

<b>Candidate Forename</b>		<b>Candidate Surname</b>	
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<b>Centre Number</b>						<b>Candidate Number</b>				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GENERAL CERTIFICATE OF SECONDARY EDUCATION**

**B277A**

**MATHEMATICS C  
(GRADUATED ASSESSMENT)**

**MODULE M7 – SECTION A**

**THURSDAY 21 JANUARY 2010: Afternoon**

**DURATION: 30 minutes**

**SUITABLE FOR VISUALLY IMPAIRED CANDIDATES**

**Candidates answer on the Question Paper**

**OCR SUPPLIED MATERIALS:**

**None**

**OTHER MATERIALS REQUIRED:**

**Geometrical instruments**

**Tracing paper (optional)**

**WARNING**

**No calculator can be used for  
Section A of this paper.**

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

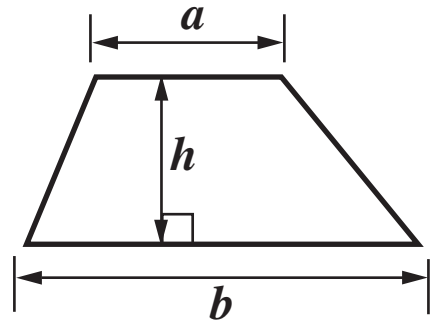
- **Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully and make sure that you know what you have to do before starting your answer.**
- **Show your working. Marks may be given for a correct method even if the answer is incorrect.**
- **Answer ALL the questions.**
- **Write your answer to each question in the space provided, however additional paper may be used if necessary.**

## **INFORMATION FOR CANDIDATES**

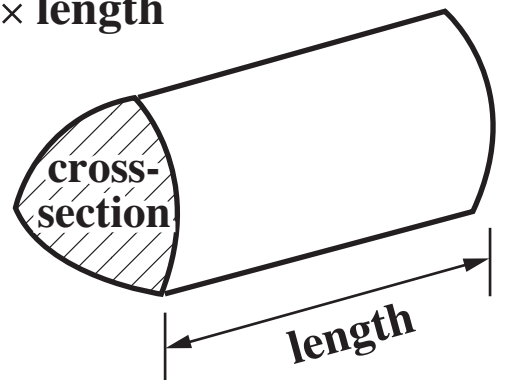
- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **The total number of marks for this Section is 25.**

## Formulae Sheet

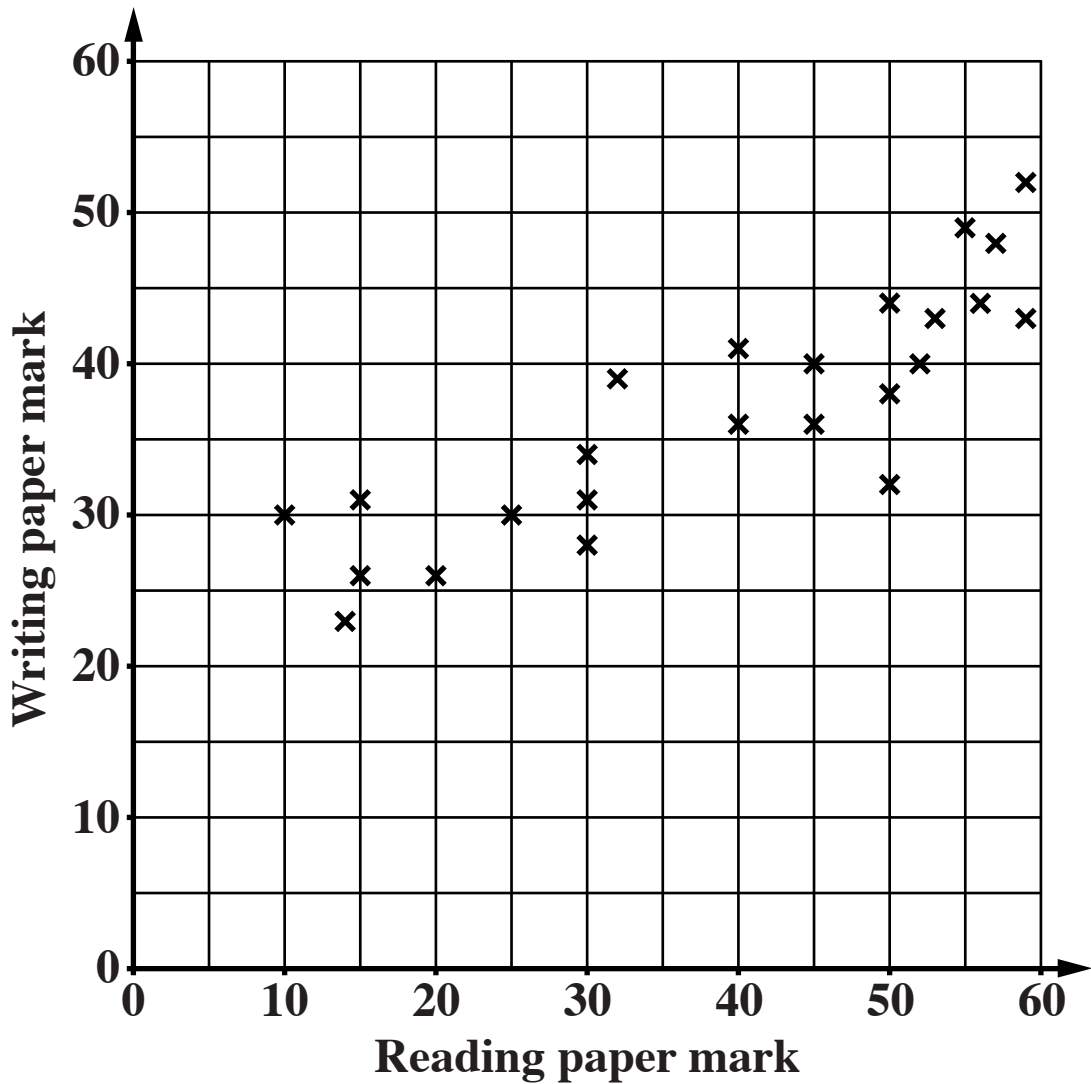
**Area of trapezium =  $\frac{1}{2} (a + b)h$**



**Volume of prism = (area of cross-section)  $\times$  length**



- 1 There are two papers in an English exam.  
There is a reading paper and a writing paper.  
This scatter diagram shows the marks of 24 pupils who took both papers.



- (a) Describe the correlation.  
[1 mark]

(a) \_\_\_\_\_

**(b) Jane scored 42 on the reading paper but was absent for the writing paper.**

**Draw a line of best fit and use it to estimate a mark for Jane on the writing paper.**

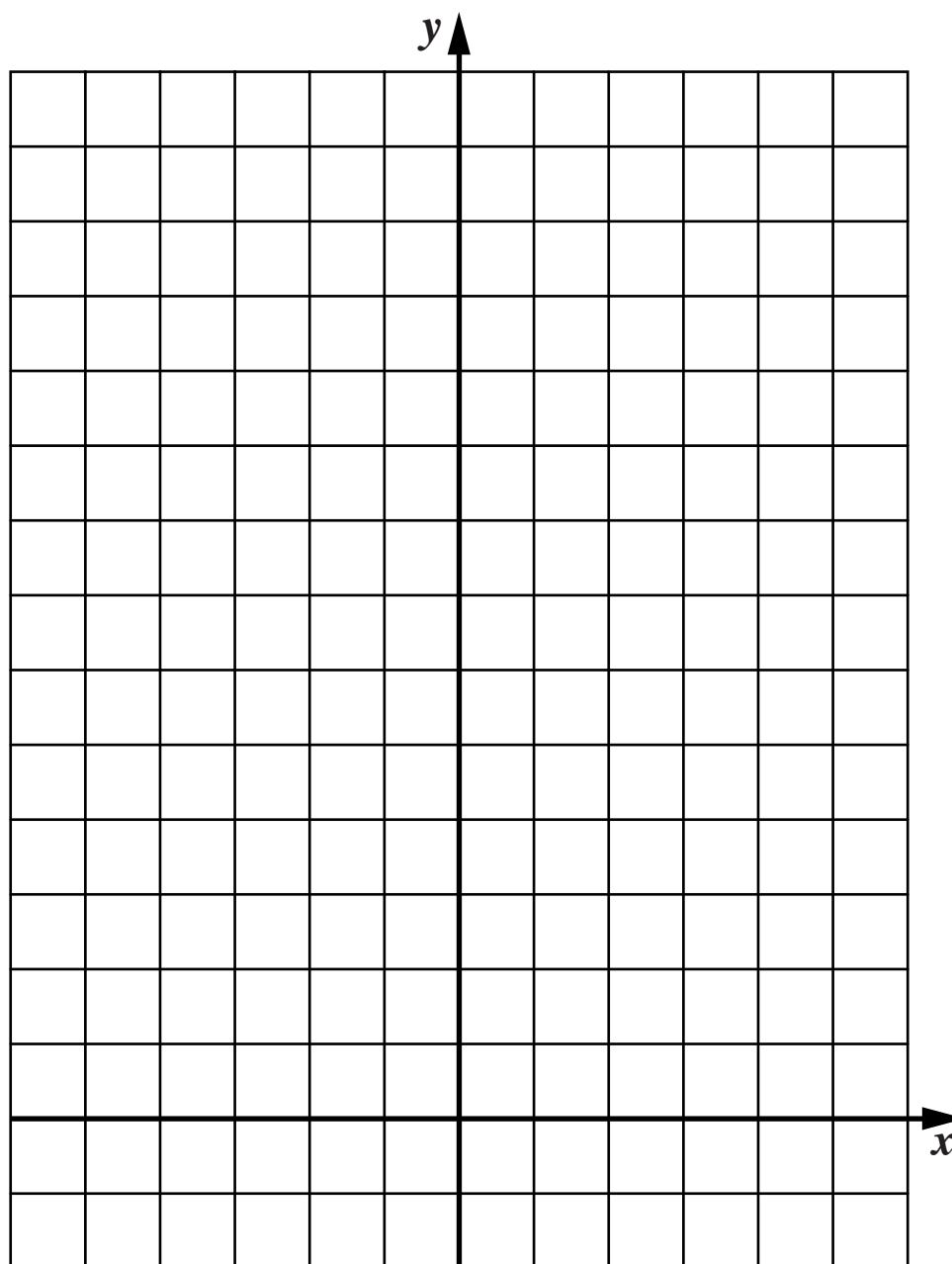
**[2 marks]**

**(b)** \_\_\_\_\_

- 2 (a) Complete the table for  $y = 3x^2$ .  
[1 mark]

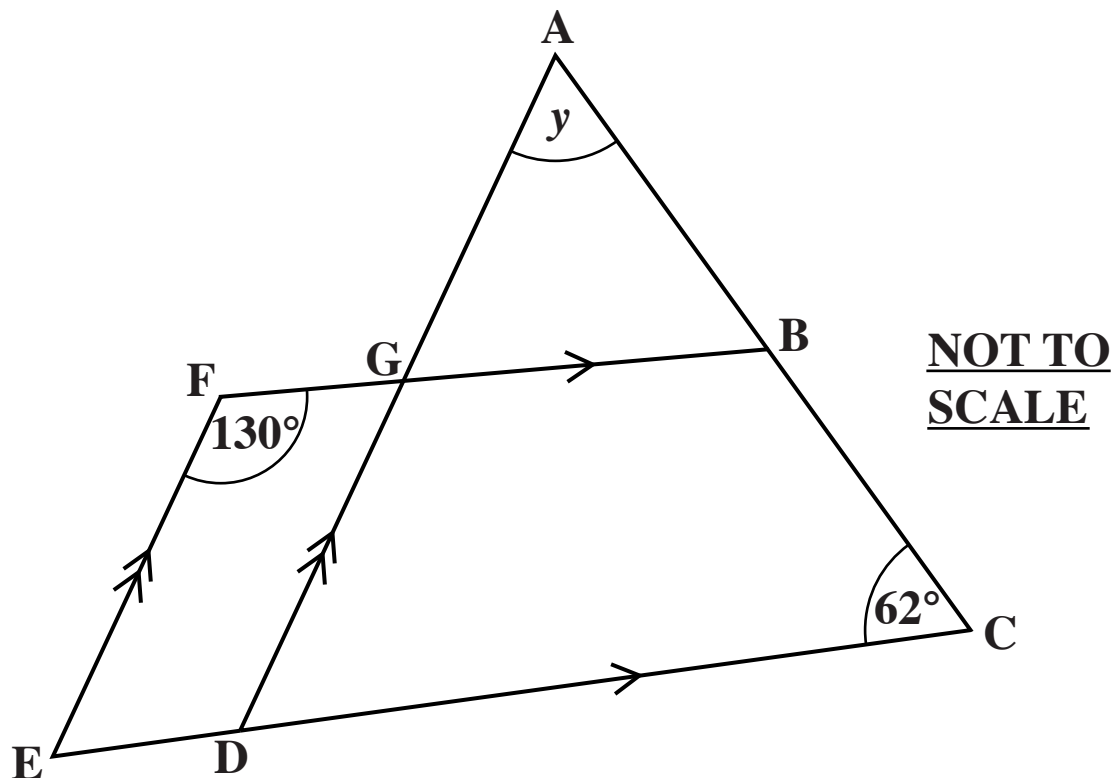
$x$	-2	-1	0	1	2
$y$		3	0	3	

- (b) Draw the graph of  $y = 3x^2$ .  
[3 marks]



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- 3 In this diagram, FB is parallel to EC and EF is parallel to DA.  
Angle EFG =  $130^\circ$  and angle ACD =  $62^\circ$ .



Calculate angle  $y$ .  
Show your working clearly.  
[3 marks]



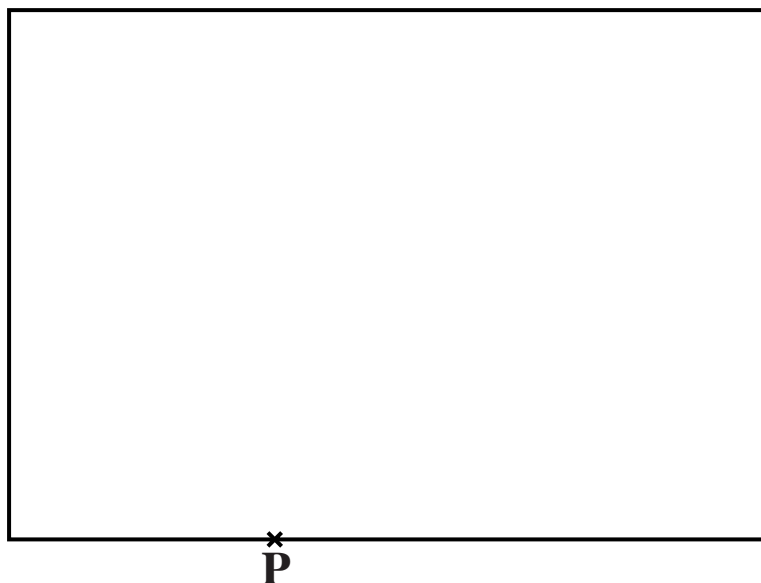
**4 Estimate.**

$$\frac{48.8 \times 6.1}{19.7 - 9.6}$$

**[2 marks]**



**5 This is an accurate plan of a hall floor.**



**SCALE: 1 cm TO 2 m**

**(a) USE RULER AND COMPASSES ONLY TO ANSWER THIS QUESTION.**

**Jules is using an electric carpet cleaner which he plugs in at point P.**

**The carpet cleaner can reach 12 m from P.**

**Shade the part of the floor which CANNOT be reached by the carpet cleaner.**

**[2 marks]**

**(b) A door in the hall is 88 cm wide, correct to the nearest centimetre.**

**What is the minimum width of the door?**

**[1 mark]**

**(b) \_\_\_\_\_ cm**

**6 The  $n$ th term of a sequence is  $n^2 + 5$ .**

**(a) Write down the first three terms of this sequence.  
[2 marks]**

**(a)** \_\_\_\_\_

**(b) Is the number 174 in this sequence?  
Explain your answer clearly.  
[2 marks]**

\_\_\_\_\_ because \_\_\_\_\_  
\_\_\_\_\_

**7 A box contains milk and plain chocolates in the ratio 3 : 2.  
There are 20 chocolates in the box.**

**How many milk chocolates are in the box?  
[2 marks]**

\_\_\_\_\_

**8 Find the lowest common multiple (LCM) of 25 and 30.  
[2 marks]**

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**9 Rearrange  $x = 4y + 1$  to make  $y$  the subject.  
[2 marks]**

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