

Number	<p>Solve and calculate the value of complex indices including surds</p> <p>Rationalise more complex denominators e.g. $\frac{1}{2+\sqrt{3}}$</p> <p>Understand and use rational and irrational numbers</p>
Algebra	<p>Calculate the n^{th} term of a quadratic sequence</p> <p>Solve simultaneous equations with one linear and one quadratic function</p> <p>Use the equation of a circle to find points of intersection with a line</p> <p>Calculate the equation of a circle given the centre and a point on the circumference</p> <p>Estimate area under a quadratic or other graph by dividing it into trapezia</p> <p>Calculate the acceleration and distance from velocity-time graphs</p> <p>Simplify and solve algebraic fractions</p> <p>Calculate the inverse function and construct and use composite functions e.g.: $f(x) = 5x$ and $g(x) = x^2 + 3$. Write down the value of $f(5)$ Write down the inverse of $g(x)$ Write down the composite function of $fg(x)$</p>
Ratio & Proportion	<p>Set up, solve and interpret the answers in growth and decay problems</p>
Geometry	<p>Transform both trigonometric and other functions. e.g.: Show $y = -f(x)$, $y = f(-x)$, $y=f(x+a)$, $y=f(x)+a$</p> <p>Sketch quadratic functions; identifying y and x-axis intercepts and turning points</p> <p>Use the sine and cosine rule in 3 dimensions</p> <p>Prove all circle theorems algebraically</p> <p>Use and apply vectors to prove lines are collinear or parallel</p>
Probability	<p>Use a Venn diagram to calculate conditional probability</p>