

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

B276A

**MATHEMATICS C
(GRADUATED ASSESSMENT)**

MODULE M6 – SECTION A

TUESDAY 23 JUNE 2009: Morning

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

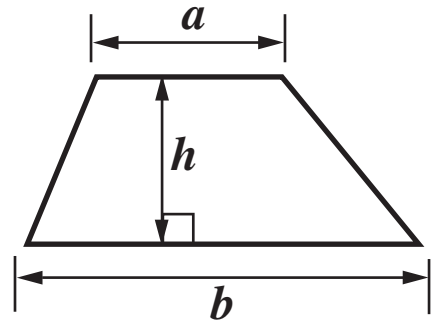
- **Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully and make sure that you know what you have to do before starting your answer.**
- **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

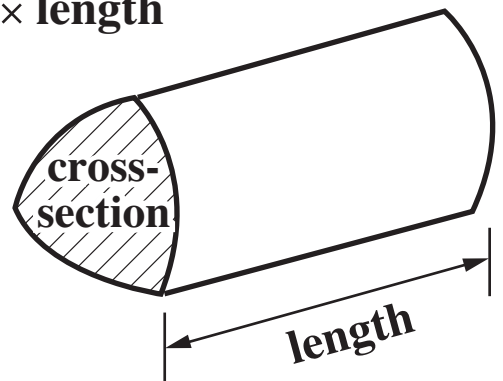
- **The number of marks is given in brackets [] at the end of each question or part question.**
- **The total number of marks for this Section is 25.**

Formulae Sheet

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



$$\text{Volume of prism} = (\text{area of cross-section}) \times \text{length}$$



1 (a) Work out.

(i) $2 \times 5^2 - 4$

[1 mark]

(a)(i) _____

(ii) $(2 \times 5)^2 - 4$

[1 mark]

(ii) _____

(b) Work out, writing your answer in its simplest form.

$\frac{2}{5} \times \frac{3}{8}$

[2 marks]

(b) _____

2 (a) Multiply out.

$$5(x - 3)$$

[1 mark]

(a) _____

(b) Factorise.

$$12y + 9$$

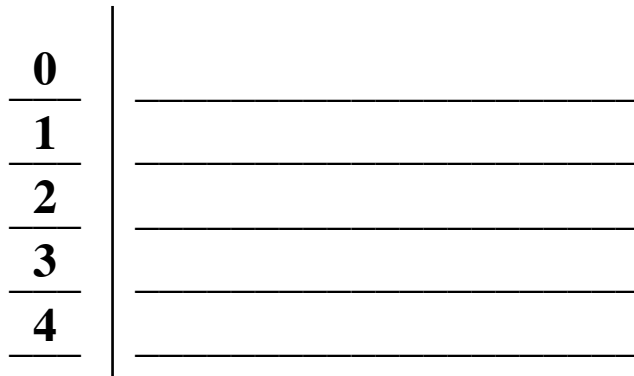
[1 mark]

(b) _____

3 The ages of people in a group are shown below.

39	16	36	21	43	24	28	38
8	20	40	34	27	38	18	26
19	49	15	12	9			

(a) Complete the stem and leaf diagram.



Key : 2 | 7 = 27

[3 marks]

(b) For these ages, find

(i) the median,

(b)(i) _____

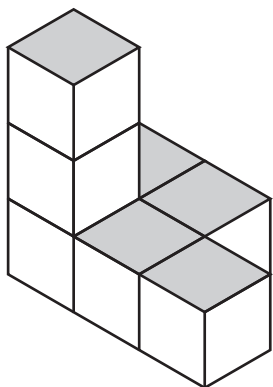
[1 mark]

(ii) the range.

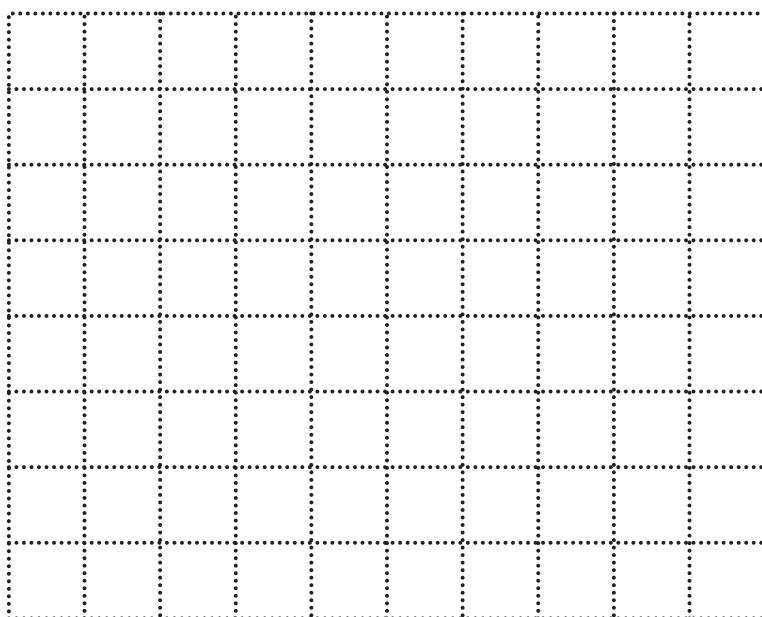
(ii) _____

[1 mark]

4 Here is a shape made from seven centimetre cubes.

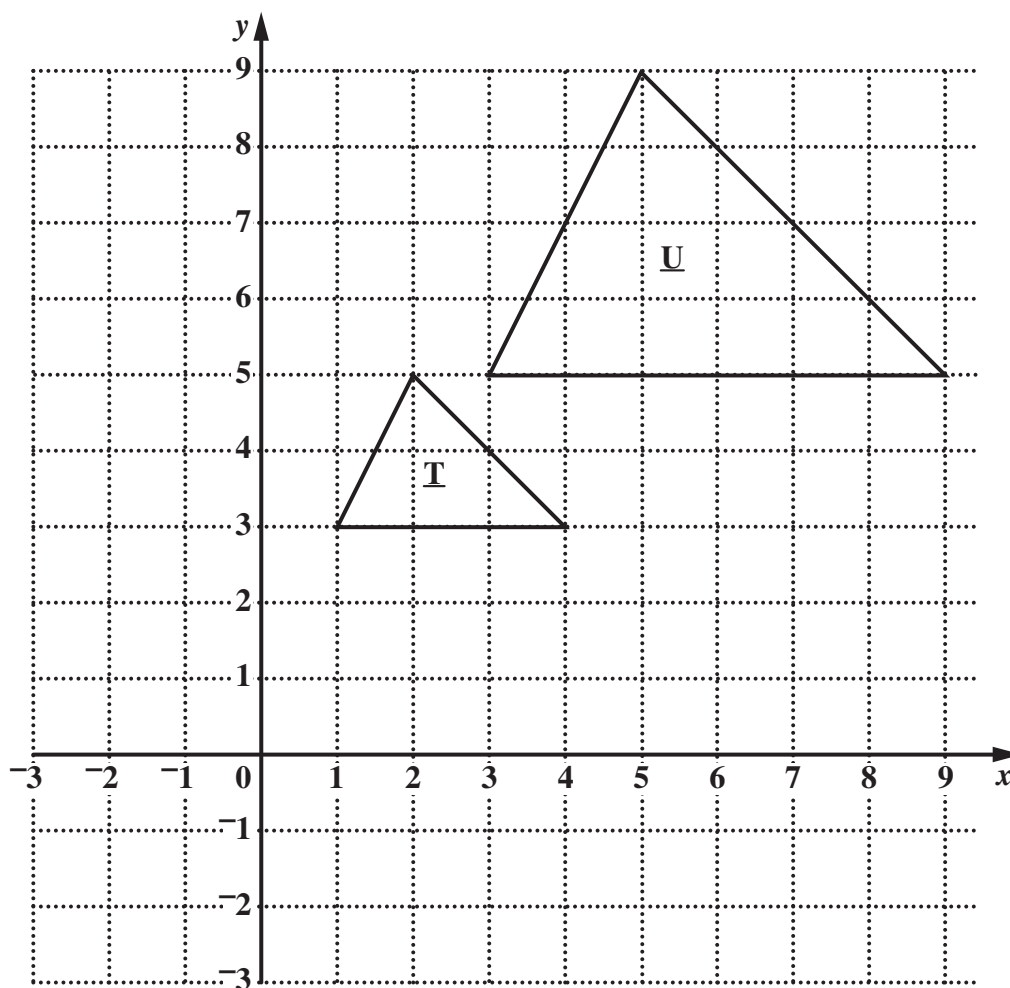


On the grid, draw the plan view of the shape.



[2 marks]

- 5 On the diagram below triangle **T** has been enlarged to triangle **U**.



- (a) Write down the scale factor of this enlargement.
[1 mark]

(a) _____

- (b) Mark the centre of this enlargement on the diagram.
Label it C.
[1 mark]

- 6 (a) Geoff makes a biased four-sided dice.
He works out the probabilities of getting each number.**

Number	1	2	3	4
Probability	0.3	0.4	0.25	0.15

He has made an error.

Explain why the probabilities cannot be correct.

[1 mark]

- (b) Geoff buys pens for his school.
He buys red pens and black pens in the ratio 3 : 1.
He buys 160 pens.**

How many of these pens are red?

[2 marks]

(b) _____

(c) Geoff buys 6 calculators and 8 pens.

The calculators cost £4.32 each.

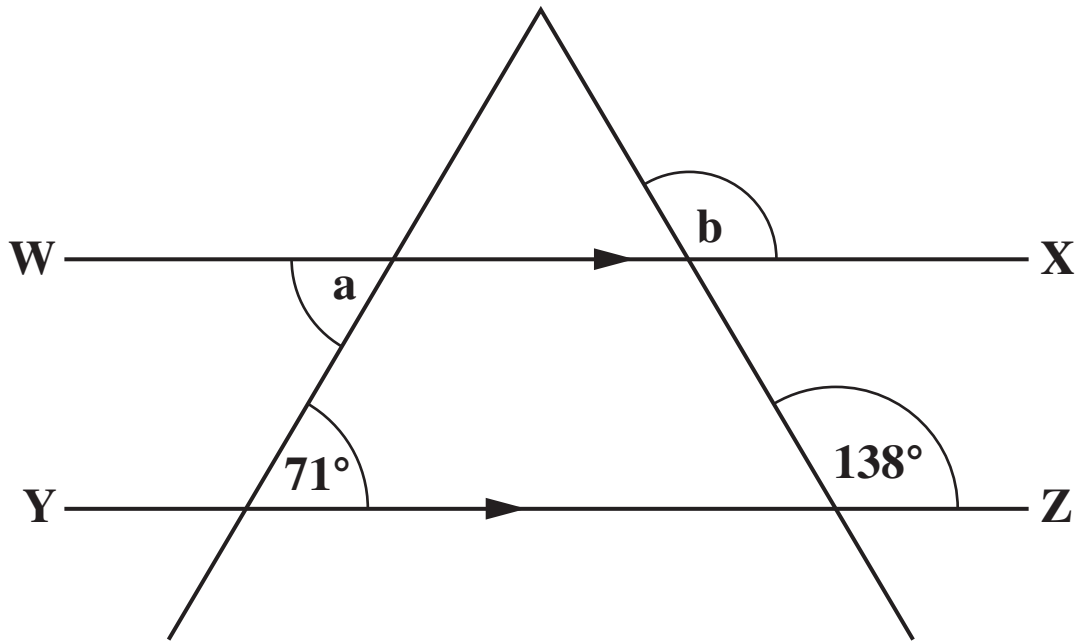
The total cost of the calculators and the pens is £36.16.

Find the cost of one pen.

[5 marks]

(c) £ _____

7 In this diagram, WX is parallel to YZ.



Not to scale

Complete each of these sentences by giving a reason.

Angle $a = 71^\circ$ because _____

[1 mark]

Angle $b = 138^\circ$ because _____

[1 mark]



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