Year 11 - Advent Assessments 2022

Subject	Mathematics - Higher		
Title/Topic	**Format**	**Length**	**Date & Time**
Paper 1 – Non-Calculator	Written Exam	1 hour 30 minutes	Tue 22 November Afternoon
Paper 2 – Calculator Allowed	Written Exam	1 hour 30 minutes	Fri 25 November Afternoon

My Advent assessment will test my knowledge on…

Students in **11X1, 11X2, 11X3, 11Y1, 11Y2** will sit the higher tier papers. Below is a list of topics that will be tested across both papers. The number to right is the Hegarty clip.

Algebra

Linear sequences, set-up and solve equations	197,188
Quadratic equations from algebraic fractions	244
Equation of a circle - centre origin	778
Interpreting real-life graphs	894
Geometric sequences	264
Factorise quadratic expressions	223
Find the nth term of a quadratic sequence	248
Solving quadratic equations (by factorising)	230
Simultaneous equations	193,194
Expressions with algebraic fractions	172
Geometric sequences	264
Factorise simple expressions	169
Straight line graphs	212
Linear inequalities as graph regions	275
Factorising quadratic expressions	225
Straight line graphs (perpendicular)	215,216
Rates of change graphs, equation of a line	896,208
Solve equations with x on both sides	184
Find the turning point of quadratic graphs	256

Probability

Venn diagrams, fraction and percentage of an amount	77,85,379
Relative frequency	357
Two-way tables, conditional probability	422,365
Product rule for counting, independent events	672,360
Two-way tables, conditional probability	422,365
Relative frequency	356,357
Expectation	355

Statistics

Bounds (calculations)	139
Scatter diagrams	453
Histograms	444,446
Mean	408

Geometry

Area of similar shapes	617
Translations	638
Bearings (sine and cosine rule)	531
Multi-step angle problems	491
Perimeter problem solving	550
3D Pythagoras	506
Circumference and arc length	536
Angles on a straight line, angles around a point	478,814
Describe transformations	651
Converting area units	700
Density	725
Trigonometry (find angle)	511
Vectors (2) - column vectors	623
Area of a sector, non-calculator trigonometry	547,845
Interior angles in quadrilaterals, circle theorems	560,597
Congruent triangles	682
3D Shapes	830

Number

Convert decimals to fractions	52,64
Rationalising surds	118
Fractions to decimal conversions	48,68,73
Simplifying surds, multiplying surds	114,115
Prime factorisation, index form	30,105
Laws of indices (powers of 0)	103
Comparing and ordering surds, indices, fractions	74,102,112
Reciprocal of fractions	71
Laws of indices	110
Operations with negative numbers, proof and counterexamples	41,42,43,324
Indices with algebraic expressions	173,174
Laws of indices (powers of non-unit fractions)	109
Square and cube numbers	99,100

Ratio

Real life exponential growth	805
Simplify ratios	329
Volume of a sphere, Conversions problem solving	580,715
Share in a given ratio, money problem solving	332,753
Real life exponential growth	805
Instantaneous rate of change	890
Simplifying ratio with algebraic terms	328,329
Recurrence relations	262
Share in a given ratio	333

What should I do to revise and prepare for this assessment?

To prepare for this assessment:

1. Study carefully the topic list provided for you above. **Work through each of the Hegarty tasks** that are given next to each topic. Watch the Hegarty lesson video, then attempt the practice questions on-line.

2. Complete the weekly past paper tasks as part of **Project 25**. It is important you attempt all questions, check your answers using the available mark scheme and then write in any corrections from the mark scheme with your red pen. Record your performance on the summary sheet in your booklet, marking on any questions you want your teacher to review or revisit.

3. **Complete your revision workbook** that your teacher has provided you. You should work through all the questions in your revision workbook, checking your work using the answers provided. You could ask your parent or relative to check your work with you, and discuss the areas you need to revisit. This revision workbook must be **completed in full and handed in to your teacher** for checking the day of your first assessment.

4. **Study the knowledge organisers** booklet provided to you. You should use the technique of **'look, cover, check'** to ensure you can recall all of the key facts and techniques for the identified topics.

5. **Listen attentively during your Immersion Revision Session** which will take place in your Project 25 Friday lessons over the next five weeks. Your teacher will provide you with a number of key tips to help you succeed. They will revisit the topics listed above.

What useful websites/resources could I use to help me prepare?

Project 25 Papers – Found in your workbook.
Revision Booklet to be handed to you by your teacher.

You can access revision lessons on Hegarty Maths. Use the reference numbers above to search for the relevant tasks. Your teacher may set you specific tasks to complete as part of your homework.
https://www.hegartymaths.com