

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

For Examiner's Use
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General Certificate of Secondary Education  
November 2008



**MATHEMATICS (MODULAR) (SPECIFICATION B)**  
**Module 5 Foundation Tier**  
**Paper 1 Non-calculator**

43005/1F

**F**

Thursday 6 November 2008 9.00 am to 10.15 am

<p><b>For this paper you must have:</b></p> <ul style="list-style-type: none"> <li>mathematical instruments.</li> </ul> <p>You must <b>not</b> use a calculator.</p>	
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For Examiner's Use	
Pages	Mark
3	
4–5	
6–7	
8–9	
10–11	
12–13	
14–15	
16	
TOTAL	
Examiner's Initials	

Time allowed: 1 hour 15 minutes

**Instructions**

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Answers written in margins or on blank pages will not be marked.
- Do all rough work in this book.

**Information**

- The maximum mark for this paper is 70.
- The marks for questions are shown in brackets.
- You may ask for more answer paper, graph paper and tracing paper. This must be tagged securely to this answer book.

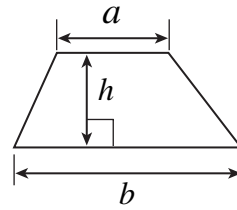
**Advice**

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

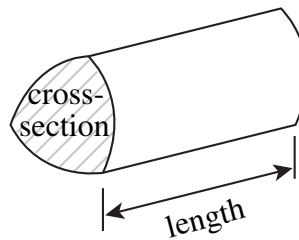


**Formulae Sheet: Foundation Tier**

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



**Volume of prism** = area of cross-section  $\times$  length



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

1 The last bus arrives in Bramley at five past eleven at night.

1 (a) Write this time using the 24-hour clock notation.

Answer ..... (1 mark)

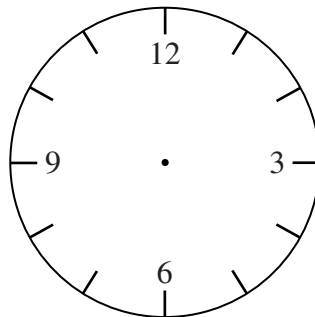
1 (b) (i) The bus left Rotherham 23 minutes earlier.

At what time did the bus leave Rotherham?

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Answer ..... (1 mark)

1 (b) (ii) Put this time on the clock below.

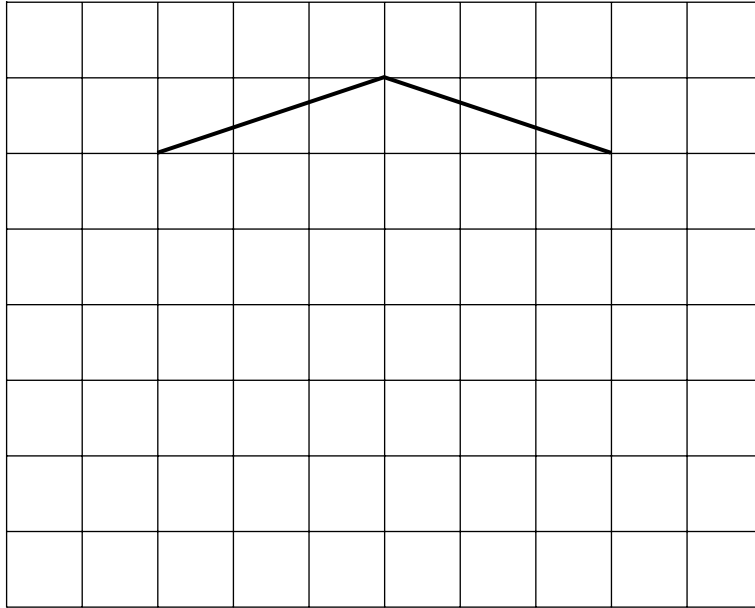


(1 mark)

**Turn over for the next question**



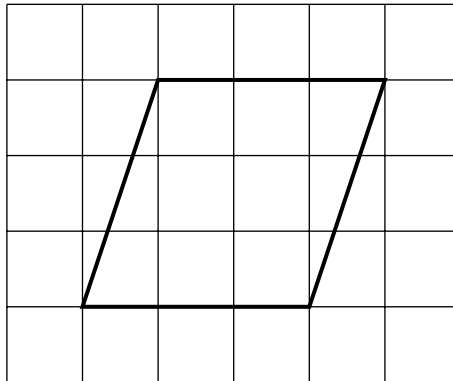
- 2 (a) The lines on the centimetre grid are two sides of a kite.



Draw **two** more lines to complete a kite.

(1 mark)

- 2 (b) The diagram shows a parallelogram on a centimetre grid.



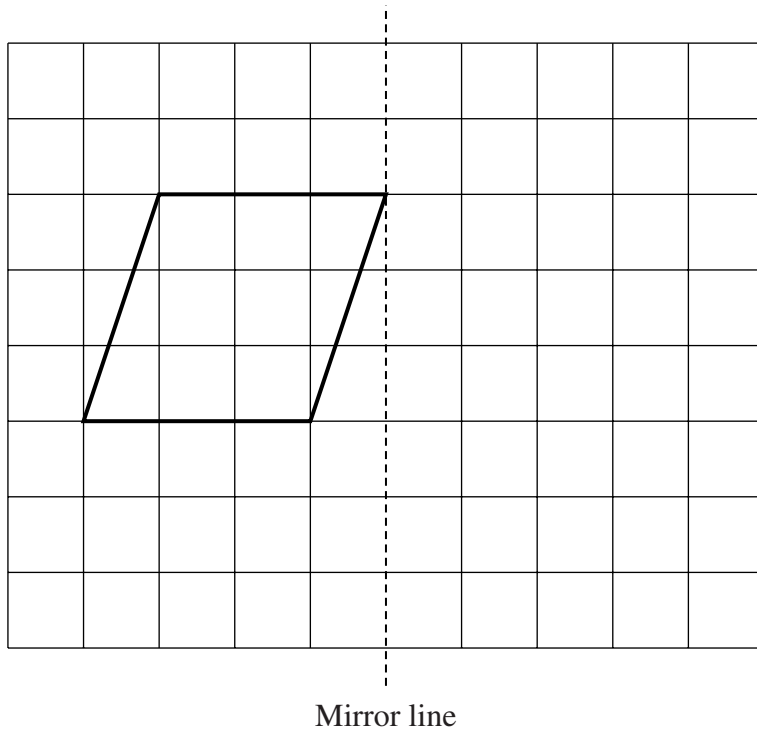
Work out the area of the parallelogram.  
State the units of your answer.

.....  
.....

Answer ..... (3 marks)



- 2 (c) The diagram shows a parallelogram on a centimetre grid.



Draw the reflection of the parallelogram in the mirror line.

(2 marks)

**Turn over for the next question**

**Turn over ►**



3 (a) Complete the following to make them true.

3 (a) (i)  $\frac{5}{8} = \frac{\square}{16}$

(1 mark)

3 (a) (ii) I am thinking of a number.  
I divide it by 5.  
My answer is 12.

The number I am thinking of is .....

(1 mark)

3 (a) (iii) 20% of 60 is equal to 10% of .....

(1 mark)

3 (b) (i) Write down a square number greater than 50 but less than 100.

Answer .....

(1 mark)

3 (b) (ii) Write down a square number greater than 100.

Answer .....

(1 mark)

3 (c) Which is greater  $\frac{5}{8}$  or  $\frac{3}{4}$ ?

You **must** show your working.

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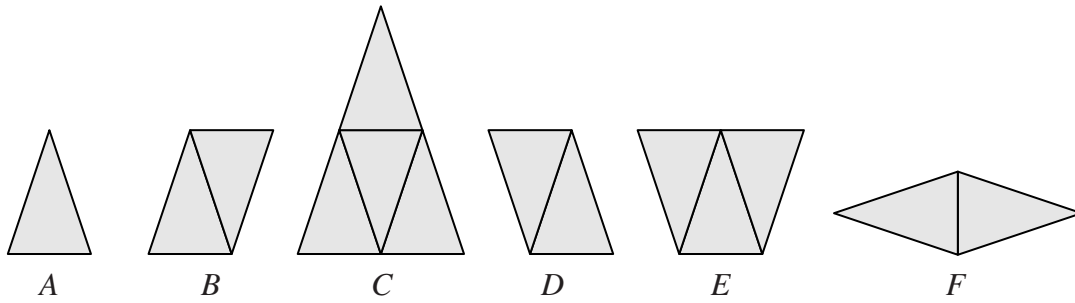
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Answer .....

(2 marks)



4 Shapes are made from identical isosceles triangles.



4 (a) Write down the letters of the shapes that are quadrilaterals.

Answer ..... (2 marks)

4 (b) Write down the letters of the **two** shapes that are congruent.

Answer ..... (1 mark)

4 (c) Write down the letters of the **two** shapes that are similar.

Answer ..... (1 mark)

4 (d) The perimeter of shape *A* is 10 cm.

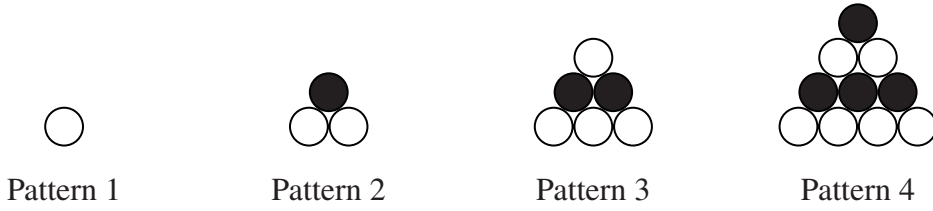
Tick the correct box for each statement.

Statement	True	False
The perimeter of shape <i>B</i> is 20 cm		
The perimeter of shape <i>C</i> is 20 cm		
The perimeter of shape <i>F</i> is 20 cm		

(3 marks)



5 (a) Shaded and unshaded circles are used to make a sequence of patterns as shown.



5 (a) (i) Draw Pattern 5.

(2 marks)

5 (a) (ii) Here is a table about the first six patterns.

Pattern	1	2	3	4	5	6
Number of unshaded circles	1	2	4	6	9	12
Number of shaded circles	0	1	2	4		
Total number of circles	1	3	6	10		

Complete the table.

.....

.....

.....

.....

(3 marks)





5 (b) The term-to-term rule for a sequence is

Multiply by 3

The first two terms of the sequence are 1, 3

Work out the next **two** terms in the sequence.

.....  
.....

Answer ..... (2 marks)

5 (c) The term-to-term rule for a different sequence is

Multiply by 4 and subtract 1

The first two terms of this sequence are 1, 3

Work out the next **two** terms in this sequence.

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.....

Answer ..... (2 marks)

5 (d) The  $n$ th term of a sequence is given by the formula  $2n - 1$

Write down the first **four** terms of the sequence.

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

Answer ..... (2 marks)



6 Here are five letters.

F U N E X

6 (a) Write down the letters which have no lines of symmetry.

Answer ..... (2 marks)

6 (b) Write down the letters which have rotational symmetry.

Answer ..... (2 marks)



7 (a) Convert 500 centimetres to metres.

.....

Answer ..... m (1 mark)

7 (b) Write these measurements in order of size, smallest first.

500 cm      2 m      0.003 km

.....

.....

Answer ..... (2 marks)

7 (c) (i) A bottle holds four litres of water.  
The water is shared equally between eight glasses.  
Each glass holds one pint of water when full.

Which statement is true?  
Tick the correct box.

- The glasses are full and water is left in the bottle.
- The glasses are full and there is no water left in the bottle.
- There is not enough water to fill the glasses completely.

(1 mark)

7 (c) (ii) Explain how you worked out your answer to part (i).

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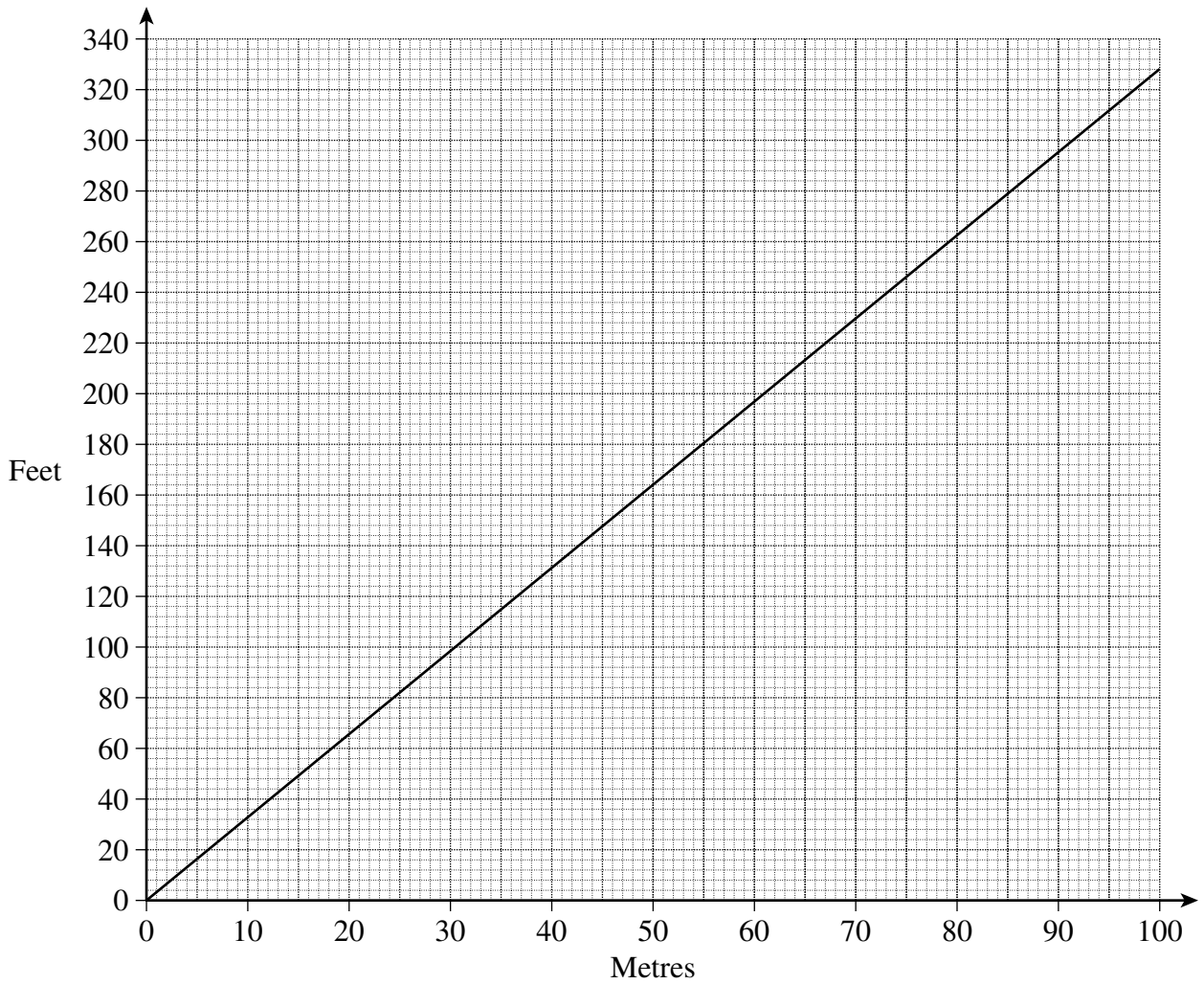
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(1 mark)



8 A conversion graph for metres and feet is shown.



8 (a) Use the graph to convert 100 feet to metres.

Answer ..... metres (1 mark)

8 (b) Use the graph to convert 50 metres to feet.

Answer ..... feet (1 mark)

8 (c) Convert 200 metres to feet.

.....  
Answer ..... feet (2 marks)



9 (a) Simplify  $7a - 5b + 2 + 4a - 3b - 11$

.....

Answer ..... (3 marks)

9 (b) Given that  $f = 8$ ,  $g = -3$  and  $h = \frac{1}{2}$

work out the value of  $4f - 5g - 2h$

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Answer ..... (3 marks)

9 (c) Solve  $6x + 9 = 2x + 7$

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Answer  $x =$  ..... (3 marks)

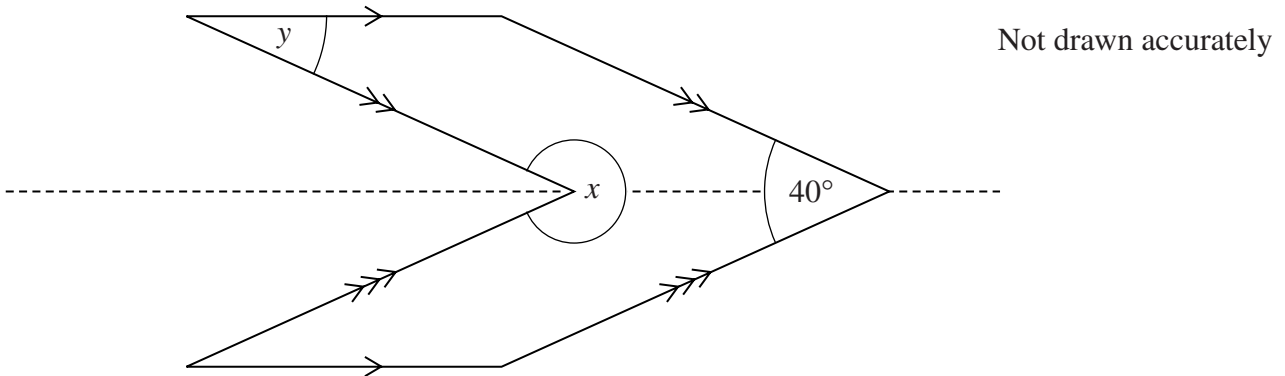
9 (d) Solve  $0.2t = 9$

.....

Answer  $t =$  ..... (1 mark)



**10** The diagram shows a chevron.  
It has one line of symmetry as shown.



**10** (a) Work out the value of  $x$ .

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.....

.....

Answer ..... degrees (2 marks)

**10** (b) Work out the value of  $y$ .

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Answer ..... degrees (2 marks)



11 (a) Simplify  $t^4 \times t^5$

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Answer ..... (1 mark)

11 (b) Simplify  $p^6 \div p^2$

.....

Answer ..... (1 mark)

11 (c) (i) Chris simplifies  $2 \times 2^5$

His answer is  $2^5$

Explain the mistake that he has made.

.....

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(1 mark)

11 (c) (ii) Simplify  $3^6 \div 3$   
Write your answer as a power of 3.

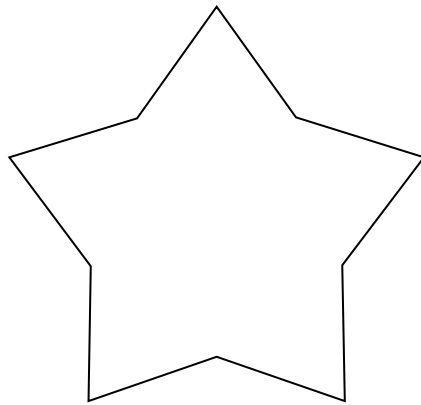
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Answer ..... (1 mark)

**Turn over for the next question**



- 12** The diagram shows a decagon.  
All the sides are equal in length.



Not drawn accurately

- 12** (a) The perimeter of the decagon is 40 cm.  
Write down the length of one side.

Answer ..... cm (1 mark)

- 12** (b) The interior angles of the decagon have a sum of  $1440^\circ$ .  
Each reflex interior angle is  $200^\circ$ .

Work out the size of each acute interior angle.

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

Answer ..... degrees (4 marks)

**END OF QUESTIONS**

