Autumn Term

Volume 04/09/2019

	Specification content	Specification notes
R12 (104/5)	Compare lengths, areas and volumes using ratio notation scale factors Make links to similarity	
G16 (142/3)	Know and apply formulae to calculate the volume of cuboids and other right prisms (including cylinders)	
G17 (144-6)	Calculate the volume of spheres, pyramids, cones and composite solids	
N8 (20/1)	Calculate exactly with multiples of π	

Algebra: quadratics, rearranging formulae and identities 16/09/2019

	Specification content	Specification notes
A4	Simplify and manipulate algebraic expressions (including those involving surds) by:	

(40-2)	expanding products of two binomials factorising quadratic expressions of the form x^2+bx+c including the difference of two squares simplifying expressions involving sums, products and powers, including the laws of indices	
A5 (45)	Understand and use standard mathematical formulae Rearrange formulae to change the subject	including use of formulae from other subjects in words and using symbols
A6 (46)	Know the difference between an equation and an identity Argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments	
A7 (48)	Where appropriate, interpret simple expressions as functions with inputs and outputs	

Inequalities 07/10/2019

	Specification content	Specification notes
A22 (81)	Solve linear inequalities in one variable Represent the solution set on a number line	know the conventions of an open circle on a number line for a strict inequality and a closed circle for an included boundary

Algebra and graphs 28/10/2019

	Specification content	Specification notes
A17	Solve linear equations in one unknown	including use of brackets

(71)	algebraically Including those with the unknown on both sides of the equation Find approximate solutions using a graph	
A21 (79/80)	Translate simple situations or procedures into algebraic expressions or formulae derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution	including the solution of geometrical problems and problems set in context

Sketching graphs 11/11/2019

	Specification content	Specification notes
A12 (57)	Recognise, sketch and interpret graphs of linear functions, quadratic functions, simple cubic functions and the reciprocal function $y = \frac{1}{x}$ with $x \neq 0$	

Spring Term

Direct and inverse proportion 06/01/2020

	Specification content	Specification notes
R10 (98-100)	Solve problems involving direct and inverse proportion, including graphical and algebraic representations	

R13 (106)	Understand that x is inversely proportional to y is equivalent to x is proportional to $\frac{1}{y}$ Interpret equations that describe direct and inverse proportion	
R14 (108)	Recognise and interpret graphs that illustrate direct and inverse proportion	

Growth and decay 20/01/2020

	Specification content	Specification notes
R16 (112)	Set up, solve and interpret the answers in growth and decay problems, including compound interest	

Trigonometry 27/01/2020

	Specification content	Specification notes
G20	Know and use the trigonometric ratios $\sin\theta = \frac{opposite}{hypotenuse}$, $\cos\theta = \frac{adjacent}{hypotenuse}$ and $\tan\theta = \frac{opposite}{adjacent}$ Apply them to find angles and lengths in right-angled triangles in two	

	dimensional figures (Review of year 10 - 3 year route)	
G21	Know the exact values of $\sin\theta$ and $\cos\theta$ for $\theta =$ 0°, 30° 45°, 60° and 90° Know the exact value of $\tan\theta$ for $\theta =$ 0°, 30°, 45° and 60°	
R12	Compare lengths using ratio notation (Review of Year 10 - 3 year route) Make links to trigonometric ratios	

Solving quadratic equations 24/02/2020

	Specification content	Specification notes
A18 (72)	Solve quadratic equations algebraically by factorising Find approximate solutions using a graph	

Quadratic graphs 09/03/2020

	Specification content	Specification notes
A12	Recognise, sketch and interpret graphs of quadratic functions	
A11	Identify and interpret roots, intercepts and turning points of quadratic functions graphically Deduce roots algebraically	including the symmetrical property of a quadratic

Further circumference and area 09/03/2020

	Specification content	Specification notes
G9 (132)	Identify and apply circle definitions and properties, including centre, radius, chord, diameter, circumference, tangent, arc, sector and segment (review of Year 9)	
G17 (144)	Know and use the formulae Circumference of a circle $=2\pi r=\pi d$ Area of a circle $=\pi r^2$ Calculate the perimeter of 2D shapes including circles and composite shapes Calculate areas of circles and composite shapes (review of Year 9) Calculate surface area of spheres, cones and composite solids	Including frustums Solutions in terms of π may be asked for.
G18 (147)	Calculate arc lengths, angles and areas of sectors of circles	
N8 (20)	Calculate exactly with multiples of π	

Summer Term

Vectors 15/04/2020

	Specification content	Specification notes
G25 (161)	Apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representation of vectors	