division		41 Adding & subtracting positive & negative numbers 42 Multiplying positive & negative numbers 43 Dividing positive & negative numbers 150 Order of operations 4 (combined) 61 Simplifying fractions
Understand "not equal to symbol Inverse function machines & Powers and roots		99 Square numbers 100 Cube numbers & 101 Square & cube roots
Converting between metric units for length Bus stop method Equivalent fractions		692 Converting length (1) & 693 Converting length (2) 694 Converting length (worded problems) 145 Long division 59 Generate equivalent fractions
Rounding to a certain decimal place Multiplying and Dividing decimals		56 Round decimal numbers 48 Multiplication with decimals & 50 Division of decimals
Writing numbers into words and figures	Using known calculations to find the answer to another	135 Related calculations 1 136 Related calculations 2
Rounding to significant figures	Estimating calculations	130 Round to significant figures 131 Estimate complex calculations
Recognising 2 digit prime numbers Finding factors and multiples		28 Prime numbers 27 Factors of a number & 33 Multiple of a number
Finding HCF and LCM by listing (worded problems also)		31 Highest common factor (listing) 34 Lowest common multiple (listing)
Use a calculator to find squares, cubes and roots Effective use of a calculator		 129 Complex calculations using a calculator
Evaluate expressions involving powers		
Use index notation for powers of 10 Use index notation in calculations Converting powers of 10 into fractions and decimals		121 Powers of 10 102 Index form 1 (intro)
Use the laws of indices (multiplication, division and brackets)	Write a number as a product of its prime factors	105 Index form 4 (multiplying indices) 106 Index form 5 (dividing indices) 107 Index form 6 (power of power rule) 29 Prime factorisation 1
	Use prime factor decomposition and Venn diagrams to find the HCF and LCM	32 Highest common factor (prime factorisation) 35 Lowest common multiple (prime factorisation)

Foundation: Chapter 2 - Algebra

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lessons
Simplify expressions by adding and subtracting Simplifying simple expressions by multiplying and dividing Write simple expressions e.g. a multiplied by b = ab		156 Collecting like terms 1 157 Collecting like terms 2 158 Simplifying expressions involving multiplication 159 Simplifying expressions involving division 151 Writing algebraic expressions 1
Simplifying expressions using powers e.g. 3 x 3 x 3 = 3^3		102 Index form 1 (intro)
Multiply and divide more complex expressions e.g. 8c^4/ 2c		175 Indices with algebraic expressions 3
Substitute positive and negative numbers into expressions		780 Substitution (1) 781 Substitution (2) 782 Substitution (3) 784 Substitution (5)
Writing more complex expressions e.g. I think of a number multiply it by 2 and then subtract 5		152 Writing algebraic expressions 2
Recognise the difference between a formula and an expression.	Write a formula and use it to solve problems	155 Writing formulae & simple substitution
Substitute into formulae		
Expand single brackets Expand and simplify expressions with 2 single brackets		160 Expand a single bracket 161 Expand two single brackets & simplify
Substitute numbers into an expression with brackets and powers		783 Substitution (4)
Recognise factors of algebraic terms	Factorise algebraic expressions into a single bracket	168 Factorise simple expressions 1 169 Factorise simple expressions 2
use the identity symbol and not equal to symbol		
Write simple expressions and formulae from worded problems		155 Writing formulae & simple substitution
Substitute into maths and science formulae		279 Substitution into important formulae

Foundation: Chapter 3 - Graphs, Tables and Charts

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty maths Lesson
Understand discrete and continuous data		393 Types of data 2
Design frequency tables and data collection sheets		403 Grouped frequency tables (continuous)
Read data from tables		
Create and complete a two way table		422 Two way tables 1 423 Two way tables 2 424 Two way tables 3
Read timetables and distance tables		
Draw and interpret comparative and composite bar charts		
Interpret and compare data shown in bar charts and line graphs		425 Bar charts and vertical line graphs
Plot and interpret time series graphs		450 Time series charts 1 451 Times series charts 2 452 Time series charts 3
Use trends to predict what might happen in the future		
Construct stem and leaf and back-to-back stem and leaf diagrams		431 Stem and leaf diagrams 2 433 Stem and leaf diagrams 4
Interpret stem and leaf and back-to-back stem and leaf diagrams		430 Stem and leaf diagrams 1 432 Stem and leaf diagrams 3
Draw a pie chart		427 Pie charts 1
Interpret pie charts		428 Pie charts 2
Plot and interpret scatter graphs		
Determine whether or not there is a relationship between sets of data		453 Scatter graphs 1
	Draw a line of best fit	454 Scatter graphs 2
	Use a line of best fir to predict values	
	Understand 'interpolation' and 'extrapolation'	

Foundation: Chapter 4 - Fractions and Percentages

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lessons
	Compare and order fractions	60 Compare fractions
	Add and subtract fractions with different denominators	66 Add or subtract fractions (different denominator)
	Use fractions to solve problems	
Simplifying fractions and converting between improper fractions and mixed numbers		61 Simplify fractions 63 Improper fractions to mixed numbers 64 Mixed numbers to improper fractions
Finding fractions of amounts	Adding and subtracting mixed numbers	77 Fractions of an amount
Multiplying a whole number with a fraction		67 Multiply a whole number by fractions
Multiplying fractions and mixed numbers together		68 Multiplying fractions 1 69 Multiplying fractions 2
Divide a whole number by a fraction		72 Linking multiplying/dividing fractions and whole numbers
Divide a fraction by a whole number or a fraction		70 Dividing fractions
Converting between fractions and decimals and order.		73 Convert fractions to decimals 1 74 Convert fractions to decimals 2
Write one number as a fraction of another		62 Express one number as a fraction of another
Converting between fractions and percentages		75 Convert fractions to percentages 1 76 Converting fractions to percentages 2 82 Convert percentages to fractions
Write one number as a percentage of another		
Order fractions, decimals and percentages		
Find percentages of amounts (with and without a calculator)		84 find percentages of amounts 1 85 find percentages of amounts 2 86 find percentages of amounts 3 87 find percentages of amounts 4
Use percentages to solve problems		
Calculate a percentage increase or decrease (with and without a calculator		88 Percentage increase and decrease 90 Percentage increase and decrease
Use percentages in real life situations		98 Percentages (worded problems)

Foundation: Chapter 5 - Equations, Inequalities and sequences

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty maths lessons
Rearrange simple linear equations to solve Solve simple linear equations using the balancing method Write and solve simple equations		178 Solve 1 step equations
Solve two step equations	Solve two step equations involving shapes	179 Solve 2 step equations 180 Solve 2 step equations 182 Solve 2 step equations
Solve equations with unknowns on both sides	Solve linear equations with brackets Solve linear equations involving fractions	179 Solve 2 step equations 183 Solve 3 step equations 184 Solve equations with x on both sides 1
Use correct notation to show the inclusive and exclusive inequalities Write down whole numbers which satisfy an inequality Represent inequalities on a number line	Solve linear inequalities	267 integer solutions to inequalities 266 Write inequalities from a number line 269 Solve single linear inequalities 1
	Solve two sided inequalities Identify values that satisfy 2 inequalities	272 Solve double linear inequalities
Substitute values into a formulae and solve equations know the difference between an expression, an equation, a formula and an identity	Change the subject of a formulae Substitute in formulae that involves rearranging	189 Substituting and solving 280 Change the subject of the formula 1 281 Change the subject of the formula 2
Recognise and extend arithmetic, geometric and Fibonacci sequences		263 Fibonacci sequence 264 Geometric sequences
	Use the nth term to generate terms of a sequence Find the nth term of an arithmetic sequences	197 Linear sequences (term to term rule) 198 Linear sequences (nth term)

Foundation: Chapter 6 - Angles

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lessons
Solve geometric problems using side and angle properties of quadrilaterals Identify congruent shapes		560 Interior angles in quadrilaterals 680 Congruence (1)
Understand and use the angle properties of parallel lines Finding missing angles using corresponding and alternate angles		481 Alternate angles 482 Co-interior angles 483 Corresponding angles 490 Multi-step angle problems (3)
Solve angle problems in triangles Understand angle proofs about triangles		485 Angles in a triangle (1) 486 Angles in a triangle (2) 484 Proof – angles in triangles
Calculate the interior and exterior angles of regular polygons		561 Interior angles in polygons (1) 563 Exterior angles in polygons (1)
Calculate the interior and exterior angles of polygons Explain why some polygons fit together and some others do not		562 Interior angles in polygons (2) 564 Exterior angles in polygons (2)
	Solve angle problems using equations Solve geometrical problems showing reasoning	487 Angles in a triangle (3) 565 Angles in polygons using algebra

Foundation: Chapter 7 - Averages and range

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lessons
Calculate the mean from a list	Calculate the mean from a frequency table Compare set of data using the mean and range	405 Mean (1) 406 Mean (2) 417 Mean from frequency tables (1) 410 Range
Find the mode, median and range from a stem and leaf diagram Identify outliers Estimate the range from a grouped frequency table		430 Stem & leaf diagrams (1) 432 Stem & leaf diagrams (2) 414 Range from frequency tables
	Recognise the advantages and disadvantages of each type of average Find the modal class Find the median from a frequency table	413 Selecting appropriate averages 415 Mode from frequency tables 416 Median from frequency tables
	Estimate the mean of grouped data	418 Mean from frequency tables (2)
	Understand the need for sampling Understand how to avoid bias	394 Census, sampling & bias

Foundation: Chapter 8 - Perimeter, area and volume 1

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lessons
Calculate the perimeter and area of rectangles, parallelograms and triangles Estimate lengths, areas and costs. Calculate a missing length given the area		549 Perimeter (2) 557 Triangles (1) 554 Rectangles 556 Parallelograms
Calculate the area and perimeter of trapezia. Find the height of a trapezium given its area	Convert between area measures	559 Trapezium 700 Converting area units (1) 701 Converting area units (2)
	Calculate the perimeter and area of shapes made from triangles and rectangles Calculate areas in hectares and convert between ha and m^2	555 Compound shapes 548 Perimeter (1) 558 Triangles (2)
Calculate the surface area of a cuboid Calculate the surface area of a prism		584 Surface area of cuboids 585 Surface area of prisms
Calculate the volume of a cuboid Calculate the volume of a prism		568 Cuboids (1) 570 Prisms (1) 571 Prisms (2)
	Solve problems involving surface area and volume Convert between measures of volume	569 Cuboids (2) 589 Surface area (multi-step) (1) 590 Surface area (multi-step) (2) 702 Converting volume units (1)

Foundation: Chapter 9 - Graphs

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lessons
Find the midpoint of a line segment Recognise, name and plot straight line graphs parallel to the axes Recognise, name and plot the graphs of y=x and y=-x		200 Midpoint of a line segment
Generate and plot coordinates from a rule Plot straight line graphs from table of values Use a graph to estimate		206 Straight line graphs 1
Find the gradient of a line Identify and interpret the gradient from an equation Draw a line with a given gradient Understand that parallel lines have the same gradient		201 Gradient of a line segment 1 202 Gradient of a line segment 2 (negative) 207 Straight line graphs 2 214 Straight line graphs (parallel)
	Understand what m and c represent in y=mx+c Find the equation of straight line graphs Find the equation of a line when given 2 points Draw a line when given the equation or m and c. e.g y=2x+7 or 2x+y=8	207 Straight line graphs 2 208 Straight line graphs 3 213 Straight line graphs 8
Draw and interpret graphs from real data		894 Interpreting real-life graphs 895 Drawing real-life graphs
Use distance-time graphs to solve problems Draw distance-time graphs	Interpret rate of change graphs	874 Distance-time graphs (1) 875 Distance-time graphs (2) 896 Rate of changes graphs
	Draw and interpret a range of graphs. E.g. Depth of water in a container Understand when predictions are reliable	899 Sketch graphs for water flows (1)

Foundation: Chapter 10 - Transformations

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty maths videos
Translate a shape on a coordinate grid Use a column vector to describe a translation		(650Describing transformations 1)
Draw a reflection of a shape in a mirror line Draw reflections on a coordinate grid Describe reflections on a coordinate grid		(652 describing transformations 3)
Rotate a shape on a coordinate grid Describe a rotation		(653 describing transformations 4) (654 Describing transformations 5)
	Enlarge a shape by a scale factor (including halves) Enlarge a shape using a centre of enlargement	
	Identify the scale factor of an enlargement Find the centre of an enlargement Fully describe an enlargement	(651 describing transformations 2)
Transform shapes using more than one transformation Describe combined transformations of shapes on a grid		(656 combined transformations 1) (657 combined transformations 2)

Foundation: Chapter 11 - Ratio and proportion

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty maths Lesson
Use ratio notation for worded problems Write a ratio in its simplest form)		(328 Compare quantities using ratios) (329 Simplifying Ratios)
Solve simple problems involving ratios. E.g. Bill and Ann share money in the ratio 1:2, if Bill gets £100 how much does Ann get Simplifying ratios involving decimals		(333 Share in a given ratio 2) (329 Simplifying Ratios)
Use ratios to convert between units Write and use ratios for shapes and their enlargements		(339 Direct proportion 1)
	Divide a quantity into a given ratio Solve word problems using ratios	(332 share in a given ratio 2) (334 share in a given ratio 3)
Use ratios involving decimals Put fractions into a ratio Write a ratio as a unit ratio Solve ratio and proportion problems		(330 write ratios as fractions /proportions) (331 write ratios in the form 1:n) (739 recipe problems)
Use the unitary method to solve proportion problems Solve proportion problems in words Work out which product is better value for money)		(340 Direct proportion 2) (341 direct proportion 3)
Recognise and use direct proportion on a graph Understand the link between the unit ratio and the gradient		
	Recognise different types of proportion. i.e. inverse proportion Solve word problems involving direct and inverse proportion	(342 inverse proportion)

Foundation: Chapter 12 - Right angled triangles

Ability 4-5	Hegarty maths video
Understand Pythagoras' theorem Calculate the length of the hypotenuse in a right angled triangle Solve problems using Pythagoras' theorem	(498 – Pythagoras longer side)
Calculate the length of a line segment AB Calculate the length of a shorter side in a right angled triangle	(449 Pythagoras shorter side)
Understand and recall the sine ratio in a right angled triangle Use the sine ratio to calculate the length of a side in a right angled triangle Use the sine ratio to solve problems	(508 trigonometry introduction)
Use the sine ratio to calculate an angle in a right angled triangle Use the sine ratio to solve problems	(509 trigonometry find side 1)
Understand and recall the cosine ratio in a right angled triangle Use the cosine ratio to calculate the length of a side in a right angled triangle Use the cosine ratio to calculate an angle in a right angled triangle Use the cosine ratio to solve problems	(510 trigonometry find side 2)
Understand and recall the tangent ratio in right angled triangles Use the tangent ratio to calculate the length of a side in a right angled triangle Use the tangent ration to calculate an angle in a right angled triangle Solve problems using an angle of elevation or depression	(511 Trigonometry find angle 1)
Understand and recall trigonometric ratios in right angled triangles Use trigonometric ratios to solve problems Know the exact values of sine, cosine and tangent of some angles	(512 Trigonometry find angle 2)

Foundation: Chapter 13 - Probability

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty maths videos
Calculate simple probabilities from equally likely events. E.g. Spinners, counters in a bag etc. Understand mutually exclusive and exhaustive outcomes Predict the number of 'successes' given the probability Know that probabilities add up to 1		349 – Express a probability in words 350 – Express a probability in numbers 354 – Mutually exclusive events 353 – Probability of event not happening 351 – Probability of a single event (1) 352 – Probability of a single event (2)
	Use two way tables to record the outcomes from two events Work out probabilities from sample space diagrams	422 – Two-way tables (1) 423 – Two-way tables (2) 424 – Two-way tables (3) 358 – Probability of more than one event (1) 359 – Probability of more than one event (2)
	Find and interpret probabilities based on experimental data Make predictions from experimental data Find the relative frequencies from an experiment	356 – Experimental probability and relative frequency
	Use Venn diagrams to create a set Use Venn diagrams to work out probabilities Understand the language and notation of sets and Venn diagrams	383 – Venn diagrams for probability (1) 384 – Venn diagrams for probability (2)
	Complete and use frequency trees and tree diagrams Work out probabilities using tree diagrams Understand independent events	368 – Frequency trees (1) 367 – Frequency trees (2) 361 – Independent events and probability trees (1) 362 – Independent events and probability trees (2)
	Understand when events are not independent Solve probability problems involving events that are not independent	364 – Conditional probability (1)

Foundation: Chapter 14 - Multiplicative reasoning

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lesson
	Calculate a percentage profit or loss Express a given number as a percentage of another in more complex situations (worded problem to calculate first) Find the original amount given the final amount after a percentage increase or decrease	759 Profit and loss (1) 76 Convert fractions to percentages 2 90 Percentage increase or decrease 96 Reverse percentages
	Find an amount after repeated percentage change Solve growth and decay problems	92 Repeated percentage increase or decrease 2
	Solve problems involving compound measures. E.g. Mass, density, volume and force, pressure, area	725 Density (1) 726 Density (2) 734 Pressure (1) 735 Pressure (2)
Calculate average speed, distance and time	Convert between metric speed measures Use formulae to calculate speed and acceleration (suvat)	716 Speed (1) 717 Speed (2) 788 Substitution (Equations of motion 1)
	Use ratio and proportion in measures and conversions Solve direct and inverse proportion problems using an equation	339 Direct proportion 1 343 Algebraic direct proportion 1 346 Algebraic inverse proportion 1
	Write an equation connecting two variables from a ratio	338 Solve ratio problems using algebra

Foundation: Chapter 15 - Constructions, loci and bearings

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lessons
Recognise 3D shapes and their properties Describe 3D shapes using correct mathematical words Understand the 2D shapes that make up 3D objects		829 – 3D shapes (1) 830 – 3D shapes (2) 831 – Naming faces of 3D shapes
Identify and sketch planes of symmetry of 3D shapes Understand and draw plans and elevations of 3D shapes Sketch 3D shapes based on their plans and elevations		 837 – Planes of elevation (1) 838 – Planes of elevation (2) 839 – Planes of elevation (3) 841 – Planes of elevation (5) 842 – Planes of elevation (6)
Make accurate drawings of triangles using a ruler, protractor and compasses Identify SSS, ASA, SAS and RHS triangles Identify congruent triangles using SSS, ASA etc		683 – Constructing triangles 682 – Congruent triangles
Draw diagrams to scale Correctly interpret scales in real life contexts Use scales on maps and diagrams to work out lengths and distances Draw lengths and distances correctly on given scale drawings		864 – Scale Diagrams (1) 865 – Scale Diagrams (2) 866 – Scale Diagrams (3)
	Accurately draw angles and 2D shapes using a ruler, protractor and compasses. Construct a polygon inside a circle Recognise nets and make accurate drawings of nets of common 3D objects	461 – Drawing angles 833 – Nets (1) 834 – Nets (2)
	Draw accurately using rulers and compasses Bisect angles and lines using rulers and compasses	660 – Construct a perpendicular bisector 661 – Construct an angle bisector
	Draw loci for the path of points that follow a given rule Identify regions bounded by loci to solve practical problems	674 – Loci (1) 675 – Loci (2) 679 – Loci (problem solving)
Find and use three figure bearings Use angles on parallel line to work out bearings Solve problems involving bearings and scale drawings		492 – Bearings (1) 493 – Bearings (2) 869 – Scale diagrams with bearings

Foundation: Chapter 16 - Quadratic equations and graphs

Ability 4-5	Hegarty Maths Lessons
Multiply double brackets Recognise a quadratic expression Square single brackets	162 – Expand double brackets 1 222 – Quadratic expressions 163 – Expand double brackets 2
Plot graphs of quadratic functions Recognise a quadratic function Use quadratic graphs to solve problems	251 – Drawing quadratic graphs from a table
Solve quadratic equations ax^2 + bx + c=0 using a graph Solve quadratic equations ax^2 + bx + c=k using a graph	253 – Find the x-intercept (roots) of a quadratic graph
Factorise quadratic expressions when the coefficient of x^2 is 1 Factorise expressions using the difference of 2 squares rule	223 – Factorising quadratic expressions 1 224 – Factorising quadratic expressions 2
Solve quadratic functions by factorising (some rearranging to make =0 first)	230 – Solving quadratic equations 1 (by factorising)

Foundation: Chapter 17 - Perimeter, Area and Volume 2

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lessons
Calculate the circumference of a circle Solve problems involving the circumference of a circle		534 – Circumference of a circle 1 535 – Circumference of a circle 2 536 – Circumference of a circle 3
Calculate the circumference and radius of a circle	Work out error intervals	774 – Error intervals 1 775 – Error intervals 2
Work out the area of a circle Work out the radius or diameter of a circle Solve problems involving the area of a circle Give answers in terms of π		539 – Area of a circle (1) 540 – Area of a circle (2) 541 – Area of a circle (3) 542 – Area of a circle (4)
Understand and use maths language for circles and perimeters	Work out areas of semicircles and quarter circles and their perimeters Find the area and perimeter of a sector given the angle	592 – Parts of the circle 546 – Area of a sector (1) 544 – Arc length (1) 545 – Arc length (2)
Work out the volume of a cylinder	Work out the surface area of a cylinder Find areas of compound shapes involving circles in real life situations	572 – Cylinders (1) 586 – Surface area of cylinders 555 – Compound shapes
	Work out the volume and surface area of a pyramid Work out the volume and surface area of a cone Work out the volume of a sphere Work out the surface area of a sphere Work out the volume and surface area of composite solids	579 – Rectangular based pyramid 585 – Surface area of prisms 576 – Cones (1) 578 – Surface area of cones 580 – Spheres (1) 588 – Surface area of spheres 582 – Compound volume

Foundation: Chapter 18 - Fractions, indices and standard form

Ability 1-3	Ability 4-5 (+ all 1-3)	Hegarty Maths Lessons
Multiply and Divide mixed numbers		69 Multiplying fractions 2 70 Dividing fractions
	To know and use the laws of indices: Brackets, negative and power of 0	104 – Index form 3 (power of negative integers) 107 – Index form 6 (power of power rule) 106 – Index form 5 (dividing indices) 105 – Index form 4 (multiplying indices) 103 – Index form 2 (power of 0 & 1)
	Write large numbers in standard form Convert large numbers from standard form to ordinary numbers	122 – Ordinary to standard form 123 – Standard form to ordinary
	Write small numbers in standard from Convert numbers from standard form with negative powers to ordinary numbers	122 – Ordinary to standard form 123 – Standard form to ordinary
	To multiply and divide numbers in standard form To add and subtract numbers in standard form	125 – Multiplying with standard form 126 – Dividing with standard form 127 – Adding & subtracting with standard form

Foundation: Chapter 19 - Congruence, similarity and vectors

Ability 4-5	Hegarty Maths Lessons
Understand similarity Use similarity to solve angle problems	611 – Similar triangles (1)
Find the scale factor of an enlargement Use similarity to solve problems	 612 – Similar triangles (2) 613 – Similar triangles (3)
Understand the similarity of regular polygons Calculate perimeters of similar shapes	608 – Similar polygons (1) 609 – Similar polygons (2) 610 – Similar polygons (3)
Recognise congruent shapes using SSS, SAS, ASA and RHS Use congruence to work out unknown angles	682 – Congruent triangles
Use congruence to work out unknown angles and lengths and give reasons	684 – Congruent triangles (problem solving 1)
Add and subtract column vectors Find the resultant of 2 vectors Understand and use vector notation	623 – Vectors (2) – column vectors 625 – Vectors (4) – combining vectors 624 – Vectors (3) – negative vectors
Subtract vectors Find multiples of vectors	626 – Vectors (5) – multiplying by scalars

Foundation: Chapter 20 - More algebra

Ability 4-5	Hegarty Maths Lessons
Draw and interpret graphs for cubic functions Draw and interpret reciprocal graphs Know what asymptotes are	299 – Cubic graphs (recognising) 298 – Cubic graphs (from a table of values)
Draw and interpret non-linear graphs to solve problems	895 – Drawing real-life graphs
Solve simultaneous equations by drawing a graph Write and solve simultaneous equations	218 – Solving simultaneous equations using straight lines 1 190 – Simultaneous equations by elimination 1 (intro) 191 – Simultaneous equations by elimination 2 192 – Simultaneous equations by elimination 3
Solve simultaneous equations algebraically	191 – Simultaneous equations by elimination 2 192 – Simultaneous equations by elimination 3
Change the subject of a formula	280 – Change the subject of the formula 1 (intro) 281 – Change the subject of the formula 2 (2-step) 282 – Change the subject of the formula 3 (negative x) 284 – Change the subject of the formula 5 (x with powers) 285 – Change the subject of the formula 6 (x on both sides)
Identify expressions, equations, formulae and identities Prove results using algebra	154 – Expressions, equations, identities & formulae 325 – Direct algebraic proof 1