



Coimisiún na Scrúduithe Stáit  
State Examinations Commission

Leaving Certificate Examination  
Sample Paper

# Mathematics

Foundation Level

Time: 2 hours, 30 minutes

300 marks

Examination number
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Centre stamp
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Running total	
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For examiner	
Question	Mark
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
Total	

Grade
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## Instructions

There are **two** sections in this examination paper.

Section A	200 marks	8 questions
Section B	100 marks	3 questions

Answer all eleven questions.

Write your answers in the spaces provided in this booklet. You may lose marks if you do not do so. 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 *Formulae and Tables* booklet. You must return it at the end of the examination. You are not allowed to bring your own copy into the examination.

**You will lose marks if all necessary work is not clearly shown.**

**You may lose marks if the appropriate units of measurement are not included, where relevant.**

**You may lose marks if your answers are not given in simplest form, where relevant.**

Write the make and model of your calculator(s) here:

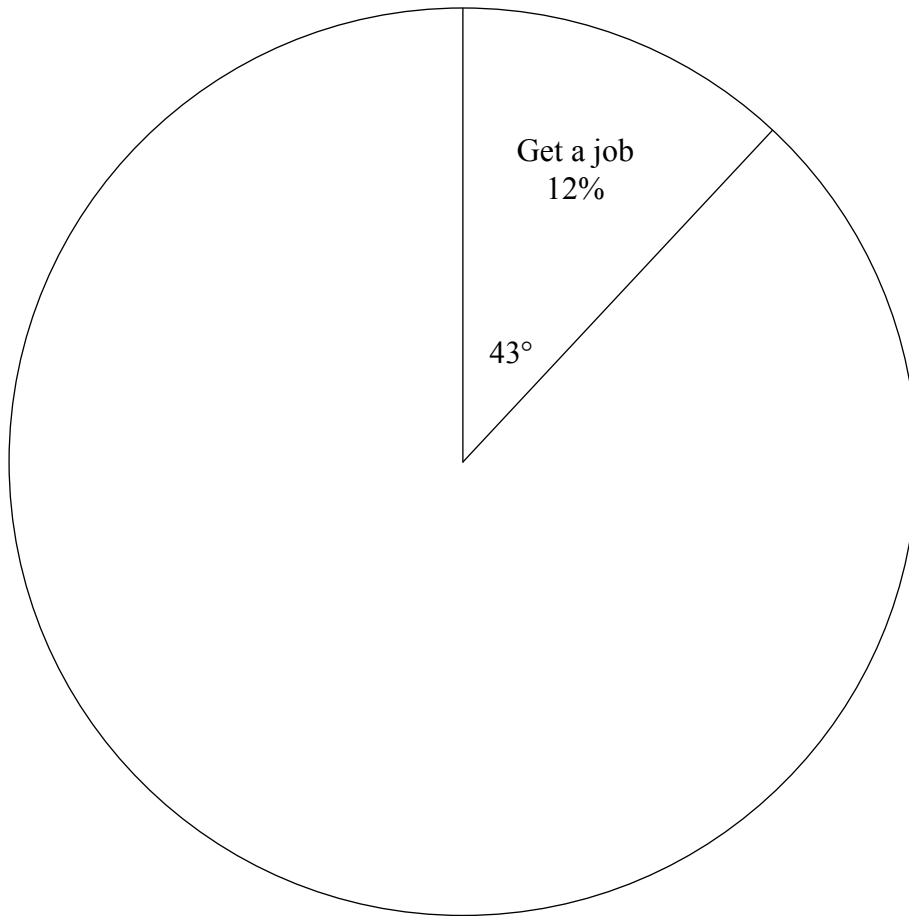








Use your table to complete the pie chart below.



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**Question 7**

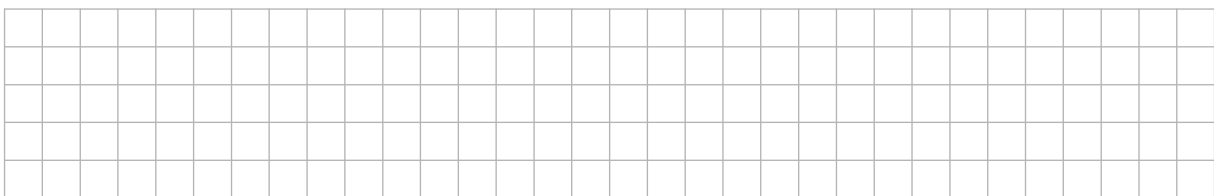
**(25 marks)**

The fare for a taxi journey often depends on the distance travelled. In one such case, for journeys from 1 km to 15 km, the fare, in cent, is given by the following formula:  $F = 307 + 103D$ , where  $F$  is the fare in cent and  $D$  is the distance travelled in km.

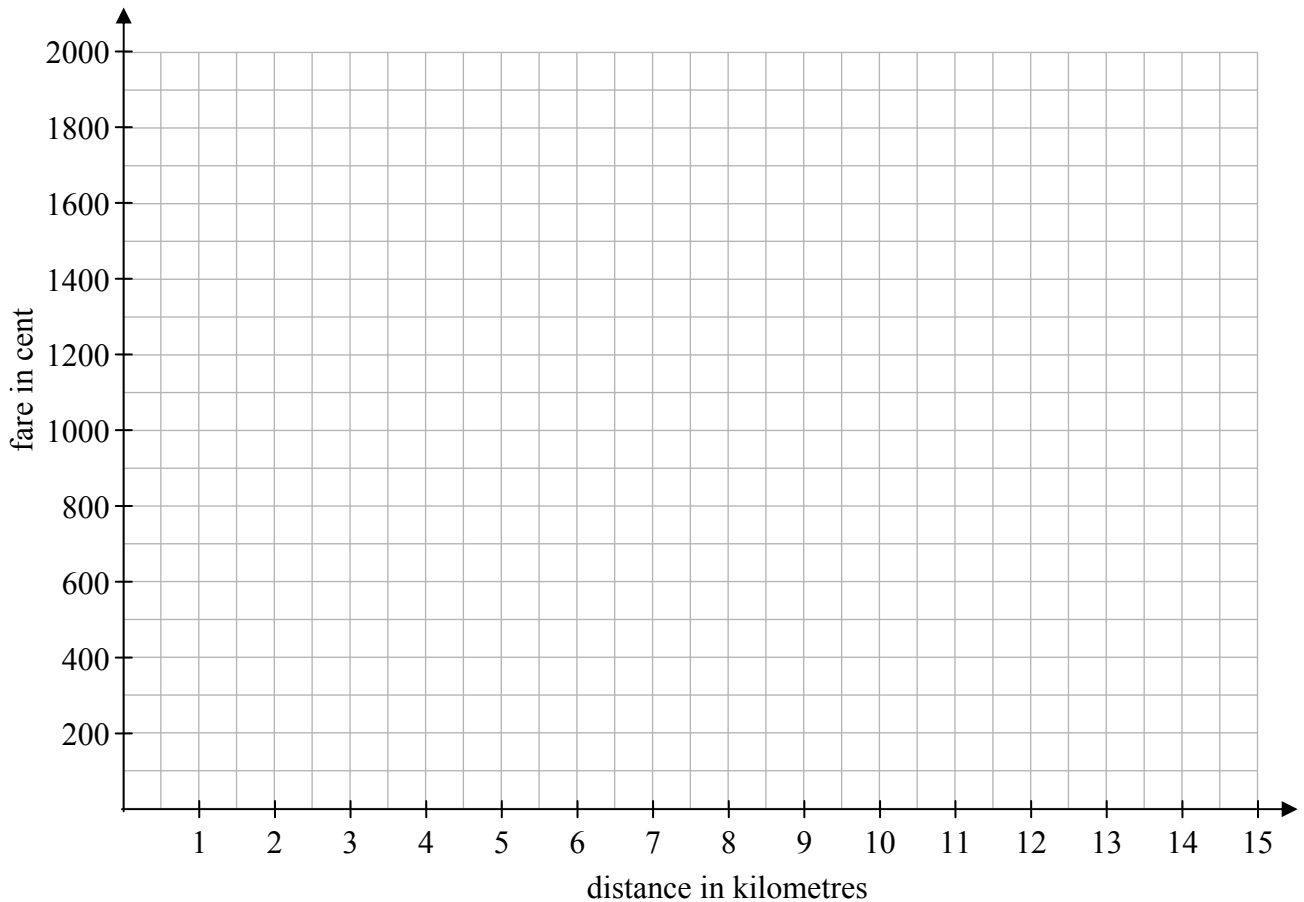


**(a)** Complete the table below showing the fare, **in cent**, for some journeys from 1 km to 15 km.

Distance (km)	1	2	3	4	5	10	15
Fare (cent)	410	513					



**(b)** Draw a graph to represent the taxi fare from 1 km up to 15 km.





**Question 8**

**(25 marks)**

The symbol shown below in Diagram 1 was designed by Gerald Holtom in 1958. It later became recognised as an international peace symbol.

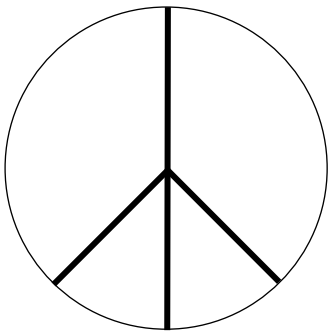


Diagram 1

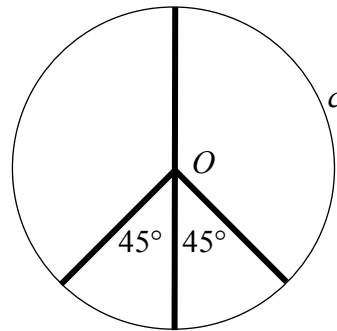
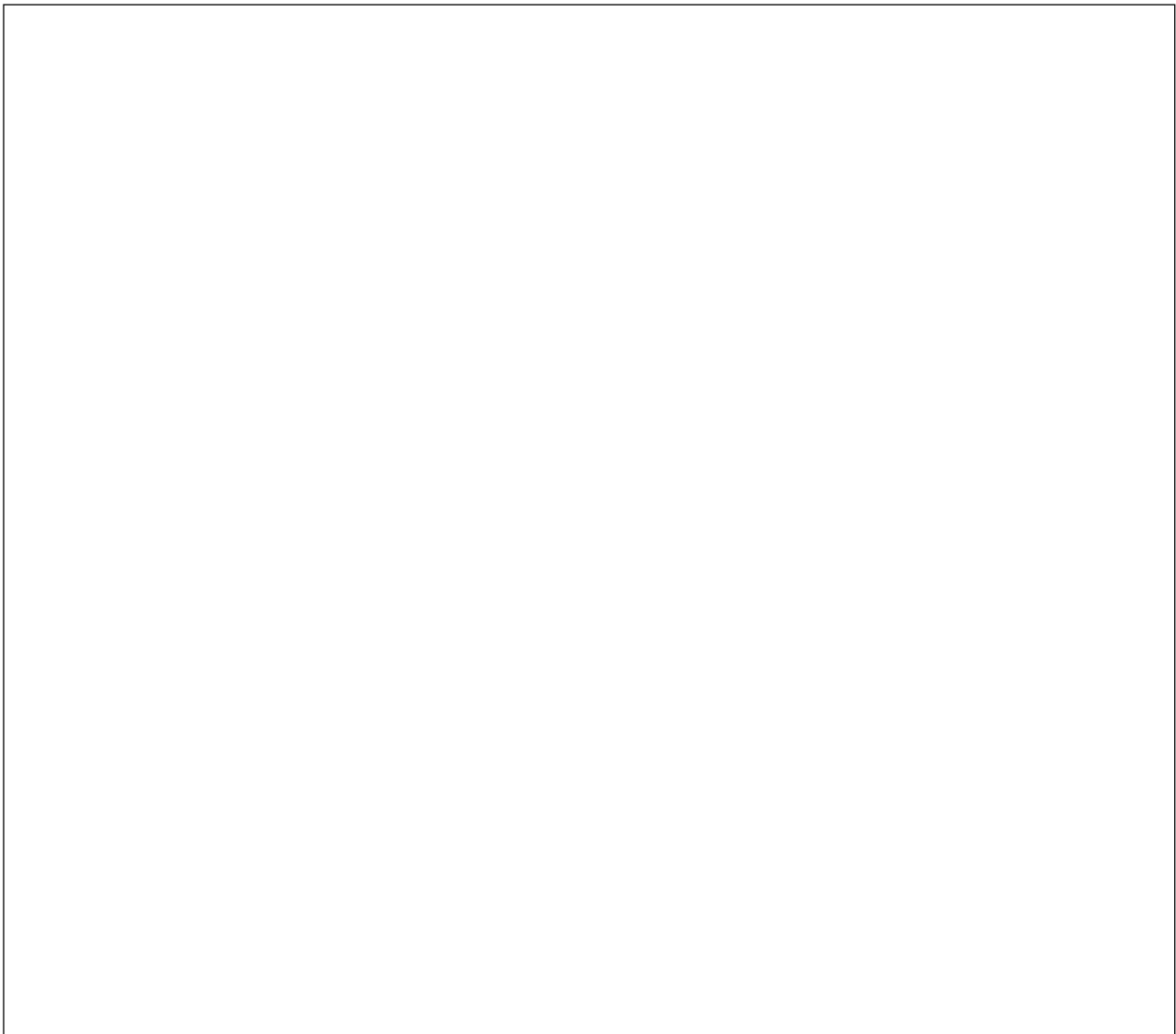


Diagram 2

The circle  $c$  has centre  $O$ . Use this fact and the additional information in Diagram 2 to draw the symbol in the space below, using a radius of 6 cm.





**Question 10****(30 marks)**

Liam and Mairéad are two mountaineers descending from two mountains, A and B, in different parts of the country. They set off at the same time and, as they descend, the air temperature rises at a steady rate. They each record the temperature, in degrees Celsius, every hour. Some of their recordings are shown in the table below.

- (a) Complete the table to show the temperatures they recorded over an 8-hour period.

	Mountain A	Mountain B
Time	Liam Temperature ( $^{\circ}\text{C}$ )	Mairéad Temperature ( $^{\circ}\text{C}$ )
0	7	0
1	9	3
2		6
3		
4		
5		
6		
7		
8		

- (b) Write down the rate at which the temperature recorded by Liam rises every hour.

Answer: \_\_\_\_\_  $^{\circ}\text{C}/\text{h}$ .

- (c) How many hours pass until both Liam and Mairéad record the same temperature at the same time?

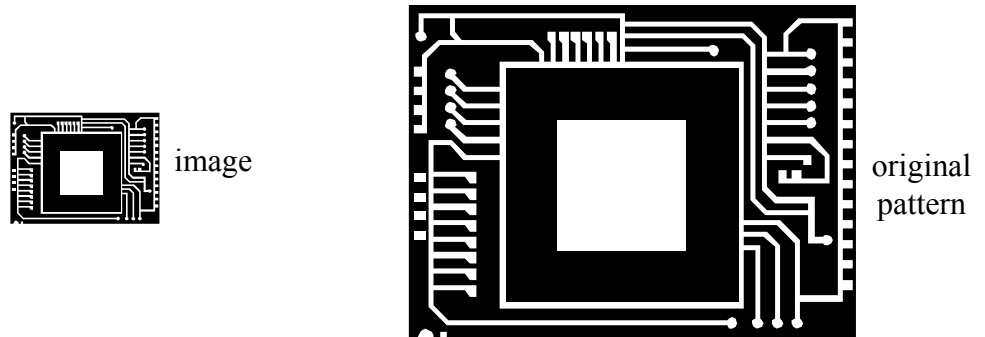
Answer: \_\_\_\_\_ hours.



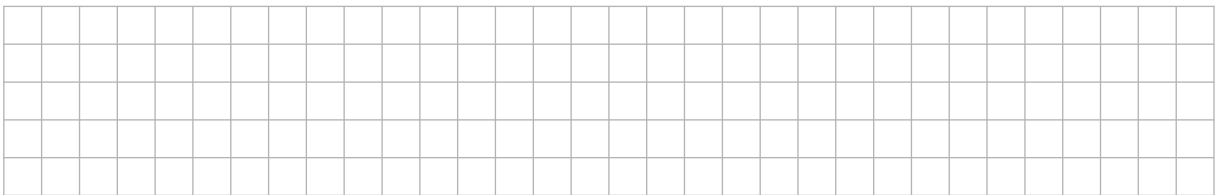
**Question 11**

**(50 marks)**

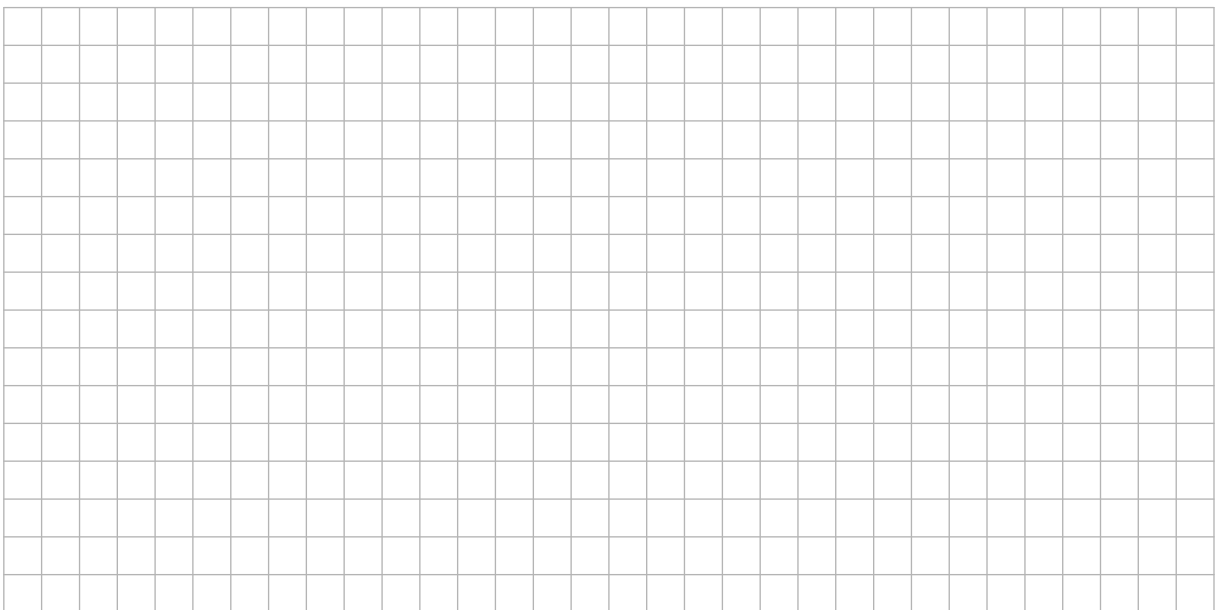
- (a) A pattern for a circuit board was reduced in size using an enlargement by the ray method. Because the pattern was made smaller, the **scale factor** is less than 1. The diagram below shows the pattern before and after the reduction.



- (i) On the diagram, find the centre of enlargement.
- (ii) By measurement and calculation, find the scale factor of the enlargement.

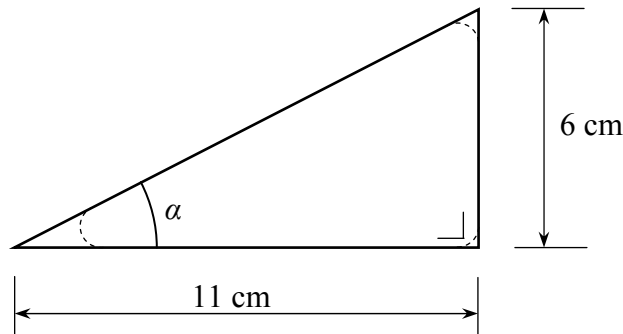
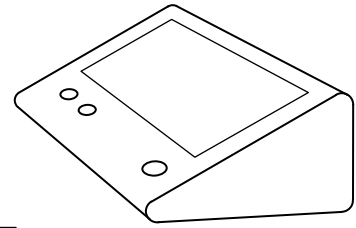


- (iii) The area of the original pattern is  $27 \text{ cm}^2$ . Find the area of the image.

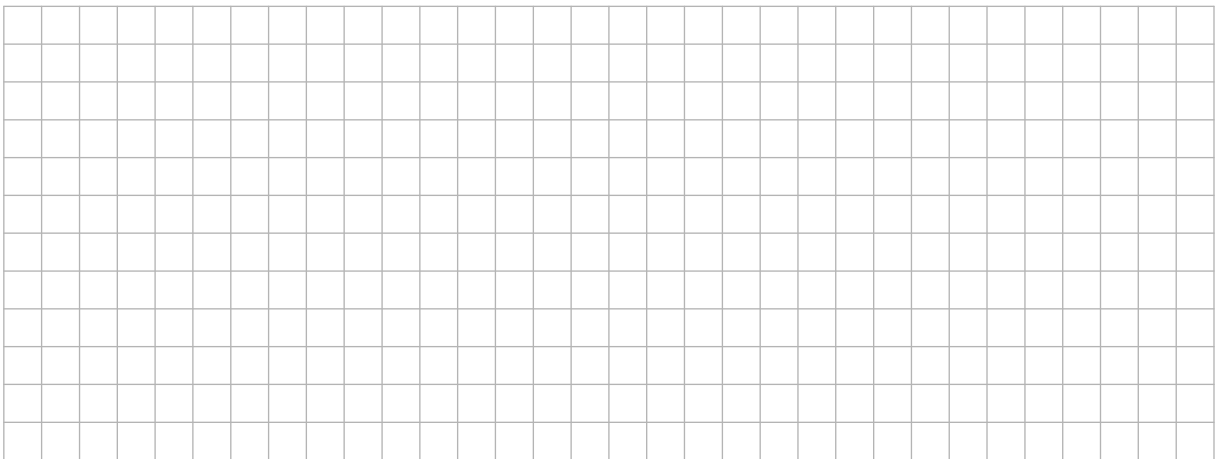




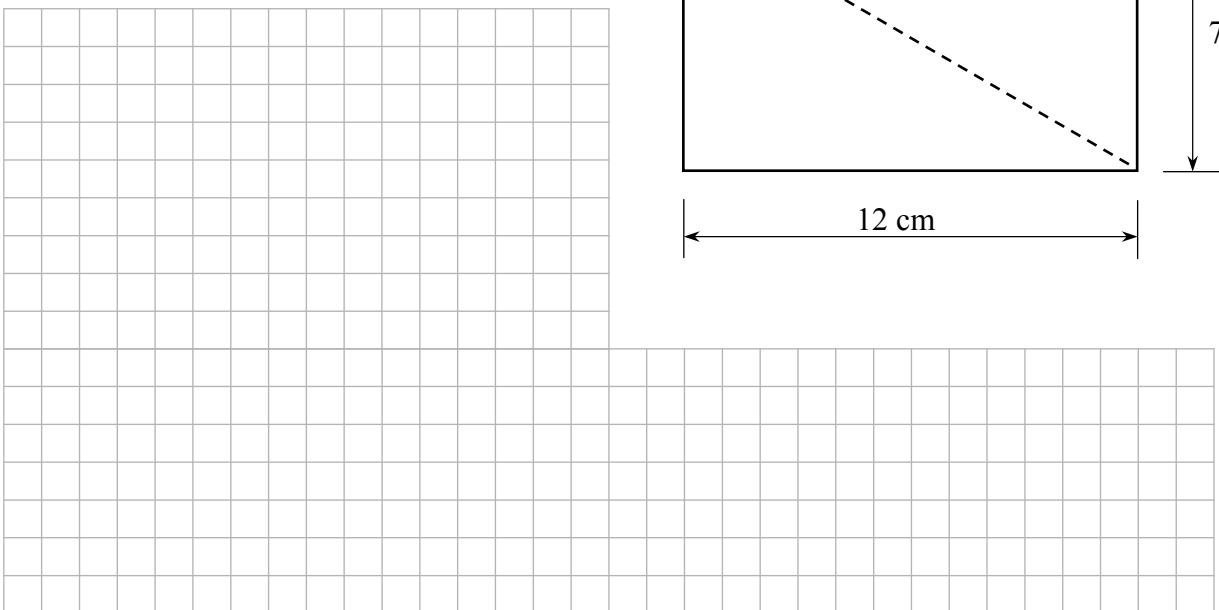
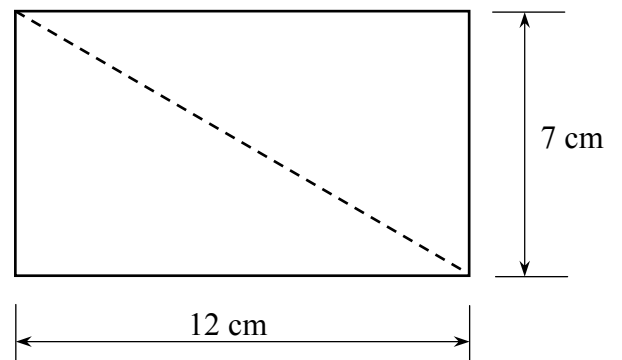
- (b) The circuit board is for an electronic game.  
 The side panel of the game is approximately triangular.  
 The diagram below, not drawn to scale, is for the side panel.  
 The measurements are as shown.



Find  $|\angle \alpha|$ , correct to the nearest degree.

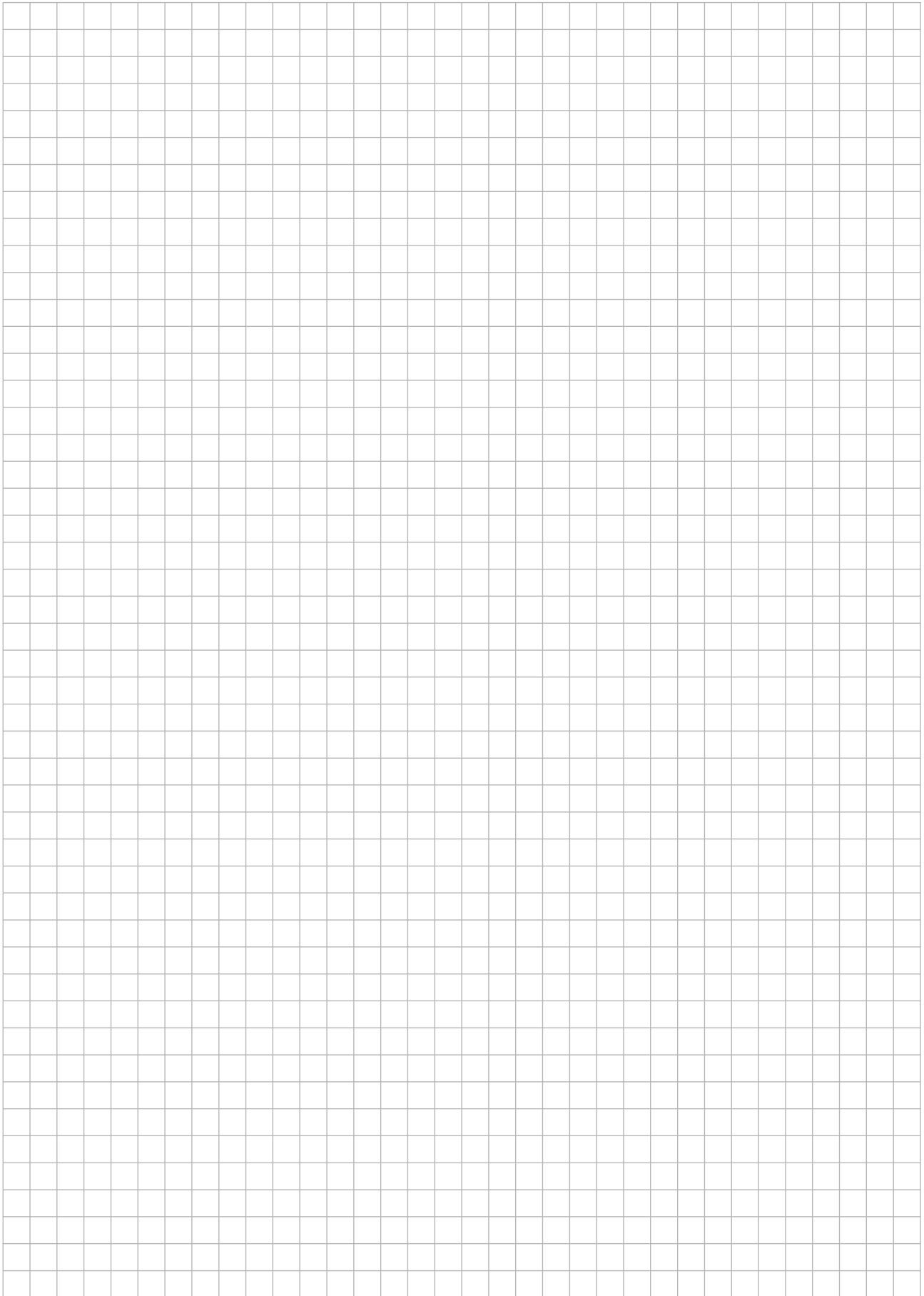


- (c) The screen measures 7 cm by 12 cm.  
 Find the length of the diagonal of the screen,  
 correct to two places of decimals.

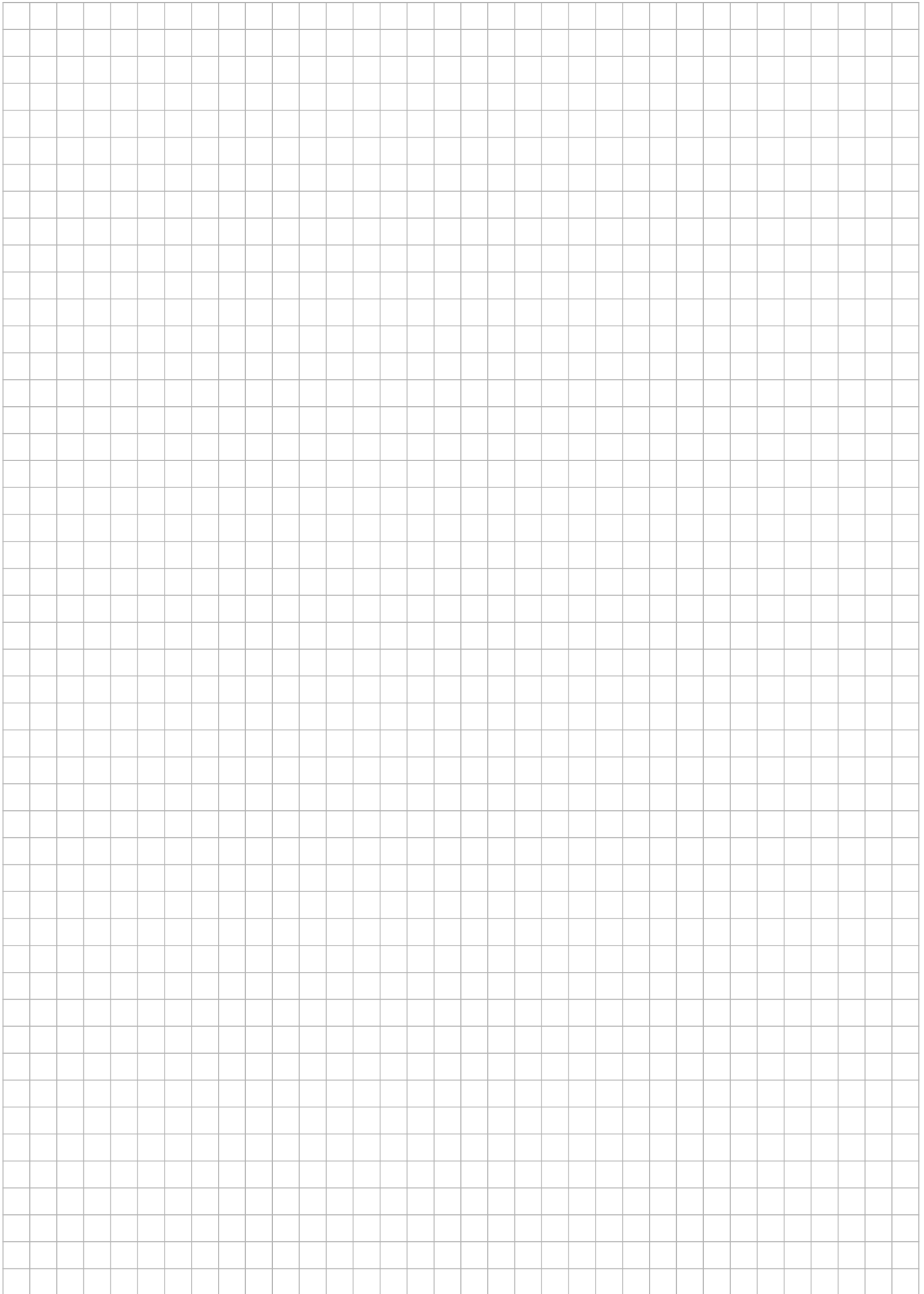


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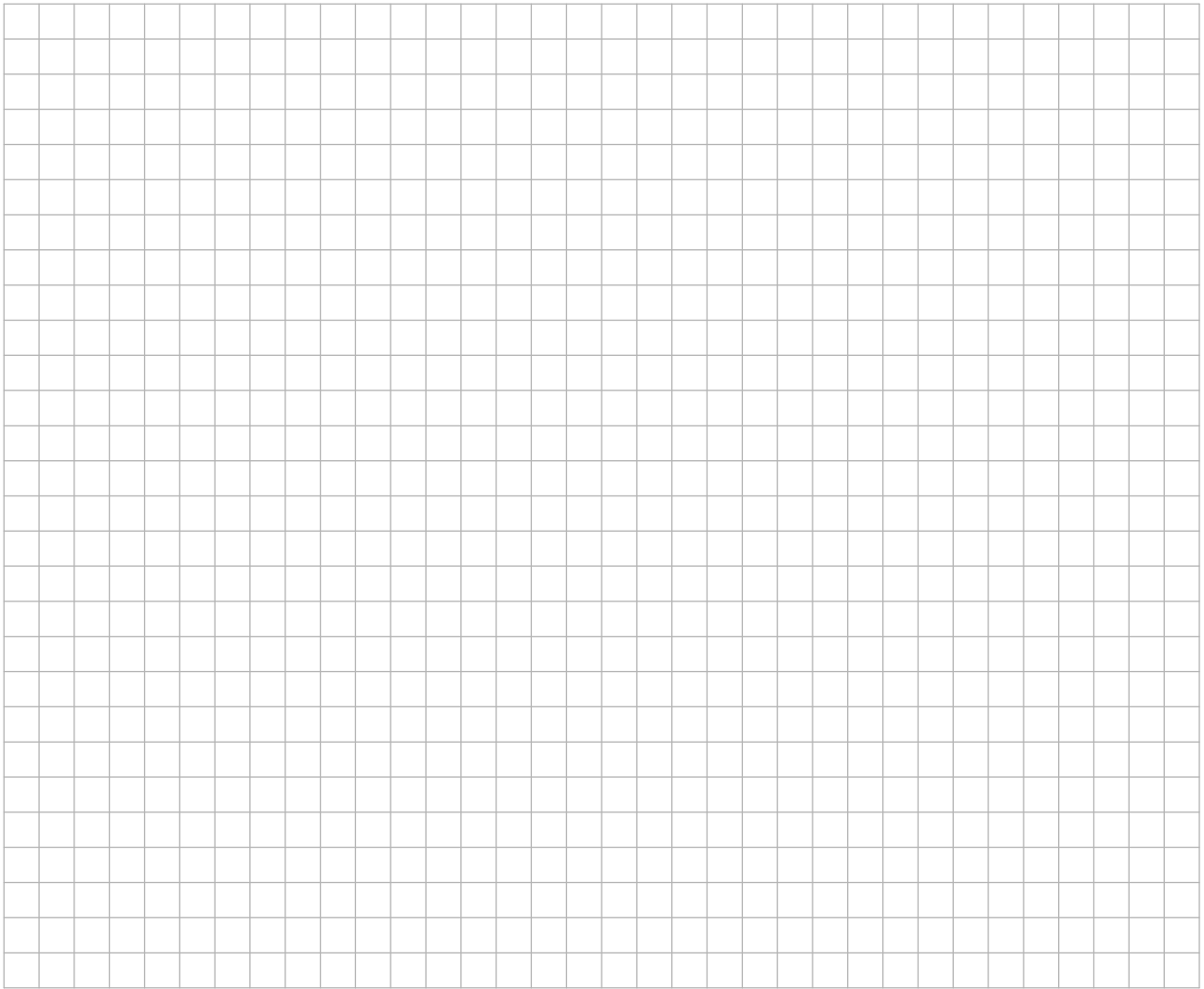
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*Note to readers of this document:*

This sample paper is intended to help teachers and candidates prepare for the Foundation Level examination in *Mathematics* in June 2015 and in subsequent years.

Section A of the examination paper will consist of eight questions, each carrying 25 marks.

Section B will consist of two, three, or four questions. These questions will not necessarily carry equal marks. The number of marks for each will be stated on the examination paper. The total number of marks for Section B will be 100.

Leaving Certificate – Foundation Level

## Mathematics

Sample Paper

Time: 2 hours 30 minutes