



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination
Sample Paper

Mathematics (Project Maths)

Paper 2

Ordinary Level

Time: 2 hours, 30 minutes

300 marks

Examination number

Centre stamp

Running total	
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For examiner	
Question	Mark
1	
2	
3	
4	
5	
6	
7	
8	
9	
Total	

Grade

Instructions

There are **three** sections in this examination paper:

Section 0	Area and Volume (old syllabus)	50 marks	1 question
Section A	Concepts and Skills	125 marks	5 questions
Section B	Contexts and Applications	125 marks	3 questions

Answer **all nine** questions, as follows:

In Section 0, answer Question 1

In Section A, answer Questions 2, 3, 4, 5 and 6

In Section B, answer:

Question 7

Question 8

either Question 9A **or** Question 9B.

Write your answers in the spaces provided in this booklet. There is space for extra work at the back of the booklet. You may also ask the superintendent for more paper. Label any extra work clearly with the question number and part.

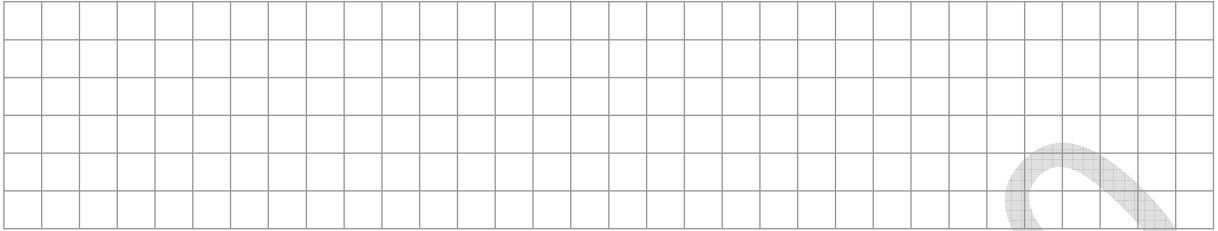
The superintendent will give you a copy of the booklet of *Formulae and Tables*. You must return it at the end of the examination. You are not allowed to bring your own copy into the examination.

Marks will be lost if all necessary work is not clearly shown.

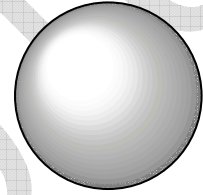
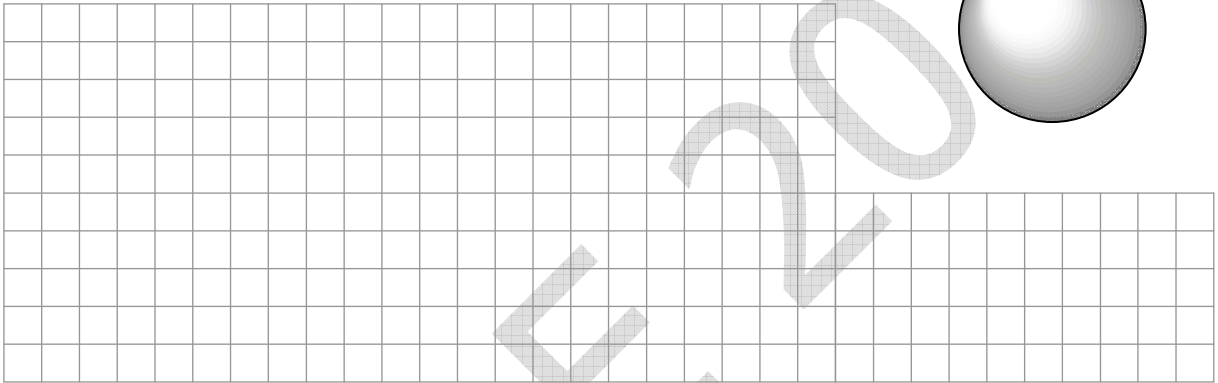
Answers should include the appropriate units of measurement, where relevant.

Answers should be given in simplest form, where relevant.

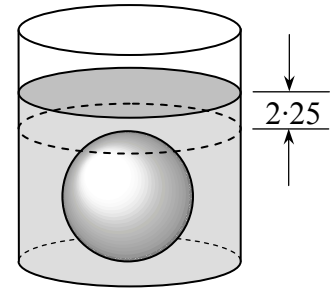
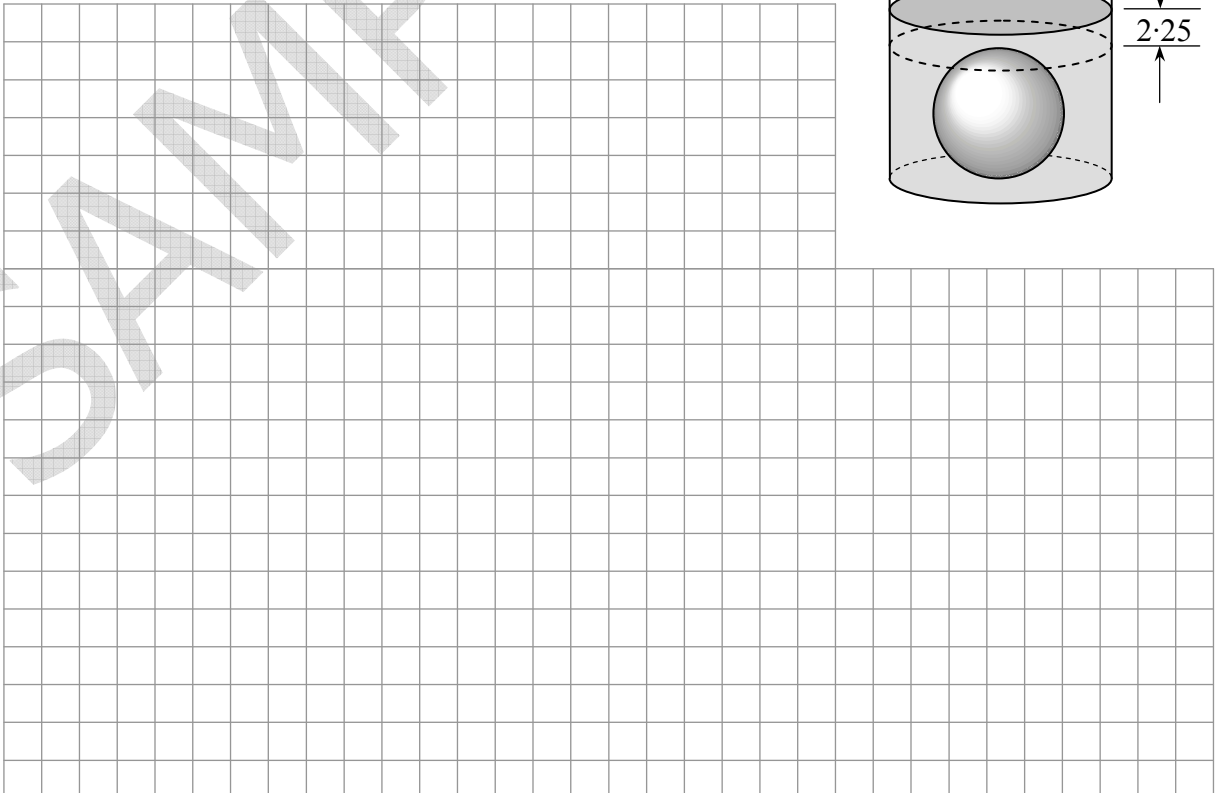
- (ii) The owner of the house digs an ornamental pond in the garden. The surface area of the pond is 7 m^2 . What percentage of the area of the garden is taken up by the pond?
Give your answer correct to the nearest percent.



- (c) (i) The volume of a sphere is $36\pi \text{ cm}^3$.
Find the radius of the sphere.



- (ii) When the sphere is fully immersed in a cylinder of water, the level of the water rises by 2.25 cm .
Find the radius of the cylinder.



Answer **all five** questions from this section.

Question 2**(25 marks)**

The size, mean and standard deviation of four sets of data A, B, C and D are given in this table:

	A	B	C	D
size (N)	1000	100	100	10
mean (μ)	10	100	1000	100
standard deviation (σ)	20	30	20	10

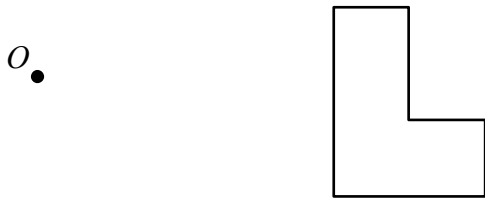
Complete the sentences below by inserting the relevant letter in each space:

- (a) The set that contains more numbers than any other is ____ and the set that contains fewer numbers than any other is ____.
- (b) On average, the data in set ____ are the biggest numbers and the data in set ____ are the smallest numbers.
- (c) The data in set ____ are more spread out than the data in the other sets.
- (d) The set that **must** contain some negative numbers is set ____.
- (e) If the four sets are combined, the median is most likely to be a value in set ____.

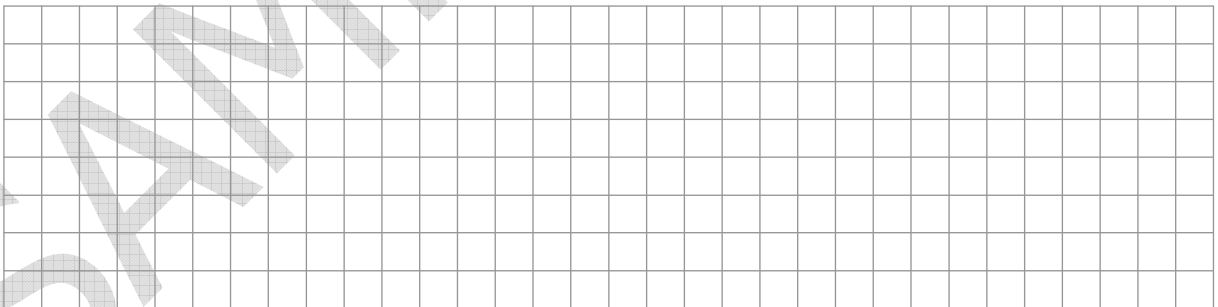
Question 3

(25 marks)

- (a) Construct the image of the shape under the enlargement with centre O and scale factor 2.5 .



- (b) Given that the area of the original shape is 3.5 cm^2 , find the area of the image.



Question 6

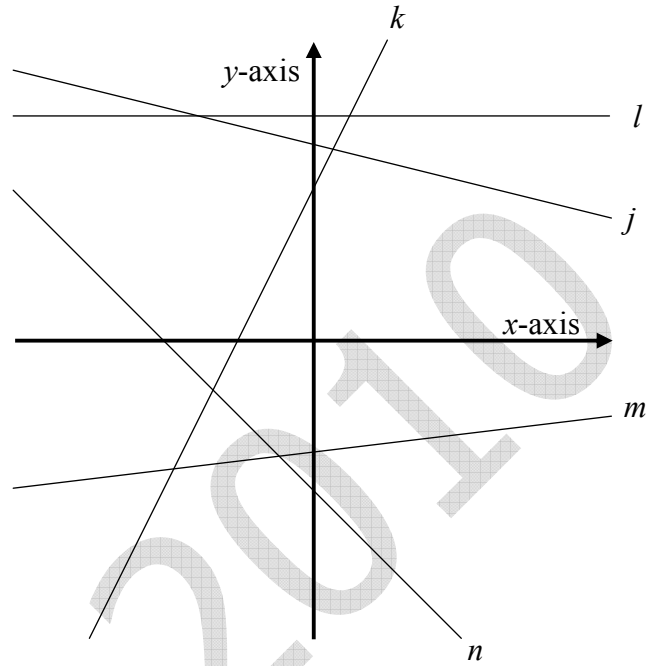
(25 marks)

- (a) Five lines $j, k, l, m,$ and n in the co-ordinate plane are shown in the diagram.

The slopes of the five lines are in the table below.

Complete the table, matching the lines to their slopes.

slope	line
2	
$\frac{1}{8}$	
0	
$-\frac{1}{4}$	
-1	



- (b) The diagram shows four circles of equal radius. The circles are touching as shown.

The equation of c_1 is $x^2 + y^2 = 9$.

- (i) Write down the radius of c_1 .

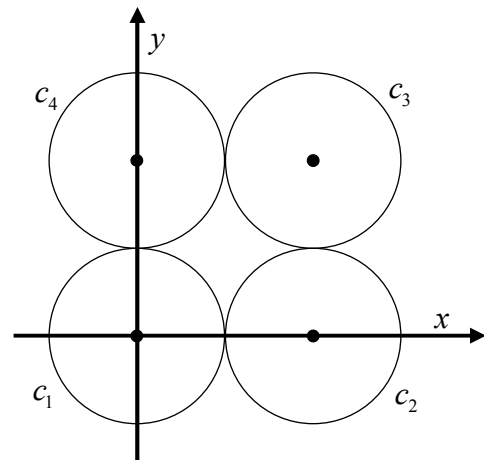
Answer: _____

- (ii) Write down the co-ordinates of the centre of c_3 .

Answer: _____

- (iii) Write down the equation of c_3 .

Answer: _____



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Distance from G to B :

A large grid of 20 columns and 15 rows, intended for drawing a route from point G to point B.

- (b) Find the time it will take to cross by each route.

Time from G to A :

A grid of 20 columns and 10 rows, intended for calculating the time from G to A.

Time from G to B :

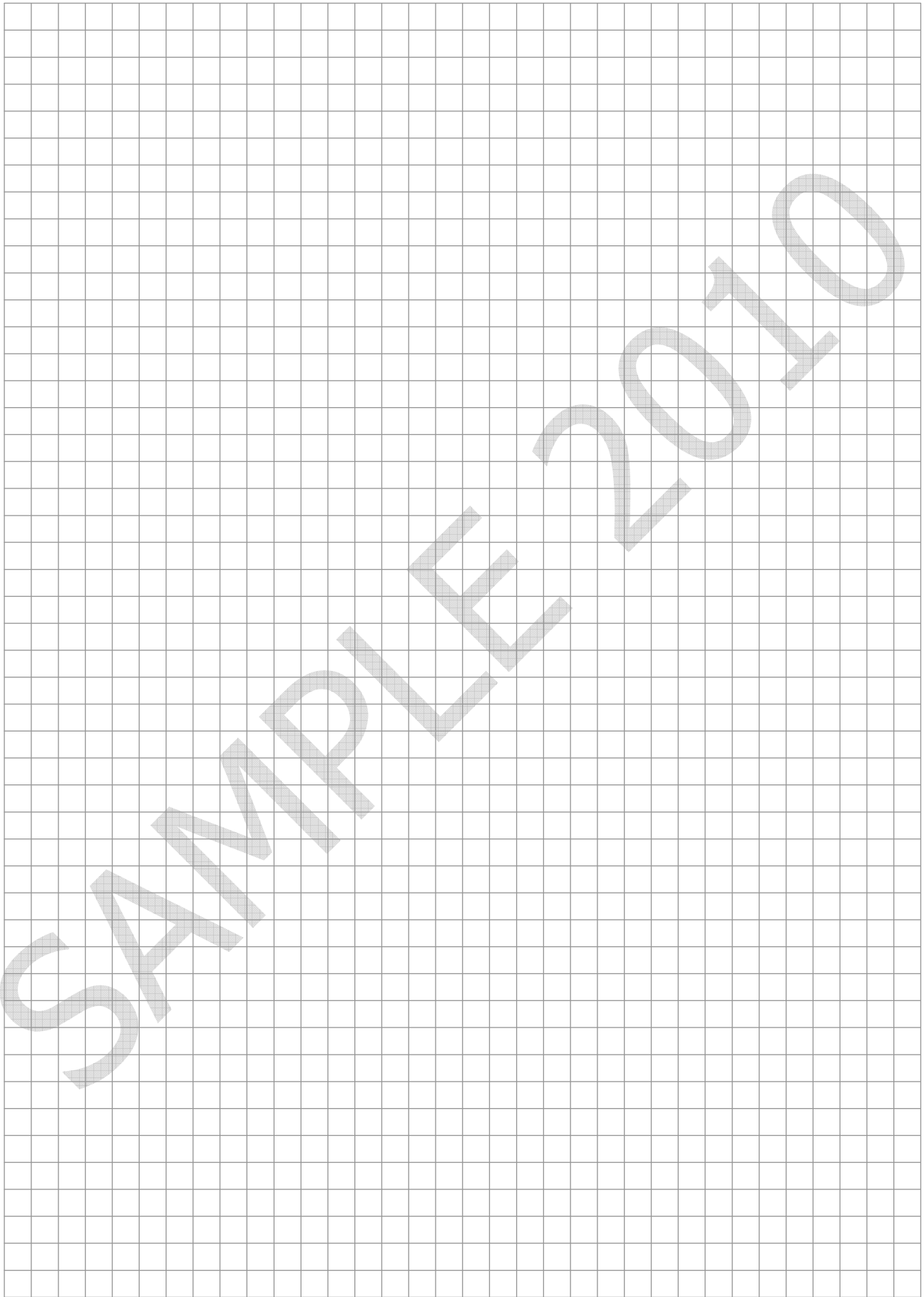
A grid of 20 columns and 10 rows, intended for calculating the time from G to B.

- (c) Gráinne wants to get home as fast as possible. Give one possible reason why she might **not** choose the faster of the two routes across the river.

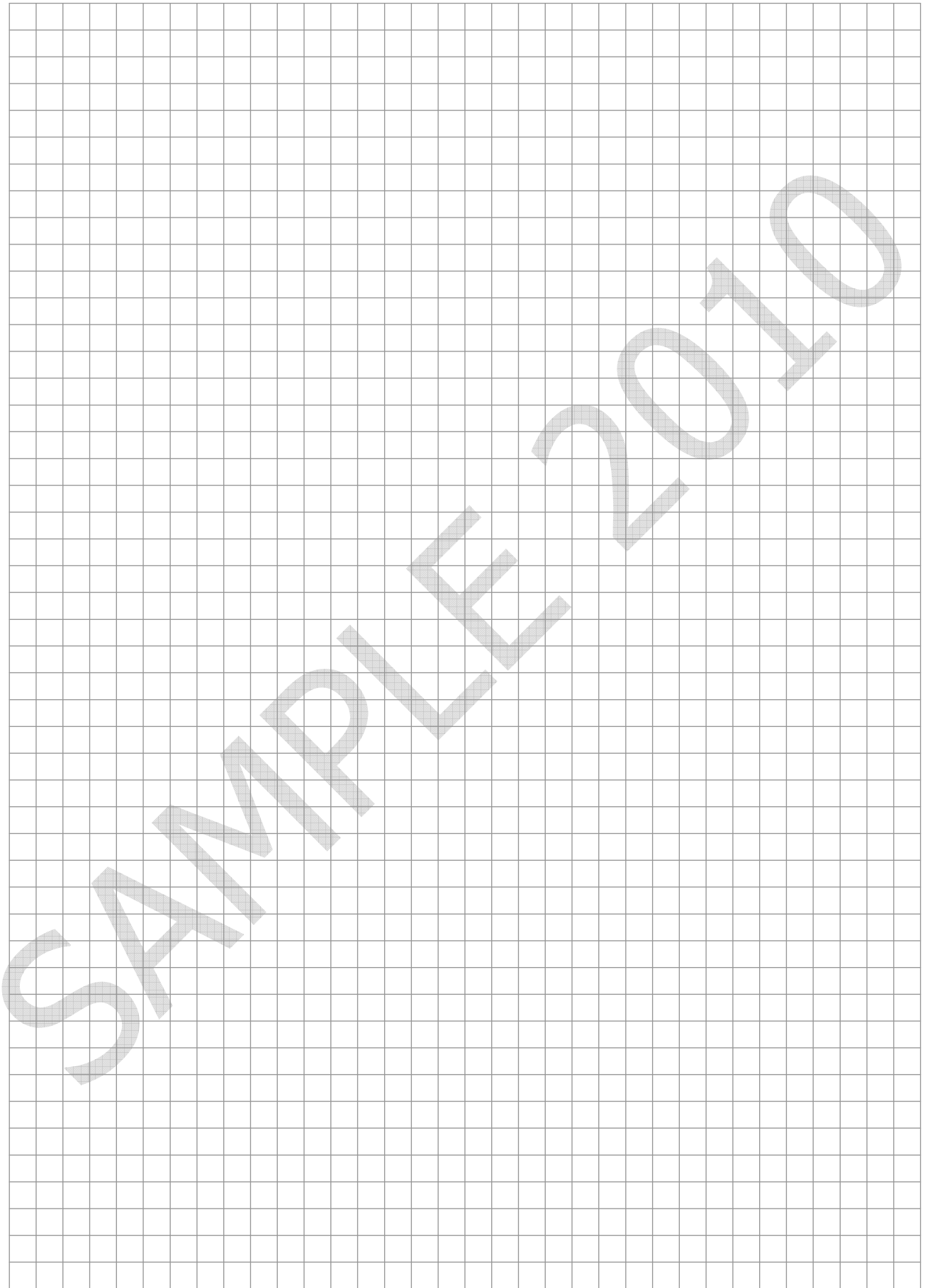
A grid of 20 columns and 10 rows, intended for providing a reason for not choosing the faster route.

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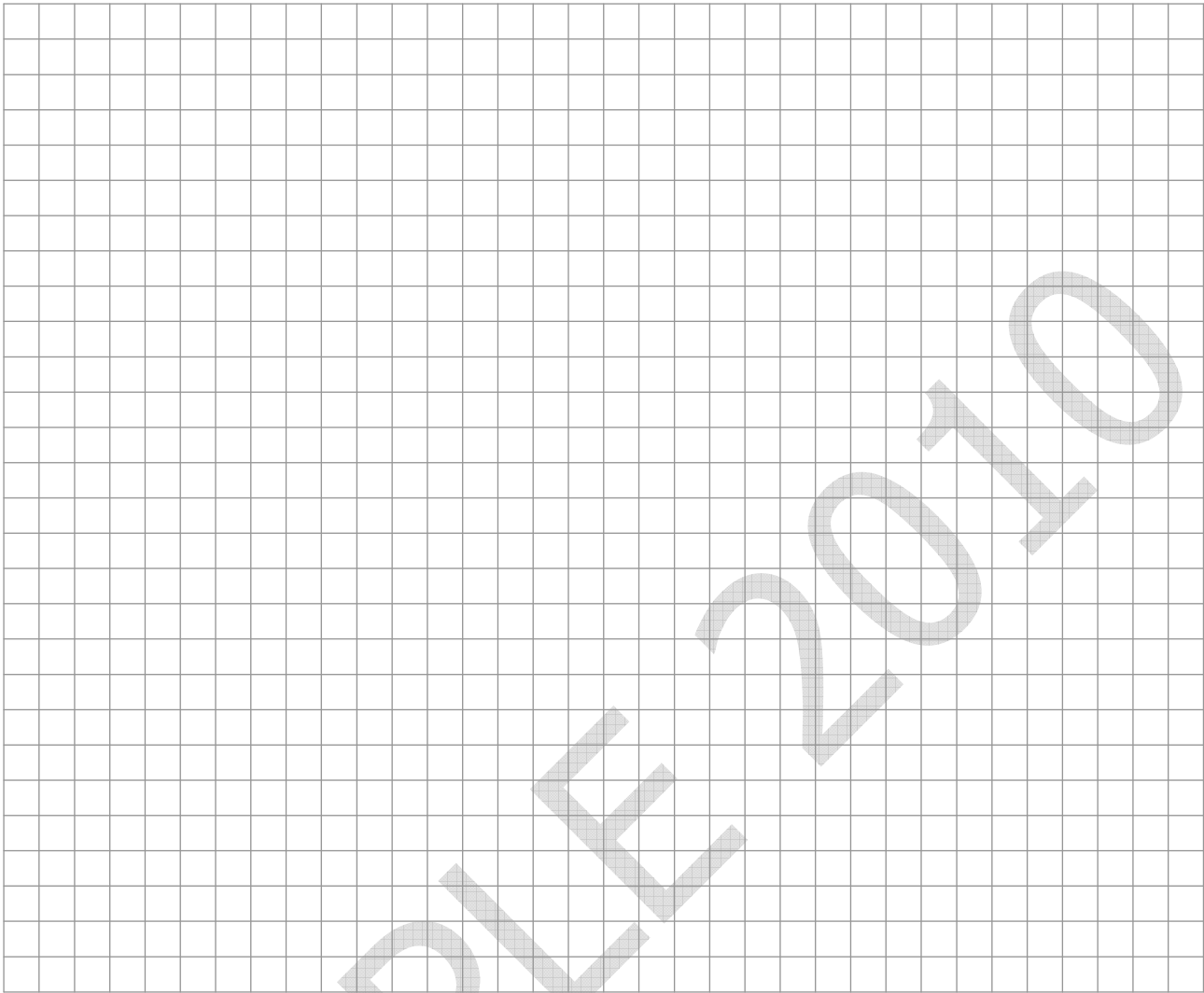
You may use this page for extra work



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Note to readers of this document:

This sample paper is intended to help teachers and candidates prepare for the June 2010 examination in the *Project Maths* initial schools. The content and structure do not necessarily reflect the 2011 or subsequent examinations in the initial schools or in all other schools.

Leaving Certificate – Ordinary Level

Mathematics (Project Maths) – Paper 2

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Time: 2 hours 30 minutes