

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)
MODULE M6 – SECTION A

B276A

Candidates answer on the question paper

OCR Supplied Materials:

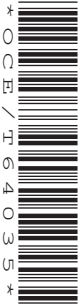
None

Other Materials Required:

- Geometrical instruments
- Tracing paper (optional)

Tuesday 23 June 2009
Morning

Duration: 30 minutes



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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INSTRUCTIONS TO CANDIDATES

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- 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.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided, however additional paper may be used if necessary.

INFORMATION FOR CANDIDATES

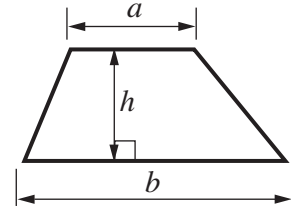
- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

WARNING

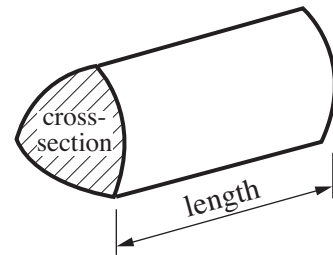
No calculator can be used for Section A of this paper

Formulae Sheet

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



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



PLEASE DO NOT WRITE ON THIS PAGE

1 (a) Work out.

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

(a)(i) [1]

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

(ii) [1]

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

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

(b) [2]

2 (a) Multiply out.

$$5(x - 3)$$

(a) [1]

(b) Factorise.

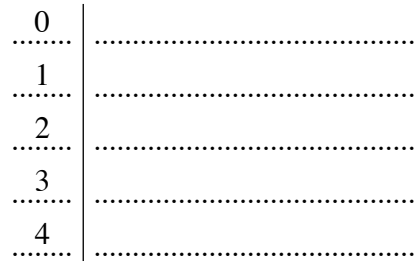
$$12y + 9$$

(b) [1]

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]

(b) For these ages, find

(i) the median,

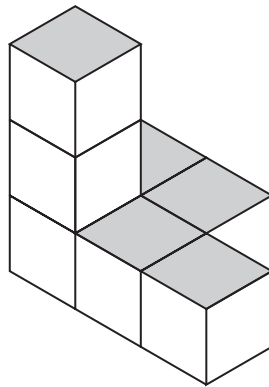
(b)(i) [1]

(ii) the range.

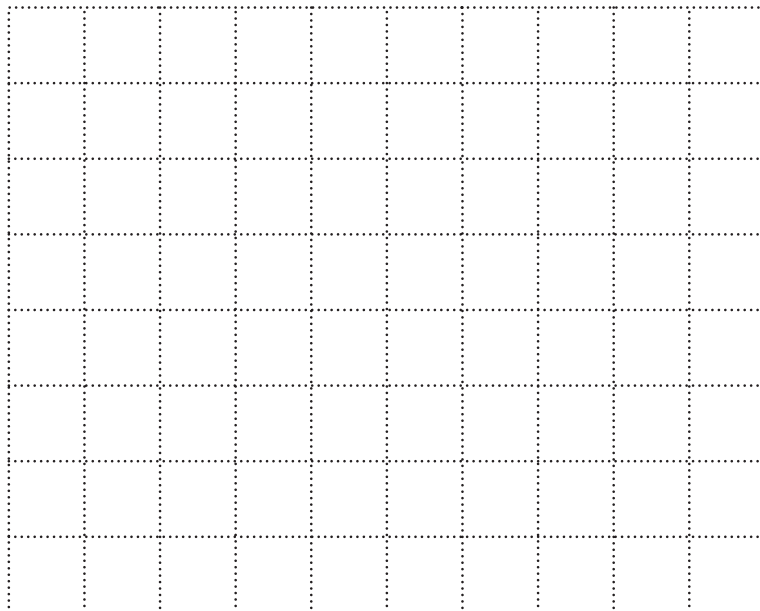
(ii) [1]

5

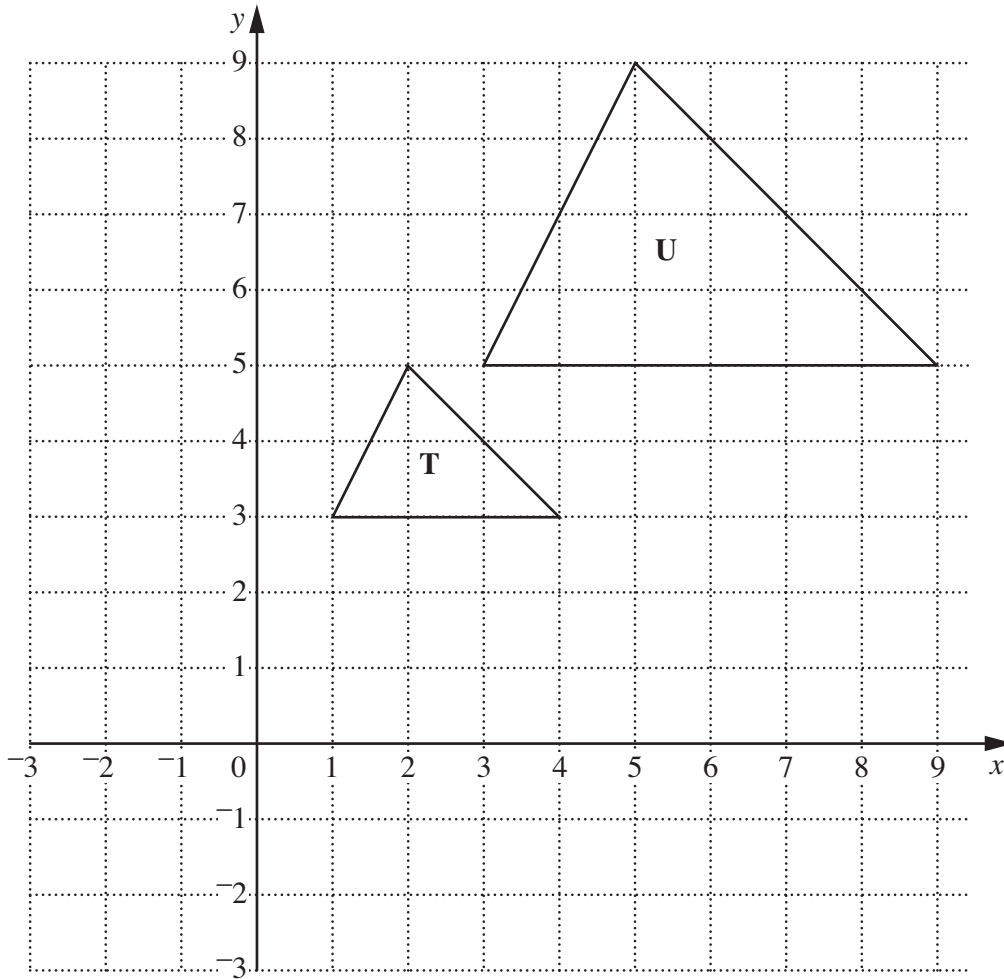
4 Here is a shape made from seven centimetre cubes.



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



[2]



Triangle **T** has been enlarged to triangle **U**.

(a) Write down the scale factor of this enlargement.

(a) [1]

(b) Mark the centre of this enlargement on the diagram.
Label it C.

[1]

- 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]

- (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?

(b) [2]

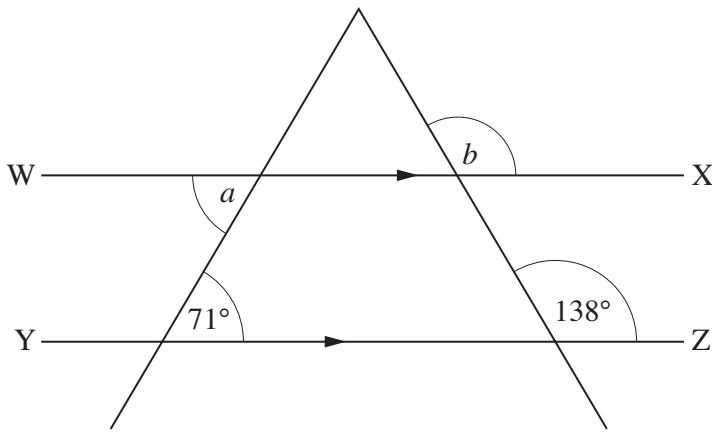
- (c) Geoff buys 6 calculators and 8 pens.
The calculators cost £4.32 each.
The total cost of the calculators and the pens is £36.16.

Find the cost of one pen.

(c) £ [5]

TURN OVER FOR QUESTION 7

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]

Angle $b = 138^\circ$ because

..... [1]

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