RECOGNISING ACHIEVEMENT

Oxford Cambridge and RSA Examinations

General Certificate of Secondary Education

Mathematics C (Graduated Assessment) 1966/2335A

MODULE M5 – SECTION A

Specimen Paper 2003

Candidates answer on the question paper.

Additional materials:

Geometrical Instruments
Tracing Paper (optional).

TIME 30 minutes.

Candidate Name	Centre Number	Candidate Number

INSTRUCTIONS TO CANDIDATES

- Write your name, Centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers, in blue or black ink, in the spaces provided on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- There is a space after most questions. Use it to do your working. In many questions marks will be given for a correct method even if the answer is incorrect.

INFORMATION FOR CANDIDATES

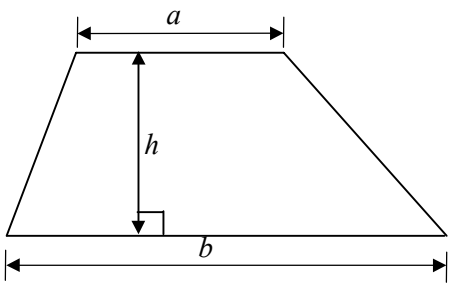
- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this Section is 25.

For Examiner's Use	
Section A	
Section B	
Total	

WARNING
Your are not allowed to use a calculator in Section A of this paper

FORMULA SHEET: FOUNDATION TIER

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



1 Write down the values of

(a) 8^2,

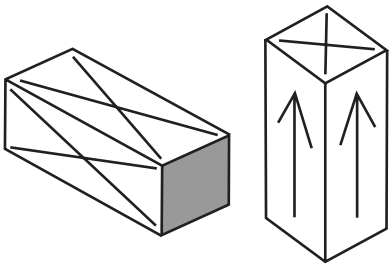
(a) _____ [1]

(b) 10^3.

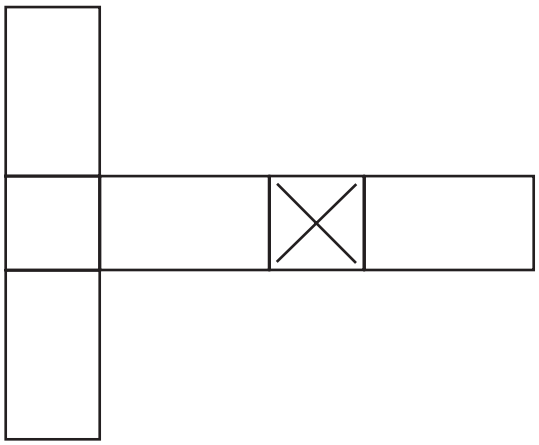
(b) _____ [1]

2

2 These two drawings show two different views of a cuboid.
It has a pattern on each face.



Complete the patterns on this net of the cuboid.



[3]

3

3 Which of the following fractions are equal to $\frac{2}{3}$?

Write **Yes** or **No** under each fraction.

$\frac{6}{10}$ $\frac{4}{6}$ $\frac{10}{15}$ $\frac{4}{9}$ $\frac{3}{2}$

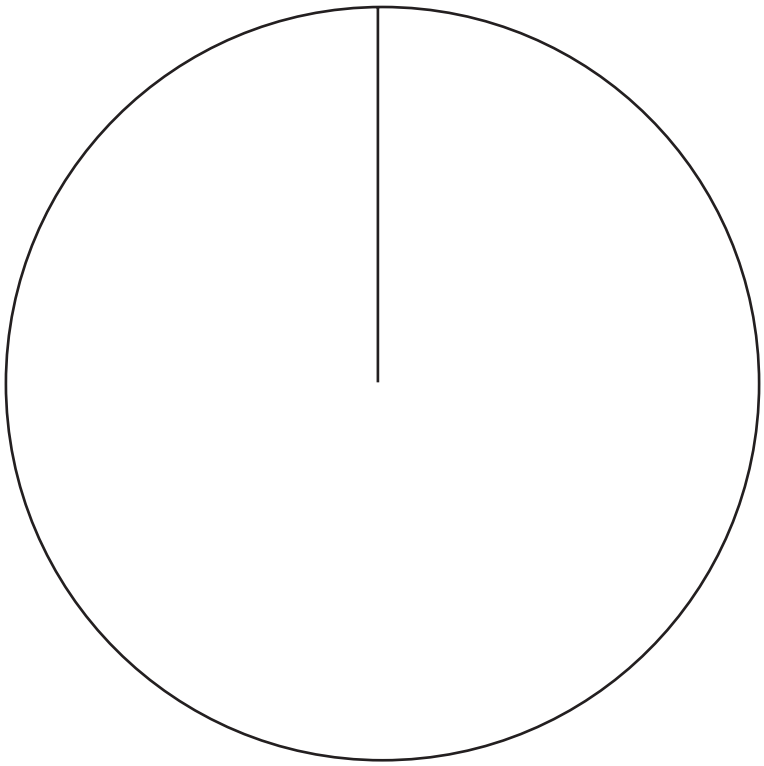
_____ _____ _____ _____ _____ [2]

2

4 This table shows the percentage of plain chocolate which is water, protein, fat or carbohydrate.

Water	Protein	Fat	Carbohydrate
1%	5%	29%	65%

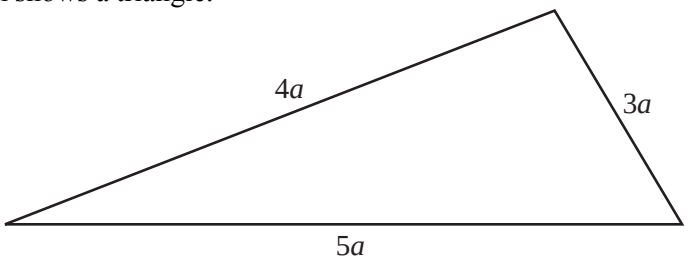
Draw and label a pie chart to show this information.



[2]

2

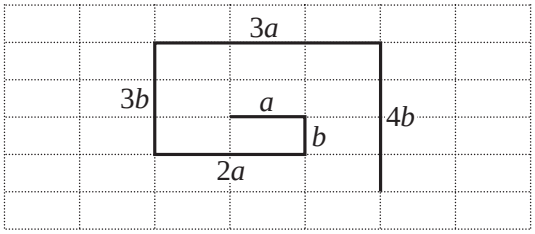
5 **(a)** This diagram shows a triangle.



Write down, as simply as possible, an expression for the perimeter of the triangle.

(a) _____ [1]

(b) This spiral is drawn on a rectangular grid.

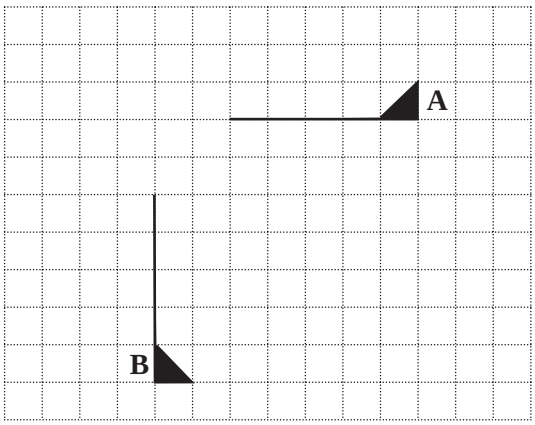


Write down, as simply as possible, an expression for the total length of this spiral.

(b) _____ [2]

2

6



Describe fully the rotation that maps flag **A** onto flag **B**.
Mark the centre of rotation with a '✕'

_____ [2]

2

7 Mrs Patel is buying some history books.
The books cost £6·95 each.
She wants to estimate the cost of 39 books.

(a) Write down a calculation she could do in her head to work out an estimate for the total cost.

(a) _____ = £ _____ [2]

(b) Is the estimate bigger or smaller than the exact cost?
Explain how you decided.

_____

_____ [1]

3

8 Two groups of people, A and B, were used to investigate a medicine for high blood pressure.

The blood pressures of these people before the test are shown below.

Group A blood pressure	99	103	110	111	113	113	115	118	120	124	136
Group B blood pressure	102	107	107	110	111	112	112	123	129		

(a) Use the information above to complete the table below. [2]

	Blood Pressure		
Group	**Mean**	**Range**	**Median**
A	114·7	37	113
B	112·6		

(b) The blood pressures of people in group A are more spread out than those in group B.
How can you tell this from the table?

_____

_____ [1]

3

9 The carat is a measure of gold purity.
It is the number of parts out of 24 which is pure gold.
A 23 carat ring is $\frac{23}{24}$ pure gold.

(a) A gold ring is 15 carats.

What fraction pure gold is this?
Give your answer in its simplest form.

(a) _____ [1]

(b) Sophie has a gold chain that is 75% pure gold.
It weighs 60 grams.

Lucy has a gold bracelet.
It is one-third pure gold.
It weighs 150 grams.

Which contains the most grams of pure gold?
Show your working clearly.

(b) _____ [4]

5

RECOGNISING ACHIEVEMENT

Oxford Cambridge and RSA Examinations

General Certificate of Secondary Education

Mathematics C (Graduated Assessment) 1966/2335B

MODULE M5 – SECTION B

Specimen Paper 2003

Candidates answer on the question paper.

Additional materials:

Geometrical Instruments
Tracing Paper (optional)
Electronic Calculator

TIME 30 minutes.

Candidate Name	Centre Number	Candidate Number

INSTRUCTIONS TO CANDIDATES

- Write your name, Centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers, in blue or black ink, in the spaces provided on the question paper.
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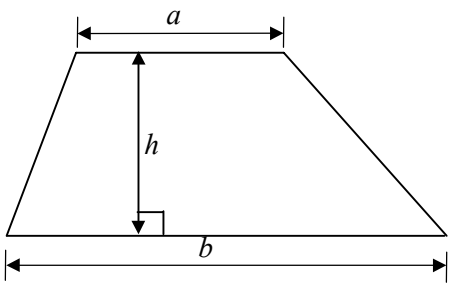
INFORMATION FOR CANDIDATES

- You are expected to use a calculator in Section B of this paper.
- 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.

For Examiner's Use	
Section B	

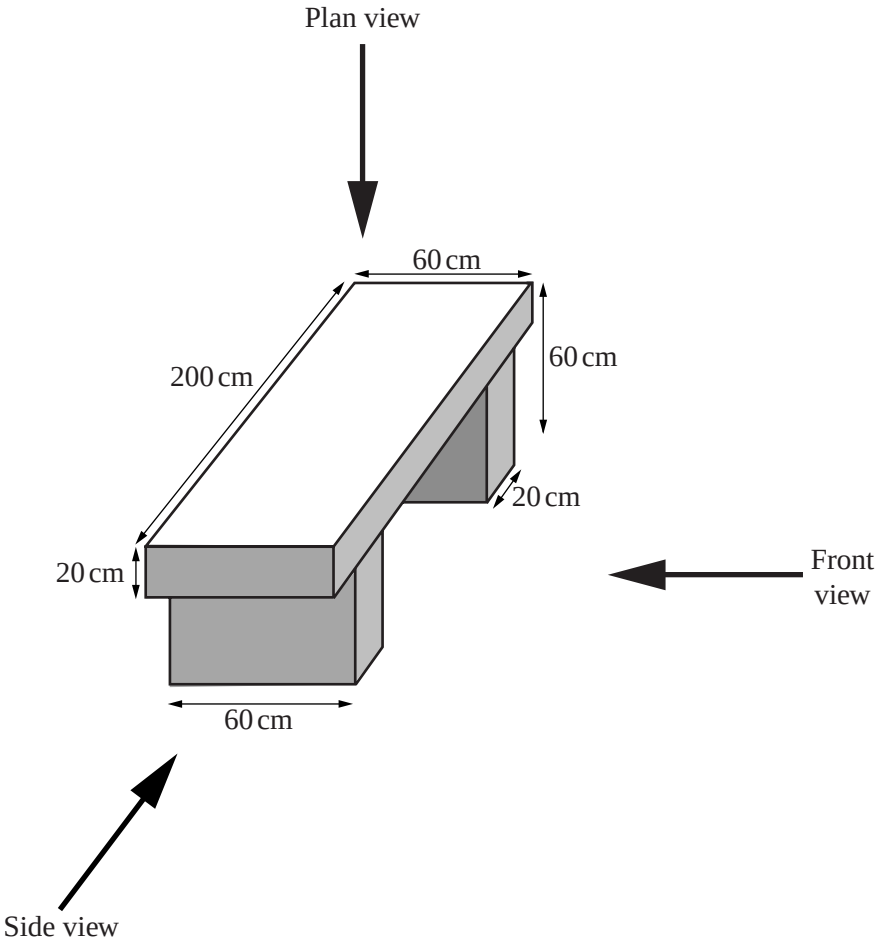
FORMULA SHEET: FOUNDATION TIER

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



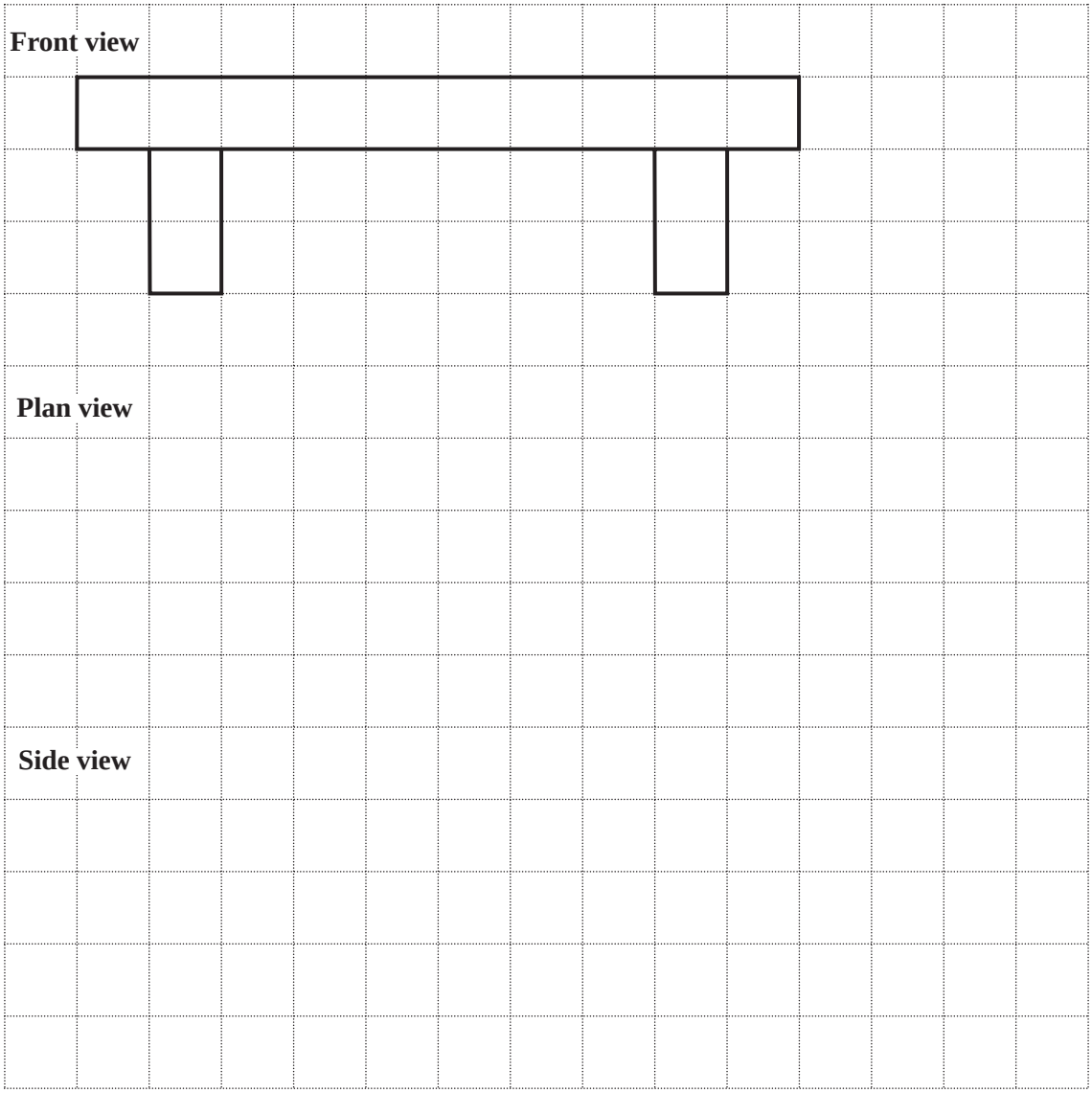
10 This is a sketch of a park seat. It is made from three rectangular concrete slabs.

Each slab is 20 cm thick.



The front view of the seat is drawn on the grid below.
On the grid, draw and label the plan view and the side view.

Scale 1 cm to 20 cm



[3]

3

11 **(a)** These are the first four terms of a sequence.

5 9 13 17

(i) Write down the tenth term.

(a)(i) _____ [1]

(ii) Explain how you worked out your answer.

_____

_____ [1]

(b) The rule for another sequence is

‘ multiply the previous term by 2 and add 1’

The first term of the sequence is 3.

(i) Write down the second term.

(a)(i) _____ [1]

(ii) Work out the sixth term.

(ii) _____ [2]

5

12 Work out the following.

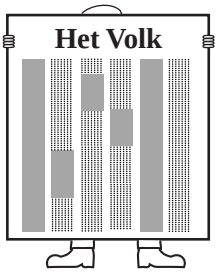
(a) $13 \cdot 2^2$ **(a)** _____ [1]

(b) $\sqrt{361}$ **(b)** _____ [1]

2

13 The largest newspaper sold had a page size 1·4 m by 1 m.
The area of each page was 1·4 square metres.

Work out this area in square centimetres.



_____ cm^2 [2]

2

14 *Thrust SSC* holds the land speed record.
On one of its runs it reached 759·333 mph.

(a) Write 759·333

(i) correct to nearest whole number,

(a)(i) _____ [1]

(ii) correct to 1 significant figure.

(ii) _____ [1]

(b) The official speed is the mean of two runs.

Work out the mean of 759·333 mph and 766·129 mph?

(b) _____ mph [2]

(c) *Thrust SSC* burns about 240 gallons of fuel on each run.

Roughly, how many litres is this?

(c) _____ [2]

6

15 Complete the 'Name of Quadrilateral' column in the table below.

Choose the name of the quadrilateral from:

rectangle **kite** **square** **parallelogram** **rhombus**

Four equal sides?	Four equal angles?	Diagonals always of equal length?	Diagonals cut each other at right angles?	Name of quadrilateral
No	No	No	No	
Yes	Yes	Yes	Yes	
No	Yes	Yes	No	

[3]

3

16 Solve these equations.

(a) $3x + 2 = 14$

(a) $x =$ _____ [2]

(b) $4 = 10 - x$

(b) $x =$ _____ [2]

4

RECOGNISING ACHIEVEMENT

Oxford Cambridge and RSA Examinations

General Certificate of Secondary Education

Mathematics C (Graduated Assessment) 1966/2335

MODULE M5

MARK SCHEME

Specimen Paper 2003

SECTION A

1	**(a)**	64	W1	
	(b)	1000	W1	
			[2]	
2	All correct		W3	W2 for 4 correct faces
			[3]	W1 for 2 correct faces
3	No, Yes, Yes, No, No		W2	W1 for 3 correct
			[2]	
4	3 sectors correct and labelled		W2	W1 2 sectors correct
			[2]	
5	**(a)**	$12a$	W1	
	(b)	$6a + 8b$	W2	W1 for $6a$ or $8b$
			[3]	
6		Correct centre	W1	
		90° clockwise	W1	Accept 270° anticlockwise
			[2]	
7	**(a)**	7 x 40 = 280	W2	M1 for 7 x 40
	(b)	Bigger. Both numbers rounded up	W1	
			[3]	
8	**(a)**	Range = 27 Median = 111	W1	
	(b)	The range is higher in (A)	W1	
9	**(a)**	$\frac{5}{8}$	W1	
	(b)	Chain 45(g)	M2	
		Bracelet 50(g)	M1	
		Lucy's bracelet	A1	
			[5]	

Total for Section A: 25

SECTION B

10	Plan 3cm by 10cm	W1	
	Side view 3cm by 3cm	W1	
	Correct line on side view	W1	
		[3]	
11	**(a)(i)** 41	W1	
	(ii) Added another 6 lots of 4	W1	
	(b)(i) 7	W1	
	(ii) 127	W2	M1 for complete method
		[5]	
12	**(a)** 174·24	W1	
	19	W1	
		[2]	
13	14000	W2	
		[2]	
14	**(a)(i)** 759	W1	
	(ii) 800	W1	
	(b) 762·731	W2	M1 for $\frac{759.333 + 766.129}{2}$
	1000 to 1100	W2	M1 for 240 x 4……..
		[6]	
15	Parallelogram	W1	
	Square	W1	
	Rectangle	W1	
		[3]	
16	**(a)** 4	W2	M1 for $3x = 14 - 2$
	(b) 6	W2	M1 for $x = 10 - 4$
		[4]	

Total for Section B: 25

Total mark available: 50

MODULE: M5				16	7	5	14	7	3	2	2	5			Grades		
Question	Topic	Syll Ref	Mod Ref	N	Man A	nMan A	SSM	HD	UA1	UA2	UA3	Multi-s	Units	Acc	F	E	D
1	Indices	F2/2b	N5.2	2											1	1	
2	Nets	F3/2j	S5.4				3									3	
3	Fractions	F2/3c	N5.3	2											2		
4	Pie chart	F4/4a	D5.3					2								2	
5	Like terms	F32/5b	A5.2		3											3	
6	Rotation	F3/3a,1f	S5.7				2			1						2	
7	Estimation	F2/3h,1d,1k	N5.1	3							1					3	
8	Range	F4/4b,5d,1h,1f	D5.2					3							3		
9	Fractions/Percentages	F2/1a,3c,3e	N5.4	5					4			4				5	
	Section A Total			**12**	**3**		**5**	**5**	**4**	**1**	**1**	**4**			**6**	**19**	
10	Plans	F3/2k	S5.5				3									3	
11	Sequences	F2/6a,1j	A5.3			5			2		1	2				5	
12	Sq/Sq Roots	F2/2b	N5.2	2												1	1
13	Units	F3/4c	S5.1				2									2	
14	Sig Figs, Means, units	F2/3h,F4/4b,F3/4a	N5.1,D5.2,S5.1	2			2	2							4	2	
15	Quadrilaterals	F3/2f	S5.3				3									3	
16	Equations	F2/5e	A5.1		4											4	
	Section B Total			**4**	**4**	**5**	**10**	**2**	**2**		**1**	**2**			**4**	**20**	**1**
	Total			**16**	**7**	**5**	**15**	**7**	**8**	**2**	**2**	**6**			**10**	**39**	**1**