

Year 10 Higher. Knowledge endpoints
know the exact values of $\sin\theta$ and $\cos\theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ$ and 90° ; know the exact value of
know the trigonometric ratios, $\sin\theta = \text{opposite/hypotenuse}$, $\cos\theta = \text{adjacent/hypotenuse}$, $\tan\theta =$
apply trig ratios to find angles and lengths in right-angled triangles in two dimensional figures
Manipulate fractional and negative indices
Calculate exactly with surds
Calculate with bounds
Understand limits of accuracy
Use an iterative formula to find approximate solutions to equations
Show that a solution to a complex equation lies between two given values
Solve linear simultaneous equations
Derive linear simultaneous equations
Reflect, translate and rotate a given shape
Enlarge from a given centre with negative and fractional scale factors
Describe transformations
Identify invariant points
Simplify algebraic expressions involving algebraic fractions
Manipulate algebraic expressions involving algebraic fractions
Manipulate algebraic expressions by expanding products of more than two binomials
Expand the product of two binomials involving surds
manipulate algebraic expressions by factorising quadratic expressions of the form $ax^2 + bx + c$
Change the subject of a formula when the required subject appears twice
Find the n th term of a quadratic sequence
Recognise and describe a simple geometric progression (of the form rn)
Solve applied problems (currency, best buys, rates etc) using proportion
Solve problems involving direct and inverse proportion
Solve problems involving the combining of ratios
Solve more complex problems involving density, speed and pressure
Construct and shade a graph to show a linear inequality
Find the set of integer coordinates that are solutions to a set of inequalities in two variables
Use set notation to represent the solution set to an inequality
Find the volume of spheres, cones and pyramids
Find the surface area of spheres, cones and pyramids
Solve practical problems involving the volume of solids
Solve practical problems involving the surface area of solids
Move freely between scale factors for length, area and volume
Solve practical problems involving length, area and volume in similar figures
Apply the standard circle theorems concerning angles, radii, tangents and chords
Prove the standard circle theorems concerning angles, radii, tangents and chords
Prove congruence of triangles
Plot graphs of non standard functions (D-T, V-T and exponential)
Use graphs of non standard functions (D-T, V-T and exponential)
Calculate the gradient at a point on a curve
Interpret the gradient at a point on a curve as the instantaneous rate of change
Calculate an estimate for the area under a graph
Identify and interpret roots, intercepts and turning points of quadratic functions graphically
Change recurring decimals into their corresponding fractions and vice versa
Calculate the result of a repeated percentage change, including compound interest

Solve a quadratic by factorising, including where not equal to 0
Deduce roots of a quadratic algebraically and graphically
Apply systematic listing strategies including use of the product rule for counting
Understand set notation used with Venn diagrams: $\bar{E}$, C , $A \cap E$, x
Calculate and interpret conditional probabilities through representation using expected frequencies with two-way tables, tree diagrams and Venn diagrams