Surname		Other Names	
Centre Number			Candidate Number									
Candidate Signature												

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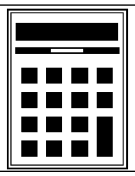
General Certificate of Secondary Education
June 2004

MATHEMATICS (MODULAR) (SPECIFICATION B) 33005/F2
Module 5 Foundation Tier
Paper 2 Calculator

F

Tuesday 15 June 2004 9.00 am to 10.00 am

In addition to this paper you will require:
- a calculator
- mathematical instruments.



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.

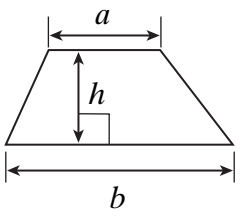
Advice
- In all calculations, show clearly how you work out your answer.

For Examiner's Use	
Pages	**Mark**
3	
4 – 5	
6 – 7	
8 – 9	
10 – 11	
12 – 13	
14	
TOTAL	
Examiner's Initials	

Formula Sheet: Foundation Tier

You may need to use the following formula:

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



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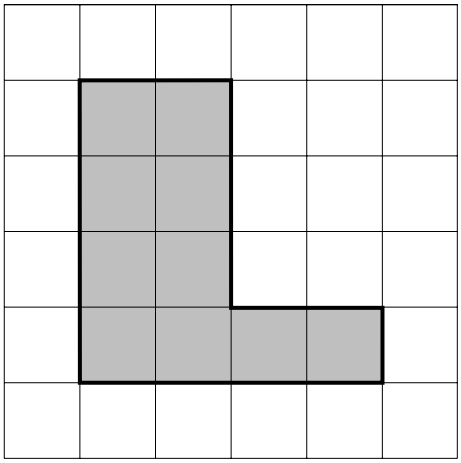
Answer **all** questions in the spaces provided.

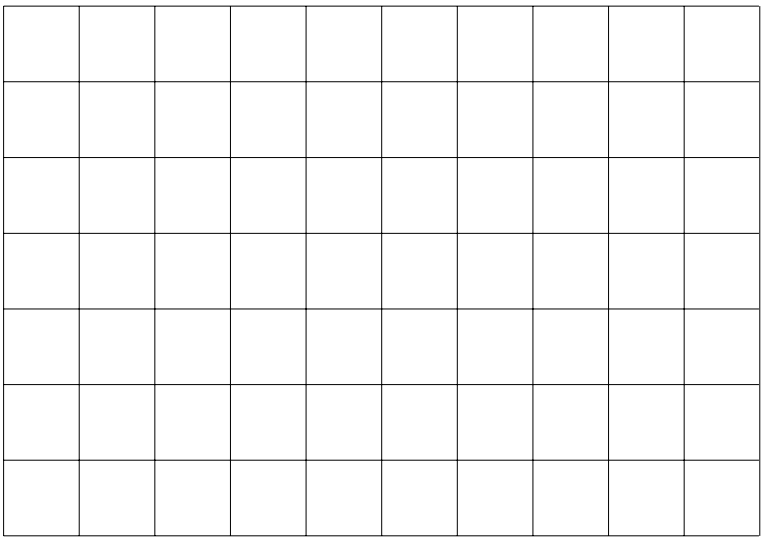
1 This L shape is drawn on a centimetre square grid.



(a) Find the area of this shape.

Answer ..... cm^2 *(1 mark)*

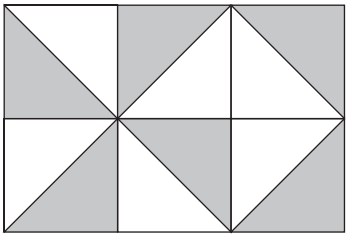
(b) On the grid below, draw a rectangle with the same area as the L shape.



(2 marks)

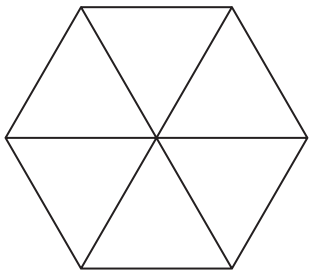
3

2 (a) What fraction of this shape is shaded?



Answer ..... *(1 mark)*

(b) Shade $\frac{2}{3}$ of this shape.



(1 mark)

(c) Write down another fraction which is equivalent to $\frac{2}{3}$

.....

Answer ..... *(1 mark)*

(d) Express $\frac{42}{70}$ as a fraction in its simplest form.

.....

.....

.....

Answer ..... *(2 marks)*

LEAVE MARGIN BLANK

3 (a) Find all the factors of 12.

.....

.....

.....

Answer ..... *(2 marks)*

(b) Write down the factors of 12 which are also factors of 30.

.....

.....

.....

.....

Answer ..... *(3 marks)*

4 The charges on a light railway are worked out by this formula.

30p per mile plus 25p

(a) Abdul travels 7 miles on the railway.
How much is he charged?

.....

.....

Answer £ ..... *(2 marks)*

(b) Belle is charged £3.85
How far does she travel?

.....

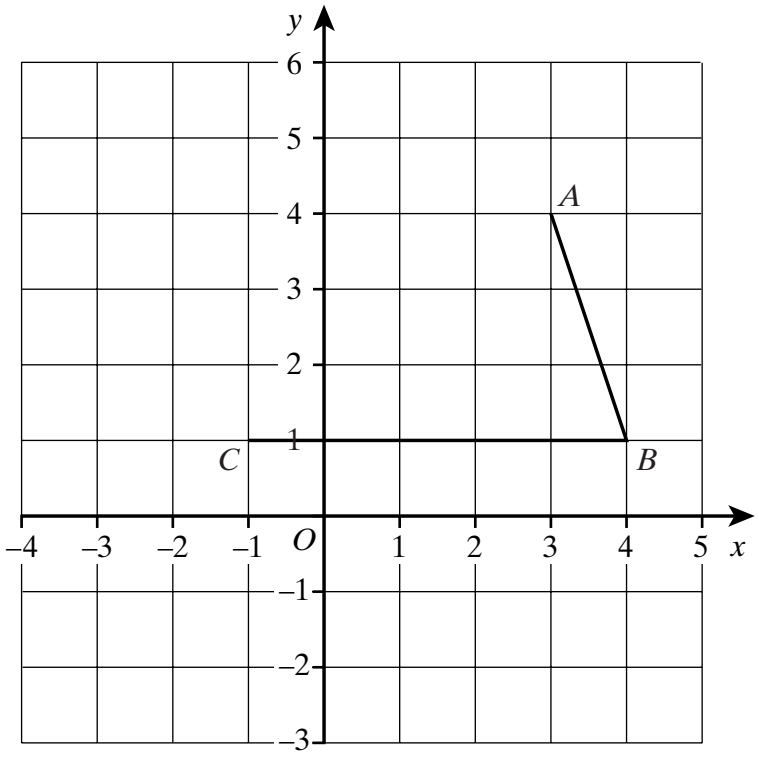
.....

.....

Answer ..... miles *(2 marks)*

14

5 Two sides of a parallelogram are drawn on the grid below.



(a) Write down the coordinates of the point A.

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

(b) Write down the coordinates of the point C.

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

(c) (i) Draw two more lines to complete the parallelogram $ABCD$.

(1 mark)

(ii) Write down the coordinates of D.

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

LEAVE MARGIN BLANK

6 Here is a sequence of numbers.

7 11 15 19 23

(a) Write down the next two numbers in the sequence.

.....

Answer ..... and ..... *(2 marks)*

(b) Write down the rule for continuing the sequence.

.....

.....

(1 mark)

7 (a) Find the square root of 1225.

.....

Answer ..... *(1 mark)*

(b) Find the value of $\frac{1}{\sqrt{1225}}$

Give your answer to 3 decimal places.

.....

Answer ..... *(2 marks)*

8 Matt thinks of a number.
He multiplies it by 4 and then takes away 5.
The answer is 39.

What was the number?

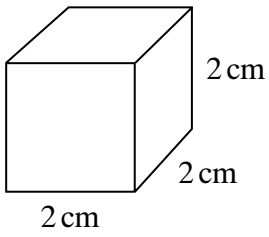
.....

.....

Answer ..... *(2 marks)*

12

9 The diagram shows a cube of side 2 cm.

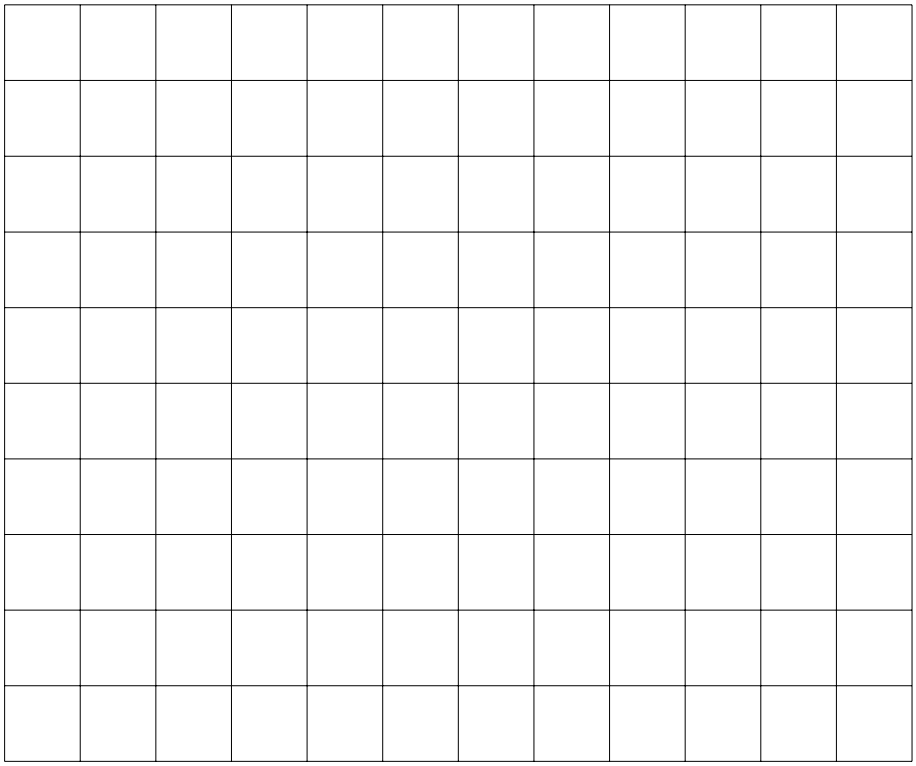


Not to scale

(a) How many faces does a cube have?

Answer ..... *(1 mark)*

(b) Draw an accurate net of this cube on the grid below.



(3 marks)

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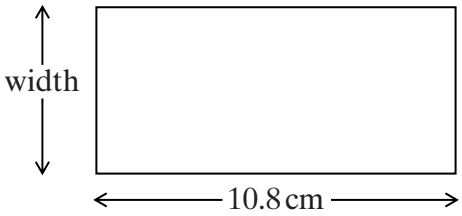
10 The length of a rectangle is 10.8 cm.
The perimeter of the rectangle is 28.8 cm.



Not to scale

Calculate the width of the rectangle.

.....

.....

.....

Answer ..... cm *(3 marks)*

11 (a) k is an even number.
Jo says that $\frac{1}{2}k + 1$ is always even.

Give an example to show that Jo is wrong.

.....

.....
(1 mark)

(b) p and q are both odd numbers.
p is greater than q.

Is $p - q$ an odd number, an even number or could it be either?

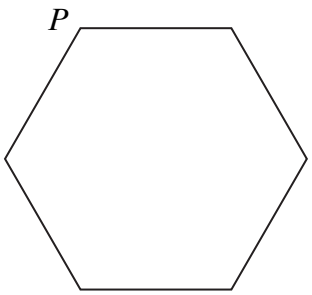
Tick the correct box.

☐ odd ☐ even ☐ either

(1 mark)

9

12 (a) A regular hexagon is drawn below.



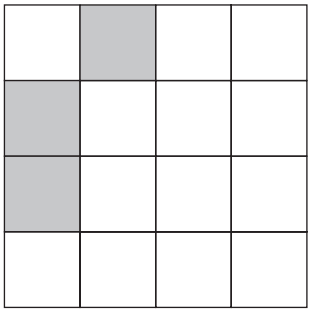
(i) Draw the line of symmetry which passes through the point *P*.

(1 mark)

(ii) How many lines of symmetry does a regular hexagon have?

Answer ..... *(1 mark)*

(b) Three small squares are shaded in the diagram.



Shade in three more small squares to make a pattern with rotational symmetry of order 2.

(2 marks)

13 In triangle ABC, angle $A = 100°$, $AB = 7\,\text{cm}$ and $AC = 4\,\text{cm}$.

Make an accurate drawing of the triangle.
The side AB has been drawn for you.

(2 marks)

14 (a) Simplify $5p + 2q - q + 2p$

.....

Answer ..... *(2 marks)*

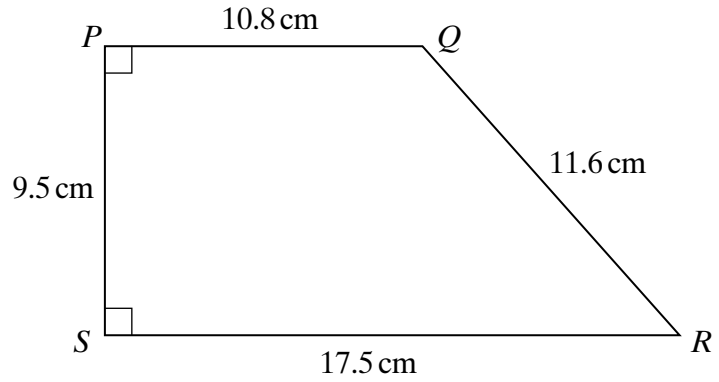
(b) Multiply out $4(r - 3)$

.....

Answer ..... *(1 mark)*

9

15 In the diagram below, $PQ = 10.8\,\text{cm}$, $QR = 11.6\,\text{cm}$, $RS = 17.5\,\text{cm}$ and $PS = 9.5\,\text{cm}$. The angles at P and S are 90°



Not to scale

Calculate the area of $PQRS$.

.....

.....

.....

Answer ..... cm^2 *(3 marks)*

16 (a) Factorise $3x - 6$

.....

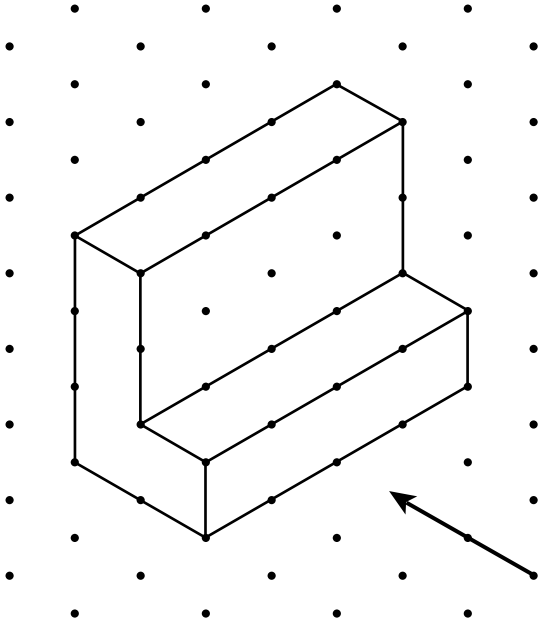
Answer ..... *(1 mark)*

(b) Factorise $x^2 - 2x$

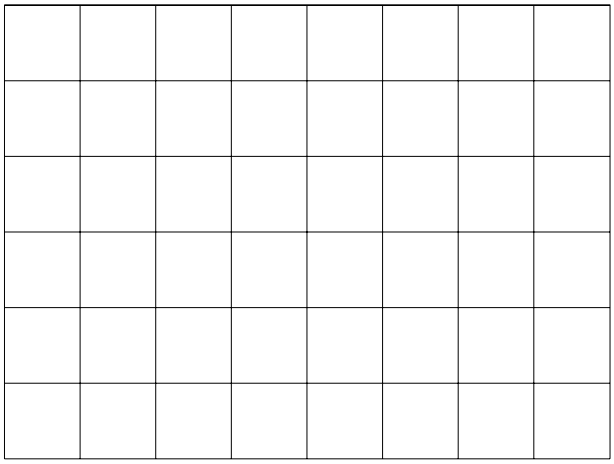
.....

Answer ..... *(2 marks)*

17 The diagram shows a prism with an L-shaped cross section.



On the grid below, draw the elevation of this solid, from the direction shown by the arrow.



(2 marks)

8

Turn over ▶

18 Suzi buys a computer in a sale.
The original price of the computer was £650.

SALE
15% OFF

How much money does Suzi save?

.....

.....

.....

Answer £ ..... *(2 marks)*

19 Calculate the size of an interior angle of a regular octagon.

.....

.....

.....

.....

Answer ..... degrees *(3 marks)*

END OF QUESTIONS

5

THERE ARE NO QUESTIONS PRINTED ON THIS PAGE

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