Surname		Other Names	
Centre Number			Candidate Number									
Candidate Signature												

For Examiner's Use

General Certificate of Secondary Education
June 2008

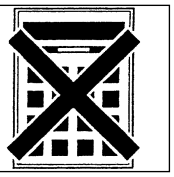
MATHEMATICS (MODULAR) (SPECIFICATION B) 43005/1F
Module 5 Foundation Tier
Paper 1 Non-Calculator

F

Monday 19 May 2008 9.00 am to 10.15 am

For this paper you must have:
- mathematical instruments.

You must **not** use a calculator.



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.

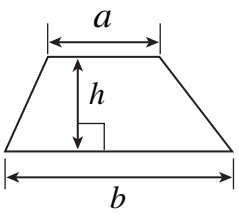
Information
- The maximum mark for this paper is 70.
- The marks for questions are shown in brackets.
- You may ask for more answer paper, graph paper and tracing paper. This must be tagged securely to this answer book.

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

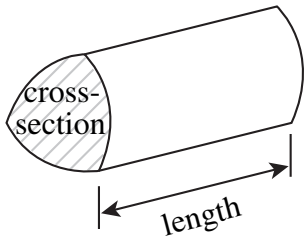
For Examiner's Use	
Pages	Mark
3	
4–5	
6–7	
8–9	
10–11	
12–13	
14–15	
16	
TOTAL	
Examiner's Initials	

Formulae Sheet: Foundation Tier

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

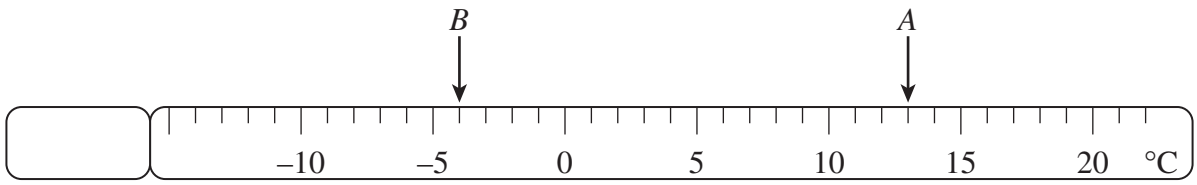


Volume of prism = area of cross-section × length



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

1 The diagram shows a thermometer.



1 (a) Write down temperature *A*.

Answer ..... °C *(1 mark)*

1 (b) Write down temperature *B*.

Answer ..... °C *(1 mark)*

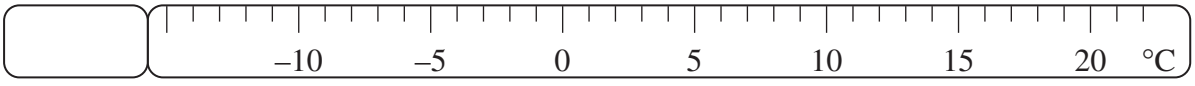
1 (c) Work out the difference between temperature *A* and temperature *B*.

.....

Answer ..... °C *(1 mark)*

1 (d) Temperature *B* rises by 5 °C.

Mark with an arrow the new temperature on the thermometer below.



(1 mark)

4

2 Write down the most suitable metric unit for each of the following.

2 (a) The distance from London to Edinburgh.

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

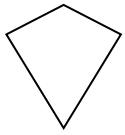
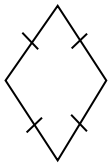
2 (b) The height of a double decker bus.

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

2 (c) The amount of water in a large bottle.

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

3 Complete the empty boxes in the table.

Name of shape	Rectangle	Kite	
Diagram of shape			
Number of lines of symmetry	2		
Order of rotational symmetry		1	2

(5 marks)

4 Here is a list of numbers.

24 26 29 34 40 47 55

4 (a) From the list, write down the multiples of 5.

.....

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

4 (b) From the list, write down the multiples of 8.

.....

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

4 (c) Write down a number that is **not** in the list that is a multiple of both 5 and 8.

.....

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

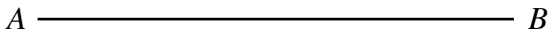
Turn over for the next question

13

5 (a) Draw an acute angle.
Mark your angle clearly.

(1 mark)

5 (b) The diagram shows a line *AB*.



5 (b) (i) Measure the length of the line *AB*.
Give your answer in millimetres.

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

5 (b) (ii) Mark a point *P* on line *AB* that is 4 cm from *A*.

(1 mark)

5 (b) (iii) Work out the length of *PB*.
Give your answer in centimetres.

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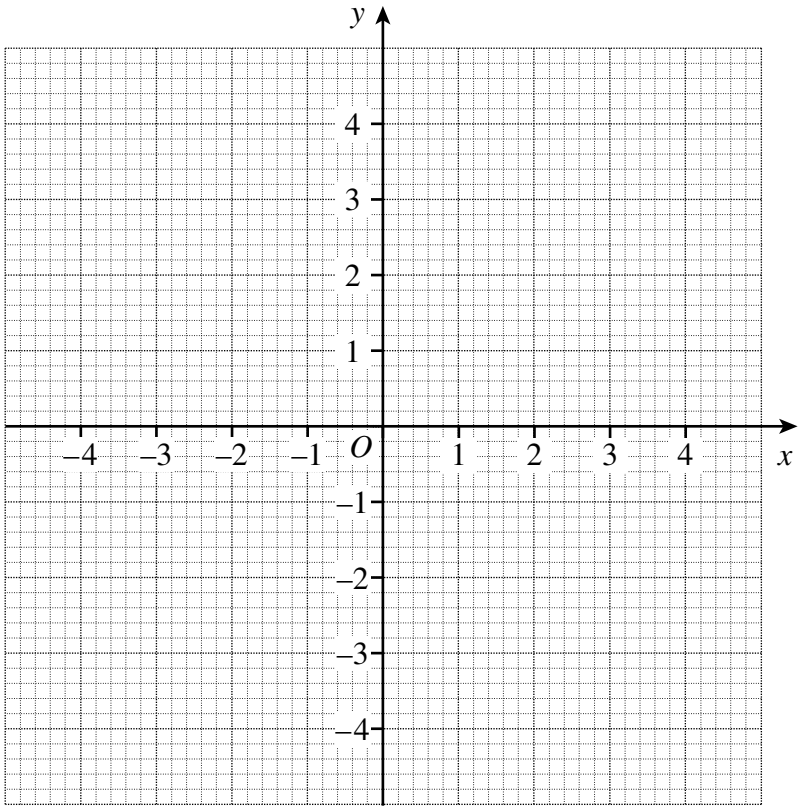
.....

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

6 (a) Plot the points $A(4, 3)$, $B(2, 0)$, $C(-4, -1)$ and $D(-2, 2)$ on the grid.



(2 marks)

6 (b) Join the points to form shape *ABCD*.

(1 mark)

6 (c) Write down the name of shape *ABCD*.

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

6 (d) Write down a property of shape *ABCD*.

Answer .....

.....

(1 mark)

10

7 The mileage charge for a minibus is calculated using the following formula.

Mileage charge = Number of miles × £2

7 (a) Work out the mileage charge for travelling 350 miles.

.....

.....

Answer £ ..... *(2 marks)*

7 (b) The total cost of hiring a minibus is calculated using the following formulae.

Daily charge = Charge per day × number of days Total cost = Fixed charge + Daily charge + Mileage charge

The charge per day = £40
The fixed charge = £99

Work out the total cost for travelling 350 miles over 5 days.

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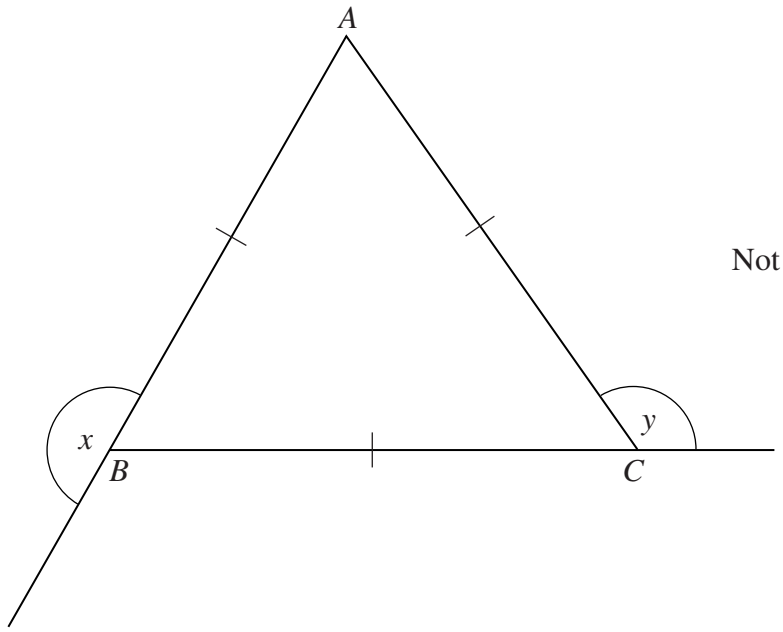
.....

Answer £ ..... *(3 marks)*

8 The diagram shows an equilateral triangle *ABC*.



Not drawn accurately

8 (a) Write down the value of *x*.

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

8 (b) Work out the value of *y*.

.....

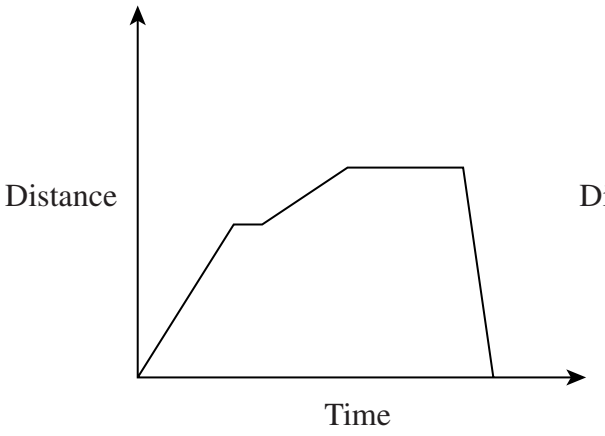
.....

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

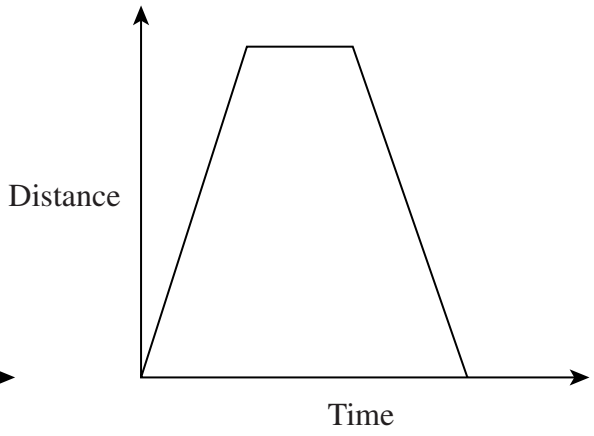
8

9 The diagrams show two journeys *A* and *B*.

Journey *A*



Journey *B*



9 (a) Which journey has two stops?
Explain your answer.

Answer .....

.....

(1 mark)

9 (b) Which part of journey *A* is the fastest?
Mark the line with an arrow on the diagram.

(1 mark)

9 (c) The time taken for all three parts of journey *B* are equal.
Jill says that the speed for the first and third parts of the journey must be equal.

Is she correct?
Explain your answer.

Answer .....

.....

(2 marks)

10 (a) Put a circle around the ratio which is equivalent to 1 cm represents 2 km.

.....

.....

1 : 2000 1 : 200 000 1 : 200 1 : 2 000 000

(1 mark)

10 (b) The scale on a map is 1 cm represents 2 km.

10 (b) (i) The distance between two towns on the map is 10.5 cm.

What is the actual distance between the towns?

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.....

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

10 (b) (ii) The actual distance between two cities is 60 km.

Work out the distance between the two cities on the map.

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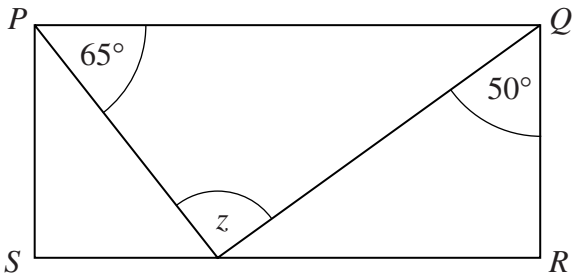
Answer ..... cm *(2 marks)*

9

11 *PQRS* is a rectangle.



Not drawn accurately

Work out the value of z.

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.....

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

12 Here is a multiplication table.

×	11	12	13	14	15
3	33	36	39	42	45
4	44	48	52	56	60

12 (a) Use the multiplication table to complete the following.

12 (a) (i) $\frac{3}{4} = \frac{\square}{60}$

(1 mark)

12 (a) (ii) $\frac{4}{3} = \frac{52}{\square}$

(1 mark)

12 (b) Emma says that $\frac{37}{48}$ is greater than $\frac{3}{4}$

Is she correct?
Explain your answer.

.....

.....

.....

(2 marks)

12 (c) Factorise $33x + 44$

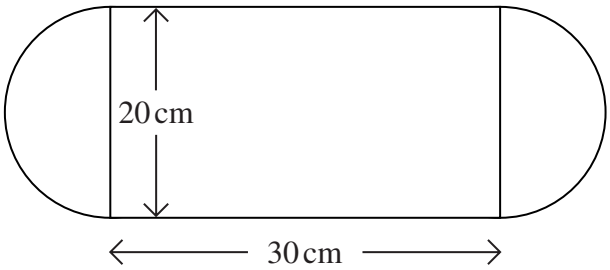
.....

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

8

Turn over ▶

13 The diagram shows a shape made of two semicircles and a rectangle.



Not drawn accurately

Use $\pi = 3$ to work out an estimate for the perimeter of the shape.

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

14 Matias is x years old.
Kaz is three years younger than Matias.

14 (a) Write down an expression, in terms of x, for Kaz's age.

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

14 (b) The sum of the ages of Matias and Kaz is 91.

Use this information to write down an equation in terms of x.

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.....

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

14 (c) Solve your equation formed in part (b) to work out the age of Matias.

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

15 (a) Multiply out $a(b + c)$

.....

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

15 (b) Work out the value of $xy + xz$ when $x = 27$, $y = 3$ and $z = 7$

.....

.....

.....

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

Turn over for the next question

12

16 (a) Write down the value of 13^2

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

16 (b) Explain how you know that 14^2 is **not** equal to 192.

.....

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(1 mark)

17 (a) Multiply out $-2(3a - b + 5)$

.....

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

17 (b) Multiply out and simplify $4(8e - 9) + 2e$

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

END OF QUESTIONS