Surname		Other Names	
Centre Number			Candidate Number									
Candidate Signature												

For Examiner's Use

General Certificate of Secondary Education
June 2007

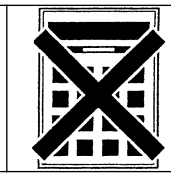
MATHEMATICS (MODULAR) (SPECIFICATION B) 33005/F1
Module 5 Foundation Tier
Paper 1 Non-Calculator

F

Monday 4 June 2007 1.30 pm to 2.30 pm

For this paper you must have:
- mathematical instruments.

You must **not** use a calculator.



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.
- Answer the questions in the spaces provided.
- Do all rough work in this book.

Information

- The maximum mark for this paper is 60.
- 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

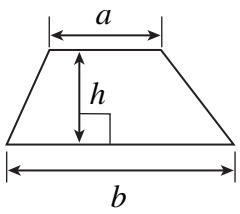
- In all calculations, show clearly how you work out your answer.

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

Formula Sheet: Foundation Tier

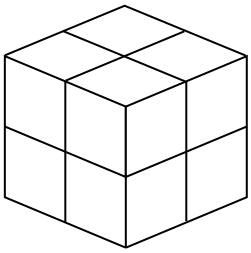
You may need to use the following formula:

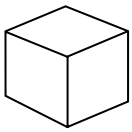
Area of trapezium = $\frac{1}{2}(a+b)h$



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

1 A large cube is made from centimetre cubes as shown.

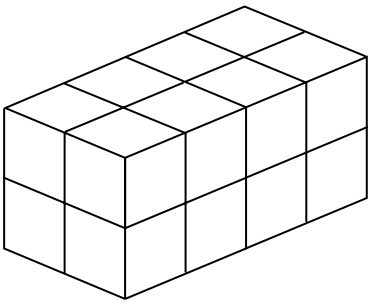




(a) Write down the volume of the large cube.
State the units of your answer.

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

(b) Two of the large cubes are now put together as shown.



Write down the mathematical name of the new shape.

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

(c) Work out the volume of the new shape.
State the units of your answer.

.....

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

Turn over ►

4

2 Here is a list of numbers.

2 4 8 16 32

(a) Put a circle around the number that is **not** a multiple of 4.

(1 mark)

(b) There are two square numbers in the list.

Write down these **two** numbers.

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

(c) There is one cube number in the list.

Write down this cube number.

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

(d) The numbers in the list are part of a sequence.

…… 2 4 8 16 32 ……

(i) Fill in the missing numbers in the sequence.

(2 marks)

(ii) A new sequence is made by adding consecutive terms as shown.

Fill in the missing numbers in this sequence.

(2 marks)

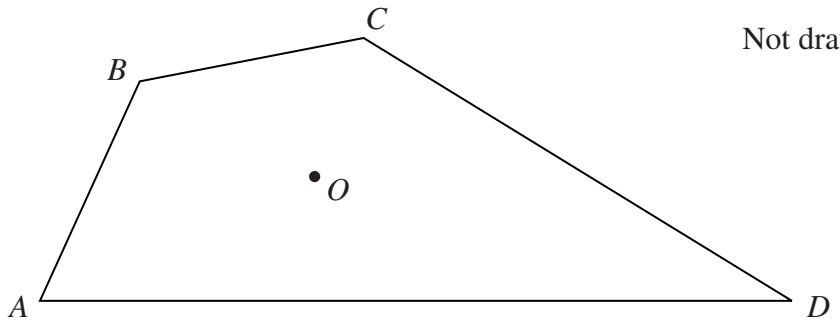
(iii) Write down the term-to-term rule for the new sequence.

.....

.....

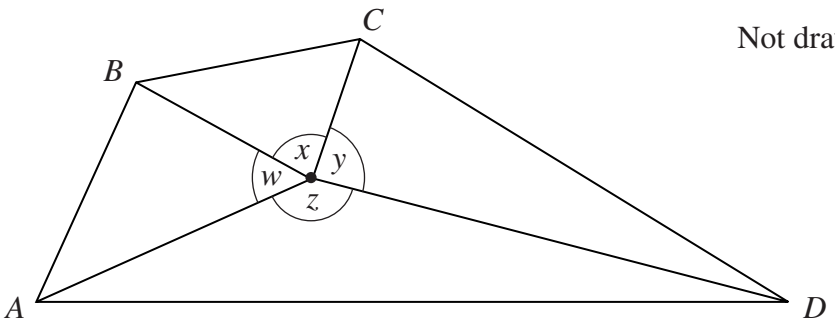
(1 mark)

3 The diagram shows a quadrilateral *ABCD* and a point *O*.



Not drawn accurately

The point *O* is joined to each vertex as shown.



Not drawn accurately

(a) Write down the value of $w + x + y + z$

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

(b) Angle w is less than 90°.

Write down the name for an angle that is less than 90°.

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

(c) Angle z is greater than 90°.

Write down the name for an angle that is greater than 90° and less than 180°.

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

(d) $x + y = 100°$
$x = 34°$

Work out the value of angle y.

.....

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

4 Here are two conversions.

1 litre = 100 cl
1 litre = 1000 ml

(a) How many millilitres are equal to 1 centilitre?

.....

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

(b) Convert 3.5 litres to centilitres.

.....

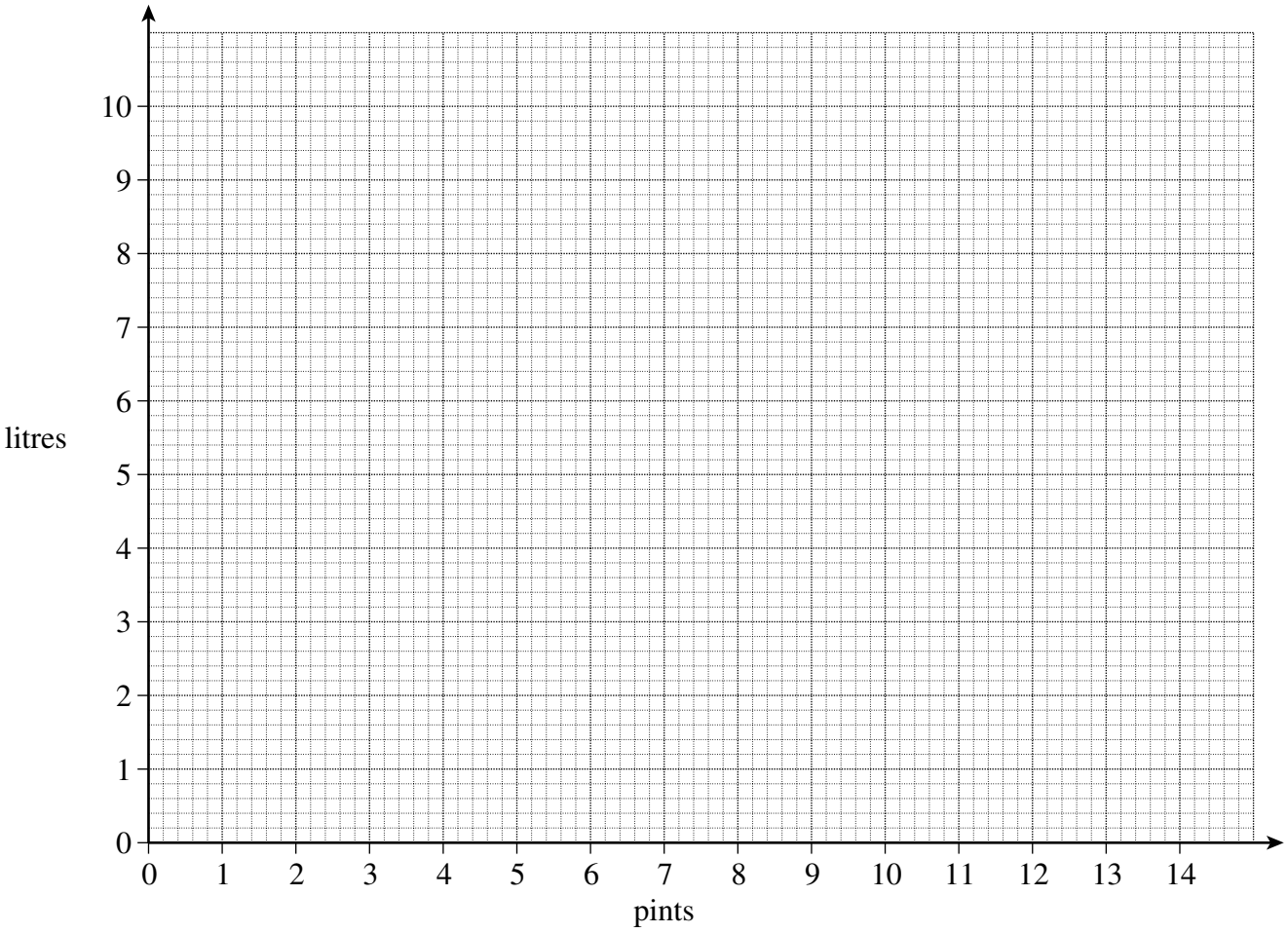
Answer ..... centilitres *(2 marks)*

(c) Convert 480 millilitres to litres.

.....

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

(d) (i) Use the fact that 7 pints = 4 litres to draw a conversion graph on the grid.



(2 marks)

Use your graph to convert

(ii) 10 pints to litres

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

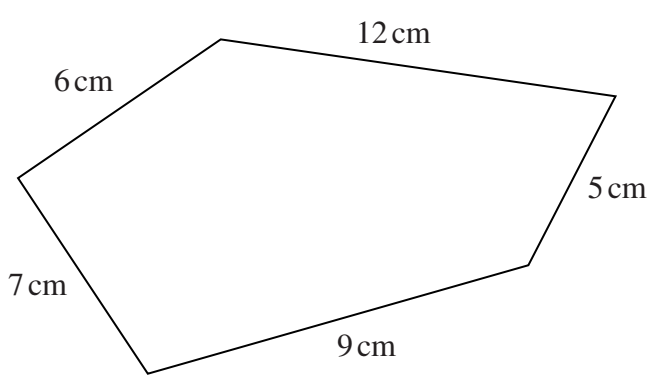
(iii) 3 litres to pints.

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

Turn over ▶

12

5 The diagram shows a pentagon.



Not drawn accurately

(a) Explain how you can show that the perimeter is equal to 39 cm.

.....

.....

(1 mark)

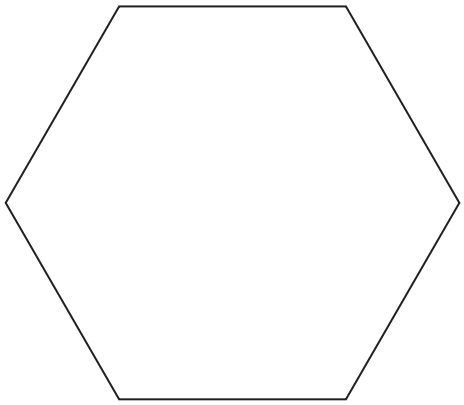
(b) Work out the difference between the length of the longest side and the length of the shortest side.

.....

.....

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

(c) The diagram shows a regular hexagon.



Not drawn accurately

The perimeter of the hexagon is equal to the perimeter of the pentagon.

Work out the length of one side of the hexagon.

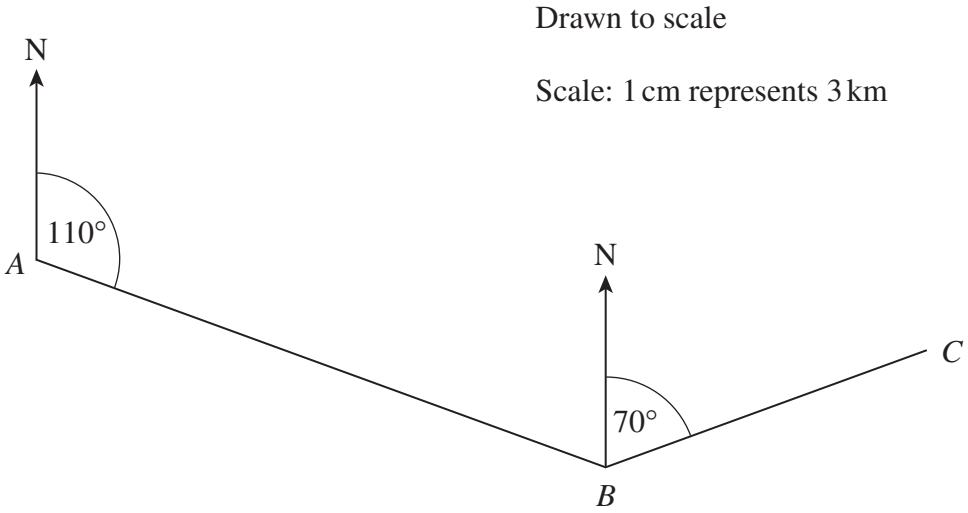
.....

.....

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

Turn over for the next question

6 The diagram shows three points *A*, *B* and *C*.
The three-figure bearing of *B* from *A* is 110°.



(a) Write down the three-figure bearing of *C* from *B*.

Answer ..... ° *(1 mark)*

(b) Measure the length of *AB*.

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

(c) 1 cm represents 3 km.

(i) Work out the actual length of *AB*.
Give your answer in kilometres.

.....

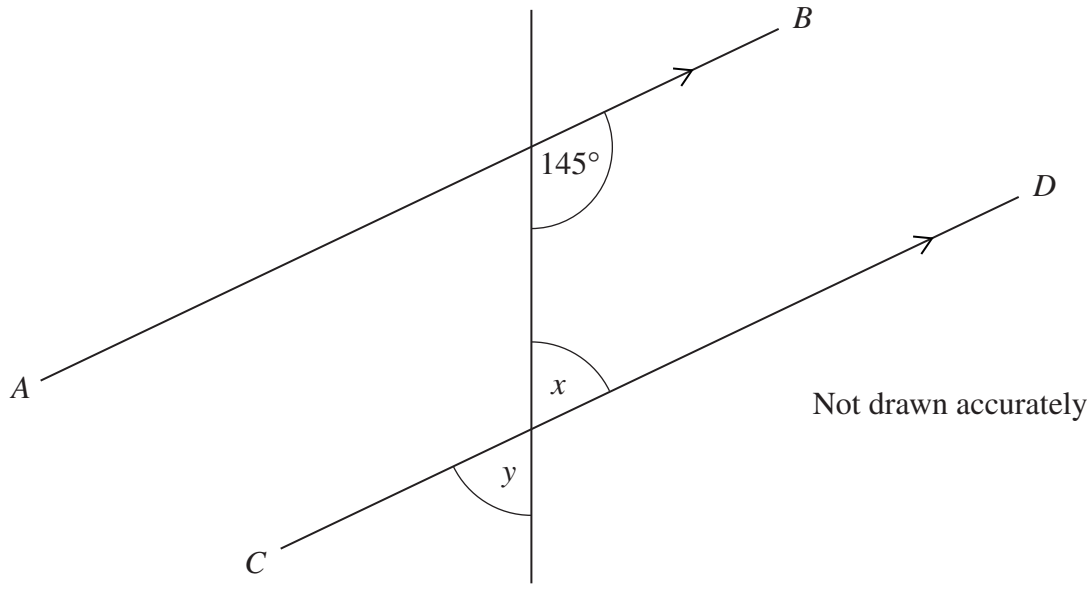
Answer ..... km *(2 marks)*

(ii) Work out the actual length of *BC*.
Give your answer in kilometres.

.....

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

7 In the diagram *AB* is parallel to *CD*.



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

.....

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

(b) (i) Write down the value of *y*.

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

(ii) Give a reason for your answer.

.....

.....

(1 mark)

Turn over ▶

10

8 (a) Solve these equations.

(i) $5x = 30$

.....

Answer $x =$ ..... *(1 mark)*

(ii) $6y - 1 = 20$

.....

.....

Answer $y =$ ..... *(2 marks)*

(iii) $6(z + 1) = 48$

.....

.....

Answer $z =$ ..... *(3 marks)*

(b) Jon thinks of a number.
He adds 6 to the number and then divides by 4.
The answer is 5.

What was the number?

.....

.....

.....

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

LEAVE MARGIN BLANK

9 Factorise fully

(a) $4x + 8$

.....

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

(b) $4x^2 + 8x$

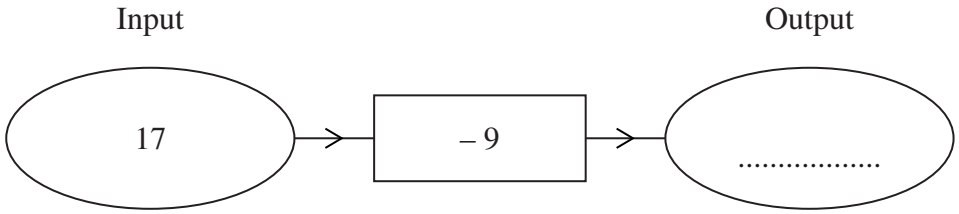
.....

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

Turn over for the next question

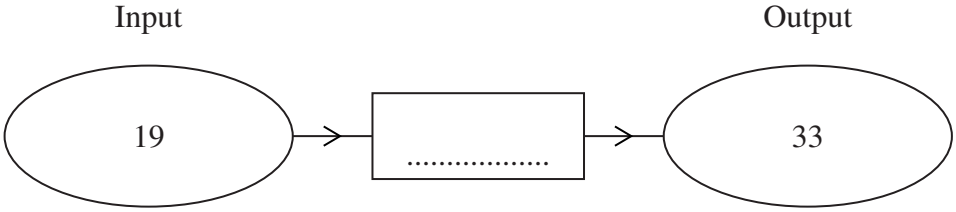
10 Complete the flow diagrams to make them work.

(a)



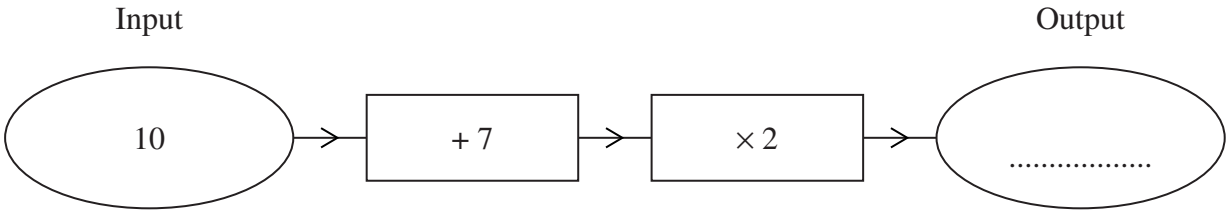
(1 mark)

(b)



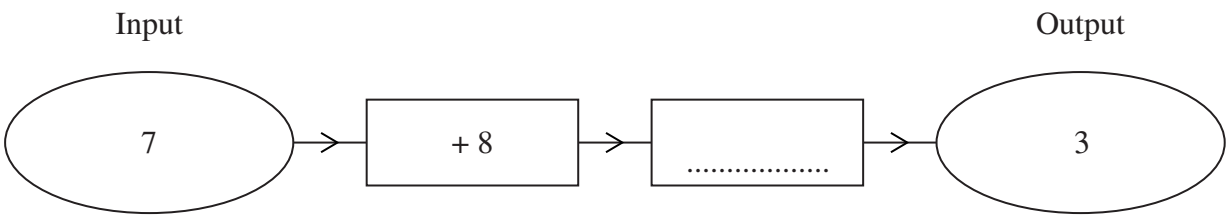
(1 mark)

(c)



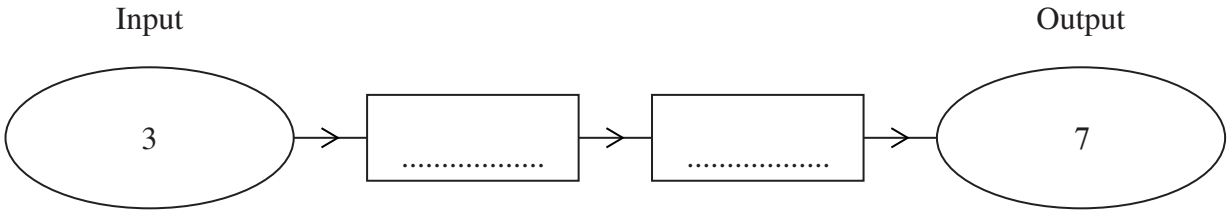
(1 mark)

(d)



(1 mark)

(e)



(1 mark)

END OF QUESTIONS

There are no questions printed on this page