

Surname					Other Names				
Centre Number					Candidate Number				
Candidate Signature									

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General Certificate of Secondary Education
June 2003



MATHEMATICS (MODULAR) (SPECIFICATION B)
Module 5 Foundation Tier
Paper 2 Calculator

33005/F2

F

Tuesday 10 June 2003 9.00 am to 10.00 am

<p>In addition to this paper you will require:</p> <ul style="list-style-type: none"> • a calculator • mathematical instruments. 	
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For Examiner's Use	
Pages	Mark
3	
4 – 5	
6 – 7	
8 – 9	
10 – 11	
12 – 13	
14 – 15	
16 – 17	
TOTAL	
Examiner's Initials	

Time allowed: 1 hour

Instructions

- Use blue or black ink or ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions in the spaces provided.
- Do all rough work in this booklet.
- If your calculator does not have a π button, take the value of π to be 3.14 unless otherwise instructed in the question.

Information

- The maximum mark for this paper is 60.
- Mark allocations are shown in brackets.
- Additional answer paper, graph paper and tracing paper will be issued on request and must be tagged securely to this answer booklet.
- You are expected to use a calculator where appropriate.

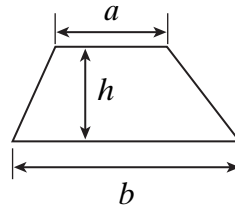
Advice

- In all calculations, show clearly how you work out your answer.

Formula Sheet: Foundation Tier

You may need to use the following formula:

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



Answer **all** questions in the spaces provided.

1 From the list of numbers

2 13 25 30 34 40 49

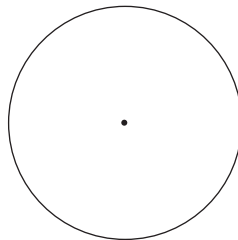
(a) write down a multiple of 6,

Answer (1 mark)

(b) write down the square numbers.

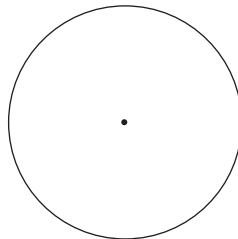
Answer (2 marks)

2 (a) Draw a diameter on the circle.



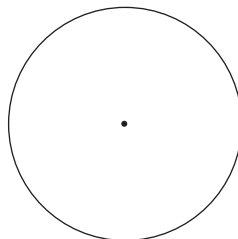
(1 mark)

(b) Draw a chord on the circle.



(1 mark)

(c) Draw a tangent to the circle.

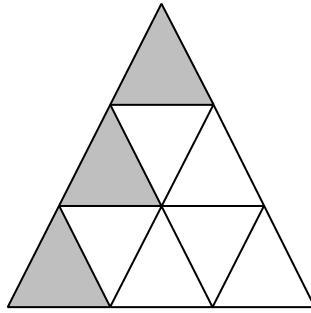


(1 mark)

Turn over ►



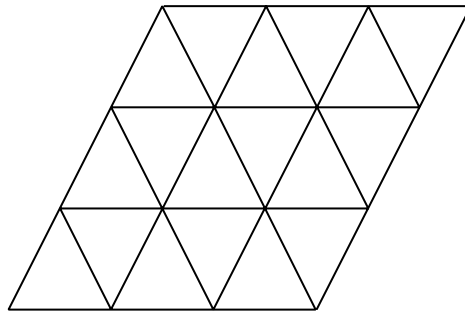
- 3 (a) What fraction of this shape is shaded?
Give your answer in its simplest form.



.....
.....

Answer (2 marks)

- (b) Shade $\frac{1}{2}$ of this shape.



(1 mark)

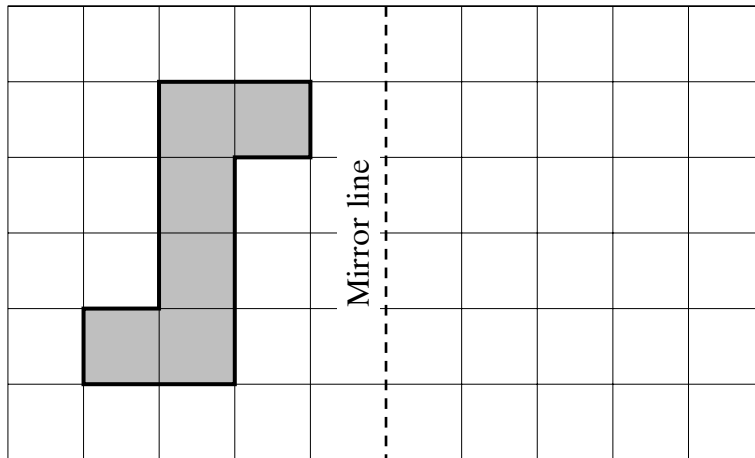
- (c) Which is greater, $\frac{1}{2}$ or $\frac{5}{9}$?

You **must** show your working.

.....
.....
.....

Answer (2 marks)

- 4 Draw the reflection of the shape in the mirror line.



(2 marks)

- 5 (a) The church is due North of the bridge.
Complete the sentence.

The bridge is due of the church.

(1 mark)

- (b) The castle is South West of the school.
Complete the sentence.

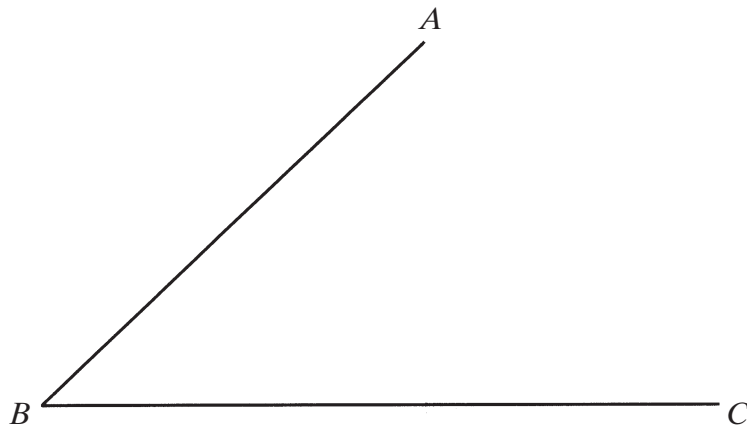
The school is of the castle.

(1 mark)

TURN OVER FOR THE NEXT QUESTION

Turn over ►

6 The diagram shows an angle ABC .



(a) Measure the angle ABC .

Answer degrees (1 mark)

(b) Draw a line through A which is perpendicular to BC .

(1 mark)

7 (a) A sequence begins

1, 2, 5, ...

The rule for continuing this sequence is

Multiply the last term by 3 and subtract 1

What is the next number in the sequence?

.....

Answer (1 mark)

(b) A different sequence begins

4, 1, -2, -5, ...

Write down the rule for this sequence.

.....

.....

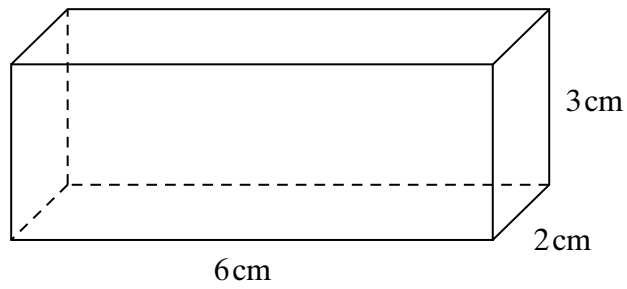
(1 mark)

TURN OVER FOR THE NEXT QUESTION

Turn over ►

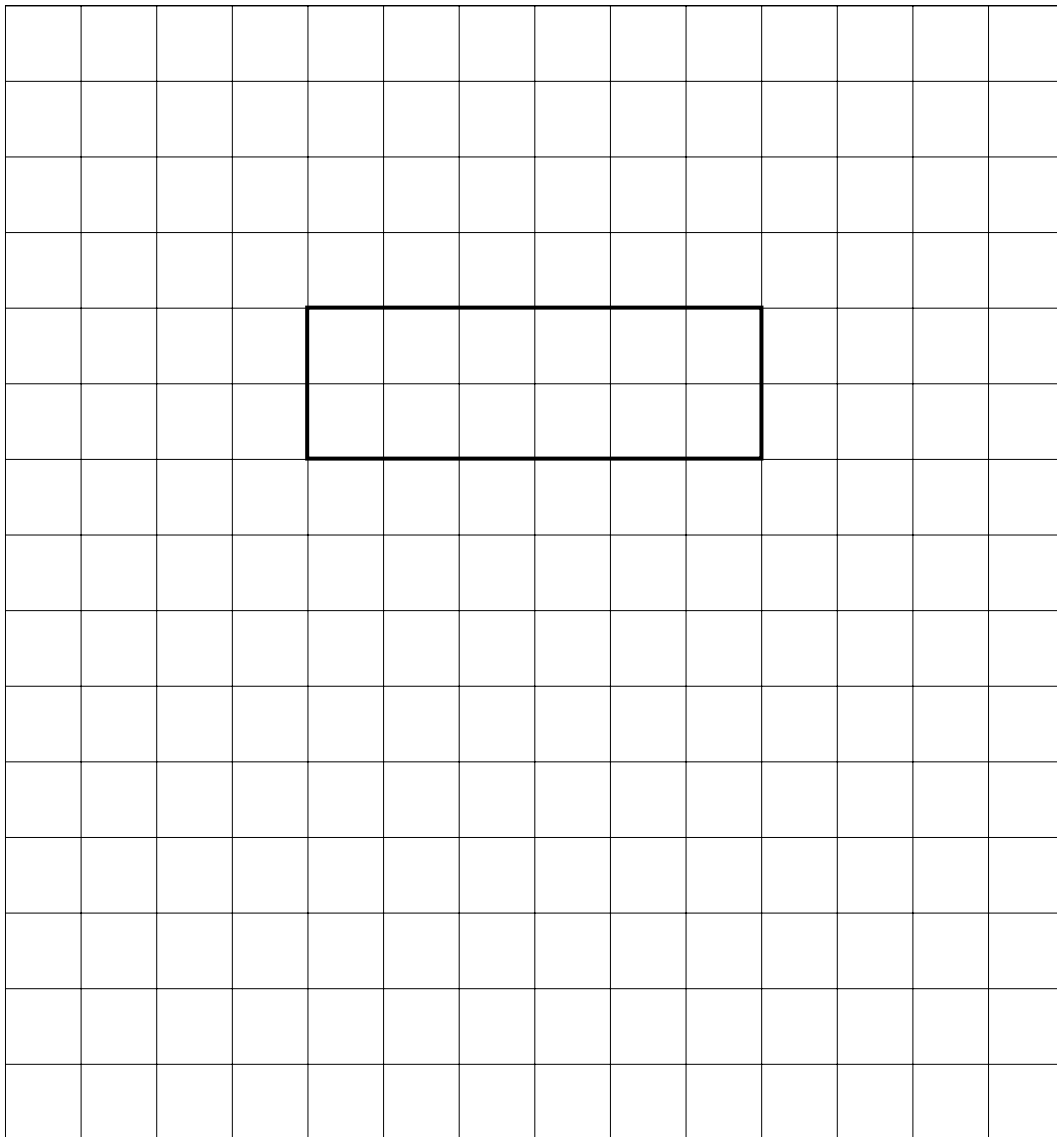
4

- 8 The diagram shows a cuboid of length 6 cm, width 2 cm and height 3 cm.



Not to scale

Draw the net of the cuboid.
The base has been drawn for you.



(3 marks)

9 (a) Matt buys 12 boxes of orange juice at 43 pence each.

(i) Calculate the total cost.

.....

Answer £ (2 marks)

(ii) He pays with a £10 note.

How much change will he receive?

.....

Answer £ (1 mark)

(b) Aisha buys c apples at 16 pence each.

(i) Write down an expression for the total cost in terms of c .

Answer pence (1 mark)

(ii) She now buys d pears at 20 pence each.

Write down an expression for the total cost of the apples and pears.

.....

Answer pence (2 marks)

Turn over ►



10 350 people go on a coach holiday.
Each coach will seat 53 people.

(a) How many coaches are needed?

.....
.....
.....

Answer (1 mark)

(b) How many seats will be empty?

.....
.....
.....

Answer (2 marks)

11 Solve the equations

(a) $3x = 12$

.....

Answer $x =$ (1 mark)

(b) $y + 7 = 13$

.....

Answer $y =$ (1 mark)

(c) $8z - 5 = 11$

.....

.....

Answer $z =$ (2 marks)

(d) $3(w - 2) = 9$

.....

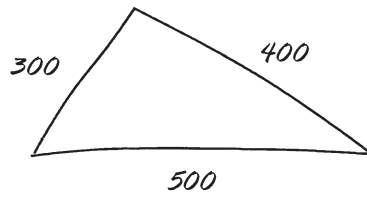
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Answer $w =$ (3 marks)

12 Mutasem draws a rough sketch of a triangle with sides 300 m, 400 m and 500 m.

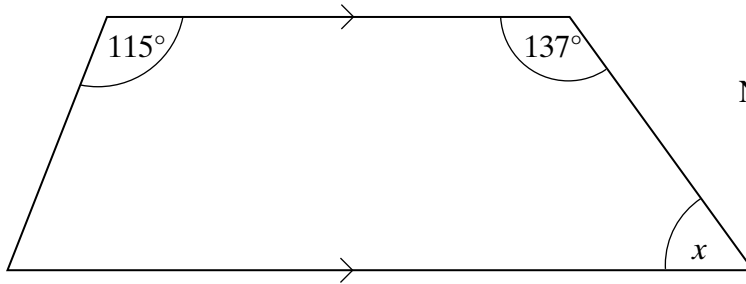


Using ruler and compasses only, make an accurate scale drawing of the triangle.
Use a scale of 1 cm to represent 50 m.

You **must** show clearly all your construction arcs.

(3 marks)

13 The diagram shows a trapezium.



Not drawn accurately

Calculate the value of x .

.....

Answer degrees (2 marks)

14 A circular pond has a radius of 2.2 m.

(a) Calculate the circumference of the pond.

.....

Answer m (2 marks)

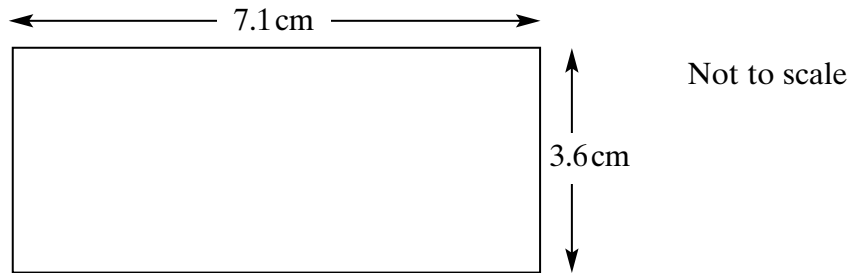
(b) Calculate the area of the pond.

.....

Answer m^2 (2 marks)

Turn over

15 A rectangle has length 7.1 cm and width 3.6 cm.

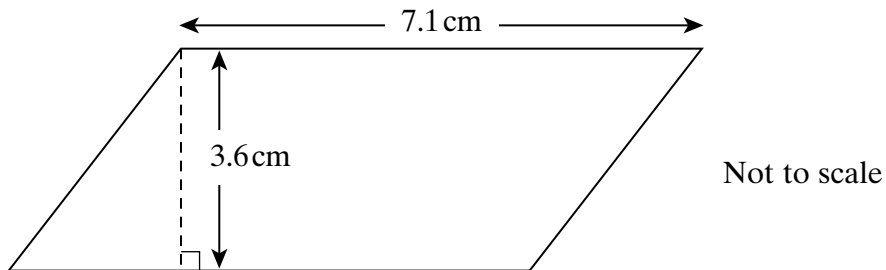


(a) Calculate the area of the rectangle.
Give your answer to 1 decimal place.

.....
.....

Answer cm² (3 marks)

(b) The diagram shows a parallelogram.

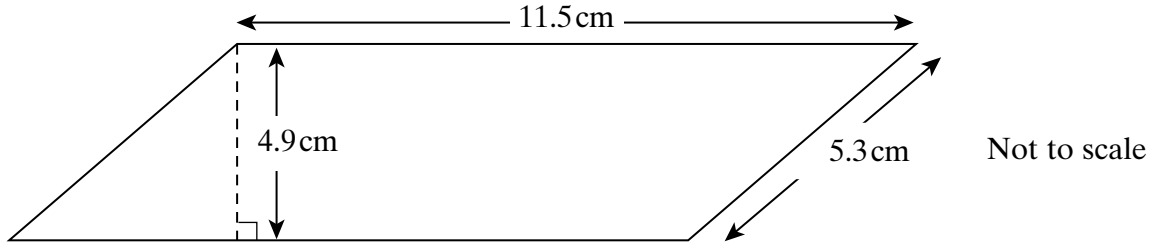


Explain why the area of the parallelogram is equal to the area of the rectangle.

.....
.....

(1 mark)

- (c) This diagram shows a different parallelogram of length 11.5 cm, height 4.9 cm and slant height 5.3 cm.



Calculate the area of this parallelogram.

.....
.....

Answer cm^2 (2 marks)

TURN OVER FOR THE NEXT QUESTION

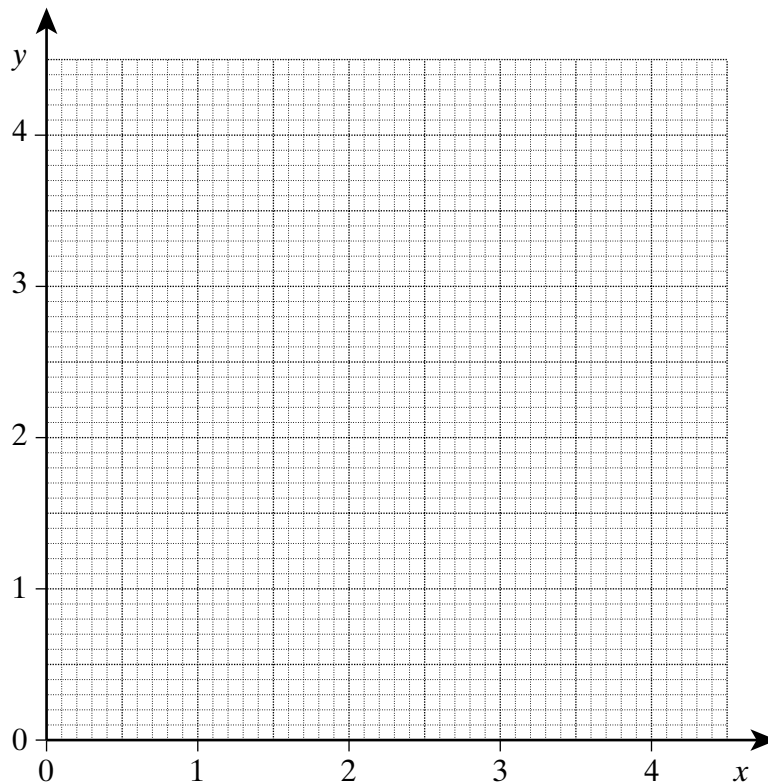
Turn over 

- 16 (a) Complete the table of values for the graph of $x + y = 4$

x	0	1	2	3	4
y	4			1	

(2 marks)

- (b) On the grid, draw the graph of $x + y = 4$



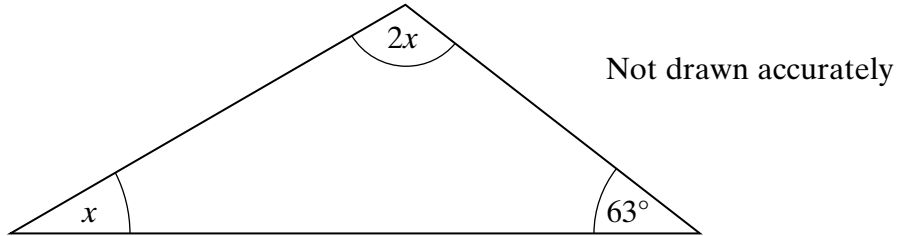
(1 mark)

- (c) P is a point on the line $x + y = 4$
David says, “the x coordinate of P is one greater than the y coordinate of P ”.

Write down the coordinates of P .

Answer (..... ,) (1 mark)

- 17 A triangle has angles of 63° , $2x$ and x .



Work out the value of x .

.....

.....

.....

.....

Answer degrees (3 marks)

END OF QUESTIONS