Pearson Edexcel Level 1/Level 2 International GCSE

May–June 2022 Assessment Window

Syllabus reference **4MA1**

Mathematics

Advance Information
Version 2

You are not permitted to take this notice into the examination.
This document is valid if downloaded from the Pearson Qualifications website.

Instructions

- Please ensure that you have read this notice before the examination.

Information

- This notice covers all examined components.
- The format/structure of the assessments remains unchanged.
- This advance information details the focus of the content of the exams in the May–June 2022 assessments.
- There are no restrictions on who can use this notice.
- This notice is meant to help students to focus their revision time.
- Students and teachers can discuss the advance information.
- This document has 32 pages.

There are two option codes for this qualification. Some centres will enter for option "R", depending on their location – if you're unsure if your centre uses option "R" papers you should contact your centre who can confirm and check the Information Manual. Please ensure you consult the advance information relevant to the option code used within your centre. Information related to the "R" option is indicated by an "R" after the paper number, e.g. 4MA1/02R or Paper 2R.

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General advice

- In addition to covering the content outlined in the advance information, students and teachers should consider how to:
  - manage their revision of parts of the specification which may be assessed in areas not covered by the advance information
  - manage their revision of other parts of the specification which may provide knowledge which helps with understanding the areas being tested in 2022.
- For specifications with synoptic assessments, topics not explicitly given in the advance information may appear, e.g. where students are asked to bring together knowledge, skills and understanding from across the specification.
- For specifications with optional papers/topics/content, students should only refer to the advance information for their intended option.
- For specifications with NEA, advance information does not cover any NEA components.

A link to the Joint Council for Qualifications guidance document on advance information can be found on the Joint Council for Qualifications website or here.

Advance Information

Subject specific section

- Advance information will be provided for each paper and for each tier of entry.
- The information is presented in approximate specification order and does not reflect the order of the questions.
- Questions may be answerable using one or more of the indicated areas of specification content.
- The areas of content listed are suggested as key areas of focus for revision and final preparation, in relation to the May–June 2022 examinations.
- The aim should still be to cover all specification content in teaching and learning.
- Students may need to draw on prior knowledge and skills.
- Students will still be expected to apply their knowledge to unfamiliar contexts.
- Students responses to questions may draw upon knowledge, skills and understanding from across the content listed when responding to questions.
- Students will be credited for using any relevant knowledge from any other topic areas when answering questions.

Paper 1F – grouped by content area

Number	
Integers	Order integers
	Types of integers
	Rounding integers
	Use of the four rules
Powers and roots	Highest Common Factor
	Lowest Common Multiple
Percentages	One number as a percentage of another
	Reverse percentage
	Compound interest
Ratio and proportion	Word problems
Standard form	Conversion
Applying number	Money
Algebra	
Manipulation	Simplification
	Expansion of brackets
	Indices
	Use of formulae
Equations	Linear equations
Sequences, functions and graphs	
Sequences	*n*th term of arithmetic sequence
Graphs	Graphs of lines

Geometry and trigonometry	
Angles and shapes	Names of angles and shapes
	Geometric reasoning
	Angles in polygons
	Construction
Measures	Interpret scales
	Estimation
	Unit conversion
	Pressure
Length, area, volume	Area and perimeter of composite shape
	Volume of cylinder
Pythagoras and Trigonometry	Pythagoras' Theorem
Statistics and probability	
Statistical measures	Mean
Probability	Probability scale
	Probability
	Expected frequency

Paper 2F – grouped by content area

Number	
Integers	Order integers
	Types of integers
Fractions	One amount as a fraction of another
	Fraction of an amount
	Use of the four rules
Decimals	Write a fraction as a decimal
	Order decimals
Set language and notation	Complete a Venn diagram
Percentages	Write a decimal as a percentage
	Percentage of an amount
	Compound interest
Ratio and proportion	Divide a quantity into given ratios
Applying number	Money
	Volume
	Currency conversions
Other	Use of a scientific calculator
Algebra	
Manipulation	Simplification
	Expansion of brackets
	Factorisation
	Use of formulae
Equations	Simultaneous equations, linear
	Quadratic equations
	Linear equations
Inequalities	Graphical representation

Sequences, functions and graphs	
Sequences	Find terms in an arithmetic sequence
Graphs	Graphs of lines
Geometry and trigonometry	
Angles and shapes	Congruent shapes
	Lines of symmetry
Measures	Unit conversion
	Speed
Length, area, volume	Area and perimeter of composite shape
	Area and perimeter of circle
	Area and perimeter of rectangle
Pythagoras and Trigonometry	Trigonometry
Vectors and transformation geometry	
Transformations	Transformations
Statistics and probability	
Diagrams	Bar chart
Statistical measures	Mode
	Median
	Mean
	Range
Probability	Listing outcomes
	Probability

Paper 1H – grouped by content area

Number	
Fractions	Fraction of an amount
Powers and roots	Highest Common Factor
	Lowest Common Multiple
	Surds
Percentages	Reverse percentage
	Compound interest
	Percentage of an amount
Standard form	Conversion
Algebra	
Manipulation	Expansion of brackets
	Indices
	Factorisation
	Algebraic fractions
	Completing the square
Equations	Linear equations
	Quadratic equations
Sequences, functions and graphs	
Sequences	*n*th term of arithmetic sequence
	Sum of arithmetic series
Functions	Inverse functions
	Transformation of functions
Calculus	Linear kinematics

Geometry and trigonometry	
Angles and shapes	Angles in polygons
	Geometric reasoning
Measures	Pressure
Length, area, volume	Volume of cylinder
	Volume of composite solid
	Area of a sector
Pythagoras and Trigonometry	Pythagoras' Theorem
	Sine and cosine rules
Statistics and probability	
Diagrams	Histogram
Probability	Probability
	Expected frequency
	Probability tree diagram

Paper 2H – grouped by content area

Number	
Fractions	Fraction of an amount
	Use of the four rules
Powers and roots	Surds
Set language and notation	Complete a Venn diagram
Percentages	Percentage of an amount
	Compound interest
Ratio and proportion	Divide a quantity into given ratios
Other	Bounds
Algebra	
Manipulation	Factorisation
	Expansion of brackets
	Subject of a formula
	Indices
	Algebraic fractions and formulae
Equations	Simultaneous equations, linear and quadratic
	Simultaneous equations, linear
	Quadratic equations
	Linear equations
Proportion	Direct proportion
Inequalities	Graphical representation
	Quadratic inequality

Sequences, functions and graphs	
Graphs	Graphs of lines
	Parallel and perpendicular lines
	Transformations of functions
	Graphs of trigonometric functions
Geometry and trigonometry	
Measures	Speed
	Unit conversion
Length, area, volume	Area and perimeter of composite shape
	Area and perimeter of circle
	Area and perimeter of rectangle
Pythagoras and Trigonometry	Pythagoras' Theorem
	Trigonometry
Vectors and transformation geometry	
Vectors	Vector proof
Statistics and probability	
Diagrams	Cumulative frequency diagram
Statistical measures	Mode
	Median
	Mean
	Range
Probability	Conditional probability

Paper 1F and 2F – Foundation Tier Overall

Number	
Integers	Order integers
	Types of integers
	Rounding integers
	Use of the four rules
Fractions	One amount as a fraction of another
	Fraction of an amount
	Use of the four rules
Decimals	Write a fraction as a decimal
	Order decimals
Set language and notation	Complete a Venn diagram
Powers and roots	Highest Common Factor
	Lowest Common Multiple
Percentages	One number as a percentage of another
	Reverse percentage
	Compound interest
	Write a decimal as a percentage
	Percentage of an amount
Ratio and proportion	Word problems
	Divide a quantity into given ratios
Standard form	Conversion
Applying number	Currency conversion
	Money
	Volume
Other	Use of a scientific calculator

Algebra	
Manipulation	Simplification
	Expansion of brackets
	Factorisation
	Indices
	Use of formulae
Equations	Linear equations
	Simultaneous equations, linear
	Quadratic equations
Inequalities	Graphical representation
Sequences, functions and graphs	
Sequences	*n*th term of arithmetic sequence
	Find terms in an arithmetic sequence
Graphs	Graphs of lines
Geometry and trigonometry	
Angles and shapes	Names of angles and shapes
	Geometric reasoning
	Angles in polygons
	Construction
	Lines of symmetry
	Congruent shapes
Measures	Speed
	Interpret scales
	Estimation
	Unit conversion
	Pressure

Length, area, volume	Area and perimeter of composite shape
	Volume of cylinder
	Area and perimeter of circle
	Area and perimeter of rectangle
Pythagoras and Trigonometry	Pythagoras' Theorem
	Trigonometry
Vectors and transformation geometry	
Transformations	Transformations
Statistics and probability	
Diagrams	Bar chart
Statistical measures	Mode
	Median
	Mean
	Range
Probability	Probability scale
	Expected frequency
	Listing outcomes
	Probability

Paper 1H and 2H – Higher Tier Overall

Number	
Fractions	Fraction of an amount
	Use of the four rules
Powers and roots	Highest Common Factor
	Lowest Common Multiple
	Surds
Set language and notation	Complete a Venn diagram
Percentages	Reverse percentage
	Compound interest
	Percentage of an amount
Ratio and proportion	Divide a quantity into given ratios
Standard form	Conversion
Other	Bounds
Algebra	
Manipulation	Expansion of brackets
	Indices
	Factorisation
	Algebraic fractions
	Completing the square
	Subject of a formula
	Indices
	Algebraic fractions and formulae

Equations	Linear equations
	Quadratic equations
	Simultaneous equations, linear and quadratic
	Simultaneous equations, linear
Proportion	Direct proportion
Inequalities	Graphical representation
	Quadratic inequality
Sequences, functions and graphs	
Sequences	*n*th term of arithmetic sequence
	Sum of arithmetic series
Functions	Inverse functions
	Transformation of functions
Graphs	Graphs of lines
	Parallel and perpendicular lines
	Transformations of functions
	Graphs of trigonometric functions
Calculus	Linear kinematics
Geometry and trigonometry	
Angles and shapes	Angles in polygons
	Geometric reasoning
Measures	Pressure
	Speed
	Unit conversion

Length, area, volume	Volume of cylinder
	Volume of composite solid
	Area of a sector
	Area and perimeter of composite shape
	Area and perimeter of circle
	Area and perimeter of rectangle
Pythagoras and Trigonometry	Pythagoras' Theorem
	Trigonometry
	Sine and cosine rules
Vectors and transformation geometry	
Vectors	Vector proof
Statistics and probability	
Diagrams	Histogram
	Cumulative frequency diagram
Statistical measures	Mode
	Median
	Mean
	Range
Probability	Probability
	Expected frequency
	Probability tree diagram
	Conditional probability

Paper 1FR – grouped by content area

Number	
Integers	Order integers
	Types of integers
	Use of the four rules
Fractions	Write a decimal as a fraction
	Use of the four rules
Percentages	Percentage of an amount
	One number as a percentage of another
	Compound interest
Ratio and proportion	Share in a ratio
Applying number	Money
	Cooking
Other	Use of a scientific calculator
Algebra	
Manipulation	Simplification
	Use of formulae
	Factorisation
	Expansion of brackets
	Indices
Equations	Linear equations
	Quadratic equations
Inequalities	Linear inequality

Sequences, functions and graphs	
Sequences	Terms of a sequence
Graphs	Coordinates
	Graphs of lines
Geometry and trigonometry	
Angles and shapes	Names of angles and shapes
	Symmetry
	Measure an angle
	Angles in polygons
	Geometric reasoning
Measures	Unit conversion
	Density
Length, area, volume	Area of triangle
	Volume of a cylinder
	Area and perimeter of composite shape
Pythagoras and Trigonometry	Pythagoras' Theorem
Statistics and probability	
Diagrams	Pictogram
	Pie chart
Statistical measures	Mean
Probability	Probability
	Expected frequency

Paper 2FR – grouped by content area

Number	
Integers	Order integers
	Rounding
	Place value
	Use of the four rules
	Prime factors
Fractions	Fraction of an amount
Decimals	Order decimals
	Rounding
Powers and roots	Indices
Set language and notation	List members of a set
Percentages	Percentage of an amount
	Reverse percentage
Ratio and proportion	Write as a ratio
Standard form	Conversion
	Use of the four rules
Applying number	Unit conversion
	Money
	Time
Other	Use of a scientific calculator

Algebra	
Manipulation	Simplification
	Expansion of brackets
	Use of formulae
	Indices
	Factorisation
Equations	Linear equations
Sequences, functions and graphs	
Sequences	Terms of a sequence
Graphs	Graphs of lines
Geometry and trigonometry	
Angles and shapes	Names of angles and shapes
	Angles in polygons
	Construction
Measures	Interpret scales
	Unit conversion
Length, area, volume	Area and perimeter of composite shape
	Area of trapezium
	Area and perimeter of circle
Pythagoras and Trigonometry	Trigonometry
Vectors and transformation geometry	
Transformations	Transformations

Statistics and probability	
Diagrams	Bar chart
	Two-way table
Statistical measures	Mode
	Median
	Mean
	Range
Probability	Probability
	Listing outcomes

Paper 1HR – grouped by content area

Number	
Fractions	Use of the four rules
Powers and roots	Highest Common Factor
	Indices
	Surds
Percentages	Percentage of an amount
	Compound interest
Algebra	
Manipulation	Use of formulae
	Expansion of brackets
	Indices
	Factorisation
	Completing the square
Equations	Quadratic equations
	Simultaneous equations, linear
Inequalities	Linear inequality
Sequences, functions and graphs	
Sequences	Terms of a sequence
	Sum of arithmetic series
Functions	Transformations of functions
Graphs	Graphs of lines
Calculus	Differentiation
	Stationary points

Geometry and trigonometry	
Angles and shapes	Circle properties
Measures	Density
Length, area, volume	Area and perimeter of composite shape
	Volume of a cylinder
	Area and volume of similar figures
	Area and perimeter of triangles
Pythagoras and Trigonometry	Pythagoras' Theorem
	Pythagoras in 3-D shape
	Sine and cosine rules
Statistics and probability	
Diagrams	Histogram
Statistical measures	Mean
	Interquartile range
Probability	Probability
	Expected frequency

Paper 2HR – grouped by content area

Number	
Integers	Prime factors
Decimals	Recurring decimal to a fraction
Powers and roots	Indices
Set language and notation	List members of a set
Percentages	Reverse percentage
Standard form	Conversion
	Use of the four rules
Other	Bounds
Algebra	
Manipulation	Indices
	Factorisation
	Use of formulae
	Expansion of brackets
	Algebraic fractions
Equations	Quadratic equations
	Simultaneous equations, linear and quadratic
	Simultaneous equations, linear
	Linear equations
Inequalities	Quadratic inequality
Sequences, functions and graphs	
Functions	Composition of functions
	Transformation of functions
Graphs	Recognise graphs
	Perpendicular lines

Geometry and trigonometry	
Angles and shapes	Angles in polygons
Measures	Speed
Length, area, volume	Similarity
	Perimeter of a sector
	Area and perimeter of triangle
	Volume of sphere and cone
	Area and volume of similar figures
	Area and perimeter of composite shape
	Area and perimeter of circle
Pythagoras and Trigonometry	Trigonometry
Vectors and transformation geometry	
Vectors	Vector proof
Transformations	Transformations
Statistics and probability	
Diagrams	Cumulative frequency diagram
Statistical measures	Median
	Range
Probability	Probability

Paper 1FR and 2FR – Foundation Tier Overall

Number	
Integers	Order integers
	Types of integers
	Use of the four rules
	Rounding
	Place value
	Prime factors
Fractions	Write a decimal as a fraction
	Use of the four rules
	Fraction of an amount
Decimals	Order decimals
	Rounding
Powers and roots	Indices
Set language and notation	List members of a set
Percentages	Percentage of an amount
	One number as a percentage of another
	Compound interest
	Reverse percentage
Ratio and proportion	Share in a ratio
	Write as a ratio
Standard form	Conversion
	Use of the four rules

Applying number	Unit conversion
	Money
	Time
	Cooking
Other	Use of a scientific calculator
Algebra	
Manipulation	Simplification
	Use of formulae
	Factorisation
	Expansion of brackets
	Indices
Equations	Linear equations
	Quadratic equations
Inequalities	Linear inequality
Sequences, functions and graphs	
Sequences	Terms of a sequence
Graphs	Coordinates
	Graphs of lines
Geometry and trigonometry	
Angles and shapes	Names of angles and shapes
	Symmetry
	Measure an angle
	Angles in polygons
	Geometric reasoning
	Construction

Measures	Unit conversion
	Interpret scales
	Density
Length, area, volume	Area of triangle
	Volume of a cylinder
	Area and perimeter of composite shape
	Area of trapezium
	Area and perimeter of circle
Pythagoras and Trigonometry	Pythagoras' Theorem
Vectors and transformation geometry	
Transformations	Transformations
Statistics and probability	
Diagrams	Pictogram
	Pie chart
	Bar chart
	Two-way table
Statistical measures	Mode
	Median
	Mean
	Range
Probability	Probability
	Expected frequency
	Listing outcomes

Paper 1HR and 2HR – Higher Tier Overall

Number	
Integers	Prime factors
Fractions	Use of the four rules
Decimals	Recurring decimal to a fraction
Powers and roots	Highest Common Factor
	Indices
	Surds
Set language and notation	List members of a set
Percentages	Percentage of an amount
	Compound interest
	Reverse percentage
Standard form	Conversion
	Use of the four rules
Other	Bounds
Algebra	
Manipulation	Use of formulae
	Expansion of brackets
	Indices
	Factorisation
	Completing the square
	Algebraic fractions
Equations	Linear equations
	Quadratic equations
	Simultaneous equations, linear
	Simultaneous equations, linear and quadratic

Inequalities	Linear inequality
	Quadratic inequality
Sequences, functions and graphs	
Sequences	Terms of a sequence
	Sum of arithmetic series
Functions	Transformations of functions
	Composition of functions
Graphs	Graphs of lines
	Recognise graphs
	Perpendicular lines
Calculus	Differentiation
	Stationary points
Geometry and trigonometry	
Angles and shapes	Circle properties
	Angles in polygons
Measures	Density
	Speed
Length, area, volume	Area and perimeter of composite shape
	Volume of a cylinder
	Area and volume of similar figures
	Area and perimeter of triangles
	Similarity
	Perimeter of a sector
	Volume of sphere and cone
	Area and perimeter of circle

Pythagoras and Trigonometry	Pythagoras' Theorem
	Pythagoras in 3-D shape
	Sine and cosine rules
	Trigonometry
Vectors and transformation geometry	
Vectors	Vector proof
Transformations	Transformations
Statistics and probability	
Diagrams	Histogram
	Cumulative frequency diagram
Statistical measures	Mean
	Median
	Range
	Interquartile range
Probability	Probability
	Expected frequency

END OF ADVANCE INFORMATION