Maths (Ordinary)

JEAN KELLY

Part 1: Getting familiar with the exam papers

Part 2: Understanding how the exam is marked

**Part 3:** How to study maths

Part 4: Questions & Answers session

Part 1: Getting familiar with the exam papers

THE INSTITUTE OF EDUCATION

Paper 1 : 2½ hours in duration

- Financial Maths

- Number Systems,
  Indices & Surds

- Algebra

- Functions & Graphs

- Differentiation (Calculus)

- Complex Numbers

- Number Patterns
  (Sequences & Series)

Paper 2 : 2½ hours in duration

- Coordinate Geometry of the Line

- Coordinate Geometry of the Circle

- Trigonometry

- Geometry &
  Transformations

- Probability

- Statistics

- Area & Volume
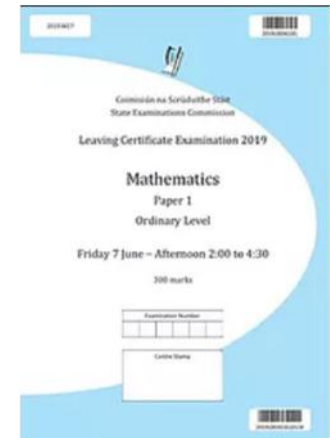
Part 1: Getting familiar with the exam papers

Unlike previous years, the 2021 maths exam will have choice between the questions.

Each of the exam papers is broken down as follows:

Section A: Concepts and Skills (150 marks)

Answer **five** of six questions, worth **30 marks** each**.**

Section B: Contexts and Applications (150 marks)
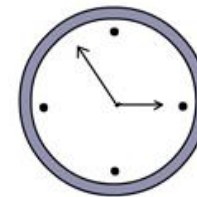
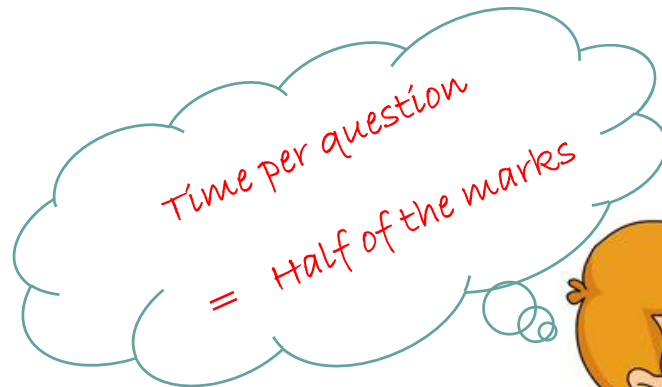Answer **three** of four questions, worth **50 marks** each.

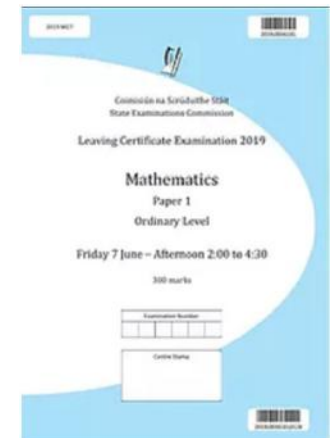**Part 1:** Getting familiar with the exam papers

Watch your time!

Part 1: Getting familiar with the exam papers

Time per question

= Half of the marks

MAXIMUM TIME

Section A:
15 mins per question

Section B:
25 mins per question

Part 2: Understanding how the exam is marked

THE INSTITUTE OF EDUCATION

Be familiar with how the marking scheme is applied.

- In general, partial credit is applied for making any significant correct step. The more steps you take in the right direction, the more marks you will earn

- Usually there are very few marks going for actually getting to the final answer. The marks are earned for showing your process and workings along the way. (**Process** not **Product**)

- If you make a mistake and bring the incorrect answer forward, you will still earn marks for using this incorrect value correctly in later parts of a question.

- There are no marks for blanks! Try something - draw a diagram to represent the information in the question, write down a relevant formula from the tables or make an effort to begin the question. Make sure that you attempt EVERY question.

Part 2: Understanding how the exam is marked

‖THE INSTITUTE OF EDUCATION

Sample marking scheme – These scales can vary every year.

Structure of the marking scheme

Candidate responses are marked according to different scales, depending on the types of response anticipated. Scales labelled A divide candidate responses into two categories (correct and incorrect). Scales labelled B divide responses into three categories (correct, partially correct, and incorrect), and so on. The scales and the marks that they generate are summarised in this table:

Scale label	A	B	C	D	E
No of categories	2	3	4	5	6
5 mark scales	0, 5	0, 3, 5	0, 2, 4, 5	0, 2, 3, 4, 5	
10 mark scales		0, 5, 10	0, 4, 5, 10	0, 3, 5, 8, 10	
15 mark scales			0, 6, 9, 15	0, 5, 7, 9, 15	

A general descriptor of each point on each scale is given below. More specific directions in relation to interpreting the scales in the context of each question are given in the scheme, where necessary.

2019   Paper 1

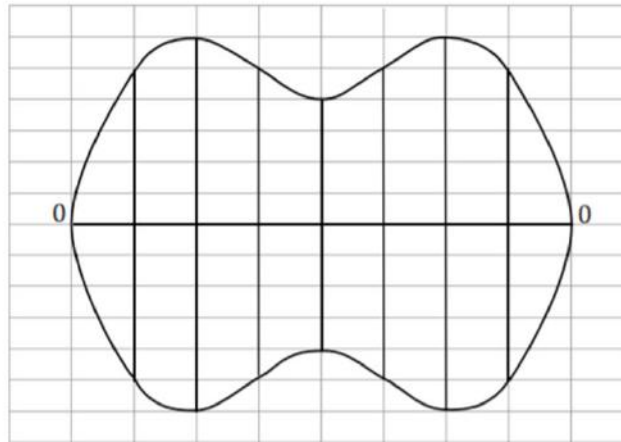## Question 5   (25 marks)

Harry draws a scale diagram of the portion of his garden that is covered in lawn.
His diagram is shown below.
Each box on the grid is 1 cm × 0·5 cm.
Each cm on Harry's diagram represents 3 m.
In order to estimate the area of the lawn Harry divides the diagram into eight sections.

(a)   Use the trapezoidal rule to estimate the area of the lawn using the scale: 1 cm = 3 m.

Q5	Model Solution – 25 Marks	Marking Notes
(a)	$A = \dfrac{3}{2}[0+0+2(15+18+15+12+15+18+15]$ $A = 324 \text{ m}^2$	**Scale 15D (0, 4, 7, 11, 15)** *Low Partial Credit:* • Any correct dimension identified • Correct answer without work *Mid Partial Credit* • Correct formula with some correct substitution *High Partial Credit:* • Correct formula fully substituted correctly

THE **INSTITUTE** OF
EDUCATION

2017   Paper 2

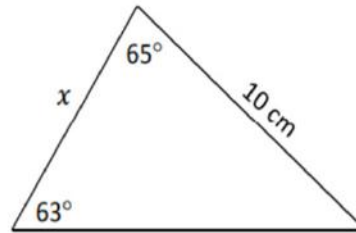## Question 6   (25 marks)

(a) Find the distance x in the diagram below (not to scale).
Give your answer correct to 2 decimal places.

Q6	Model Solution – 25 Marks	Marking Notes
(a)	$$\frac{x}{\sin 52} = \frac{10}{\sin 63}$$ $$x = \frac{10 \times \sin 52}{\sin 63}$$ $$x = 8{\cdot}84 \text{ cm}$$	**Scale 10D (0, 4, 5, 7, 10)** *Low Partial Credit:* • Any work of merit. [e.g. Third Angle $= 52°$] • Sine rule with some substitution. *Mid Partial Credit:* • Finds the length of the base side. (10·17) *High Partial Credit:* • Full correct substitution without calculation. • Incorrect calculator mode but otherwise correct. (once only) • Correct answer without work. Rad $= 58{\cdot}95392809$ Grad $= 8{\cdot}721730163$

Part 3:   How to study maths

Step 1:   Material to be learned off

Paper 1

- |Modulus| in Complex Numbers & Transformations

$$|z| = \sqrt{a^2 + b^2} \text{ where } z = a + bi$$

- Basic Arithmetic: Ratios, Fractions Decimals, Percentages, Percentage Error, Index Notation, Speed, Distance & Time

- Financial Maths: Profit & Loss Appreciation & Depreciation, Interest & AER (Rates) VAT & Taxes (Income Tax)

Paper 2

- Constructions (19)

- Geometry - Axioms (5) & Theorems (20)

- Geometry Definitions & Transformations

- Statistical Terms

- Probability Terms

THE **INSTITUTE** OF **EDUCATION**

Step 2: Practice makes perfect

*Like learning any skill,
Maths requires a lot of practice.*

- Pick a topic to revise

- Go back over the main concepts and skills required

- Find some comprehensive examples.
  Cover, or hide, the solution and try to complete the question yourself

- Find similar questions (preferably ones you have fully worked solutions for) and try to do them again without looking at the solution

- Once you feel like you have a good handle on that topic, move onto a new one.

- BUT do not put the first topic away entirely. Every so often go back and try to do a question or two, to keep it fresh in your mind.

Part 3: How to study maths

THE INSTITUTE OF EDUCATION

Step 3:   Try not to get overwhelmed (Bitesize Bits)

- Break the course down into topics (Algebra, Trigonometry, etc)

- Break each topic down into smaller sections (BB)

- Revise each section slowly but surely, starting with the basics and building up to the harder parts.

- Aim to do approximately **30 minutes** of revision **per day**.

- Take your time. Slow and steady wins the race!

Its not about the amount you *cover* but what you *uncover* along the way

Success!
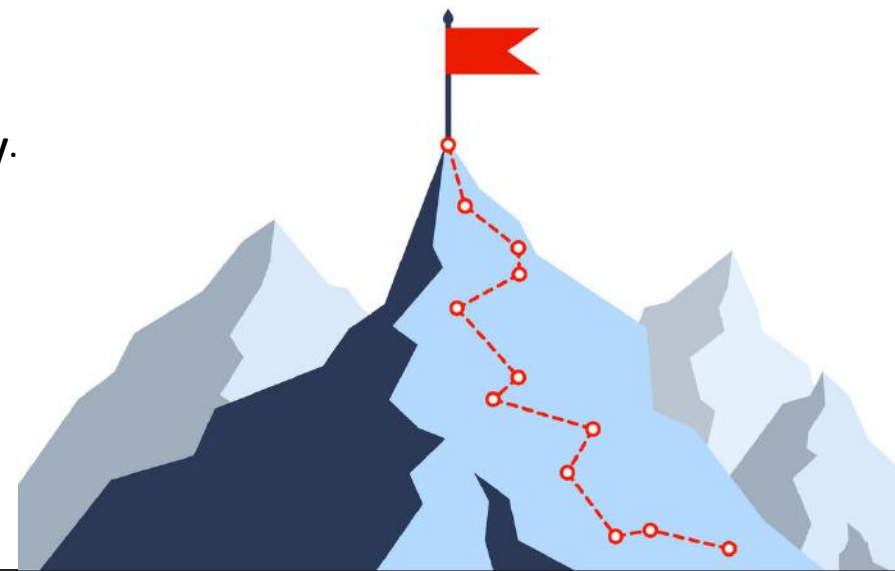
Part 4: Questions and Answers session