Year 10 Higher Revision List - April 2019

Objective	Hegarty Maths Clip	Objective	Hegarty Maths Clip
Identify prime numbers	28	Calculate upper and lower bounds	137
Write a number as the product of its prime factors	29	Find the upper and lower bounds of calculations involving measurements	139
Find the HCF and LCM of two numbers	32/35	Round a calculation to a suitable degree of accuracy using upper and lower bounds of calculations	139
Calculate with roots and **positive integer** indices - including 'power to a power'	105/106/107	Calculate speed, distance or time, given the other two	716-724
Calculate with **fractional** indices	108	Calculate density, mass or volume, given the other two	725-731
Find the reciprocal of a number	71	Calculate pressure, force or area, given the other two	734-737
Calculate with **negative** indices	104	Calculate the perimeter of a shape made from triangles, rectangles and other quadrilaterals where some of the values required must be calculated.	551
Write a surd in its simplest form	115	Know, understand and use the formula for finding the circumference of a circle.	534
Multiply and divide with surds	113	Calculate the perimeter of a semi-circle.	536
Expand brackets involving surds	116	Calculate the perimeter of a quadrant.	544
Solve shape problems involving surds	117	Calculate the length of an arc.	544
Rationalise the denominator of a fraction	118	Find the perimeter of a sector.	545
Change between numbers in standard form and ordinary numbers	112/123	Find the angle of a sector when given the length of the arc.	545
Multiply and divide numbers written in standard form	125/126	Understand and use function notation.	288
Understand and use the standard form display on a calculator	128	Find the value of a function at a given point.	288
Add and subtract numbers written in standard form	127	Find the inverse function	295
Recognise **quadratic** sequences, and use the term-to-term rule to generate further terms.	247	Given two functions find the value of the composite function.	293
Recognise **simple geometric** sequences, and use the term-to-term rule to generate further terms.	264	Solve linear equations involving brackets, e.g. 3(2x - 4) = 6.	179
Identify whether a term will appear in a sequence, and explain your answer.	197	Solve linear equations where the unknown appears on both sides.	184
Find the nth term of a **linear** sequence.	198	Derive a **linear** equation from a situation, solve and interpret the solution.	176
Generate the terms of a **quadratic** sequence using the **position-to-term** rule.	248	Solve linear equations by adding or subtracting algebraic fractions, where the denominator is a number.	187
Find the nth term of a **quadratic** sequence.	248	Find the roots of a quadratic equation of the form $ax^2 + bx + c$, where a = 1, by factorising, and link to the graph of the function.	230
Differentiate between expressions, equations, formulae, identities and inequalities. Be able to give examples of each.	154	Find the roots of a quadratic equation using the quadratic formula.	241
Form expressions from written or diagrammatic contexts.	153	Solve two linear simultaneous equations algebraically where multiplication is needed.	191
Multiply two (or more) brackets by single terms and simplify the resulting expression.	161	Derive two **linear** simultaneous equations from a situation, solve and interpret the solution.	195
Factorise an expression by taking out a common factor.	168	Show that a solution to an equation lies between two given points.	322
Fully factorise an expression by taking out common factors.	169	Find approximate solutions to equations using a given iterative formula.	322
Expand the product of two linear expressions of the form **x ± n** and simplify the resulting expression.	162	Translate a 2d shape when given a column vector	637/638
Expand the product of two linear expressions of the form **ax ± n** and simplify the resulting expression.	163	Describe the translation of a 2d shape using a column vector	637/638
Factorise a quadratic expression of the form $x^2 + bx + c$.	170	Represent single column vectors graphically.	622

Factorise a quadratic expression using the difference of two squares.	171	Identify the column vector from a diagram (single vector)	623
Expand the product of three (or more) linear expressions and simplify the resulting expression.	166	Multiply a column vector by a scalar and show this graphically.	626
Simplify expressions involving the multiplication and division of indices.	173	Add two vectors numerically and show this graphically.	625
Simplify expressions involving raising to a power with indices.	174	Subtract two column vectors numerically and show this graphically.	625
Simplify expressions involving negative indices.	175	Find the resultant of two (or more) given vectors.	626
Simplify expressions involving fractional indices.	175	Understand the relationship between parallel vectors.	629
Use proportion in real contexts (including inverse).	342	Find the vector to a midpoint, and use this to find resultant vectors.	630
Recognise and interpret graphs that illustrate direct and inverse proportion	348	Find the vector to a point given by a fraction or ratio, and use this to find resultant vectors.	629
Interpret equations that describe direct and inverse proportion.	343/346	Calculate and use angle sums of polygons	560
Use scale diagrams and maps	864	Know and use the sum of the exterior angles in a polygon is 360°	563
Relate ratios to fractions	330	Know and use the sum of the interior and exterior angles is 180°	562
Express a relationship between two quantities as a ratio or a fraction	330	Find the number of sides of a regular polygon, given an interior or exterior angle	564
Apply ratio to real contexts and problems (conversion, comparison, scaling, mixing, concentrations)	739	Solve problems using all angle and parallel line rules, giving reasons	488/489
Using equivalent ratios, find an unknown value when another is given.	331	Recognise and label the properties of a circle, including: centre, radius, chord, diameter and circumference	592
Divide a quantity in a given ratio.	332	Recognise and label the properties of a circle, including: tangent arc, sector and segment	592
Solve complex ratio problems including those involving multiple ratios	338	Understand and use the fact that the angle at the centre is twice the angle at the circumference	594
Convert between units of measure in the same system	692	Understand and use the fact that the angle in a semi-circle is a right angle	595
Solve problems involving the addition and subtractions of units of measure.	714	Understand and use the fact that angles in the same segment are equal	596
Estimate answers to calculations using approximation and rounding	131	Understand and use the fact that the perpendicular from the centre of a circle to the chord bisects the chord	601
Understand that premature rounding can cause problems when undertaking calculations with more than one step	132	Understand and use the fact that opposite angles in a cyclic quadrilateral sum to 180°	597
Use inequality notation to specifiy simple error intervals due to truncation or rounding	134	Use accurate drawings to solve bearing problems	495