M1

OCR
RECOGNISING ACHIEVEMENT

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)
MODULE M1 – SECTION A

B271A

Candidates answer on the question paper

OCR Supplied Materials:
None

Other Materials Required:
*   Geometrical instruments
*   Tracing paper (optional)

Tuesday 23 June 2009
Morning

Duration: 30 minutes

B271A

Candidate Forename		Candidate Surname	

Centre Number						Candidate Number					

INSTRUCTIONS TO CANDIDATES

*   Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
*   Use black ink. Pencil may be used for graphs and diagrams only.
*   Read each question carefully and make sure that you know what you have to do before starting your answer.
*   Show your working. Marks may be given for a correct method even if the answer is incorrect.
*   Answer **all** the questions.
*   Do **not** write in the bar codes.
*   Write your answer to each question in the space provided, however additional paper may be used if necessary.

INFORMATION FOR CANDIDATES

*   The number of marks is given in brackets **[ ]** at the end of each question or part question.
*   The total number of marks for this Section is **25**.
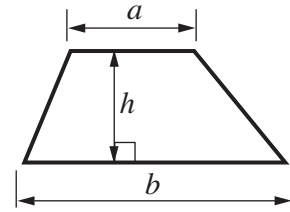*   This document consists of **8** pages. Any blank pages are indicated.
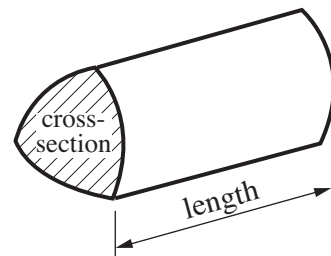
WARNING

⊠ **No calculator can be used for Section A of this paper**

Turn over

Formulae Sheet

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

Volume of prism = (area of cross-section) × length

PLEASE DO NOT WRITE ON THIS PAGE

1 **(a)** These are the six deepest caves in the world.

Cave		Depth (m)
Jean Bernard	(France)	1602
Mirolda	(France)	1733
Sarma	(Georgia)	1543
Torca del Cerro	(Spain)	1589
Voronja	(Georgia)	2080
Vogelschacht	(Austria)	1632
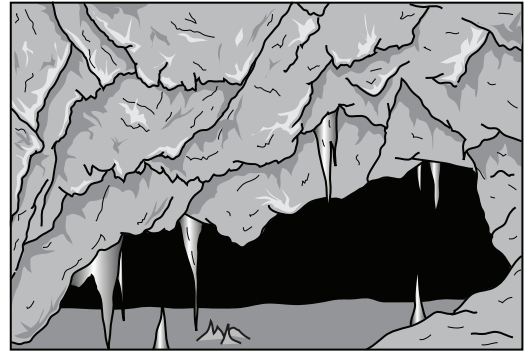
   (i) Which is the deepest cave?

   (a)(i) .... **[1]**

   (ii) The depth of the Jean Bernard cave is 1602 metres.

   Write 1602 in words.

   ....

   .... **[1]**

   (iii) The depth of Mirolda cave is 1733 metres.

   Round 1733 to the nearest 10.

   (iii) .... **[1]**

   (b) The depth of Dowal Dale cave is 65 metres.
   The Blue John cave is 25 metres deeper than this.

   What is the depth of the Blue John cave?

   (b) .... m **[2]**

Turn over

2   A family decides to visit a cave.

  (a)   They find this list of UK caves on the Internet.

- Blue John
- Cheddar
- Clearwell
- Ingleborough
- Kents
- Marble Arch
- Showcaves centre for Wales
- Peak
- Pooles
- Speedwell
- Stump Cross
- Treak Cliff
- White Scar
- Wookey Hole

They live close enough to visit half of these caves.

How many caves is this?

(a) .... **[2]**

  (b)   The family decides to visit Ingleborough caves.

> **Ingleborough Caves Admission**
>
> **Adults   £6·00 each**
> **Children   £3·00 each**
>
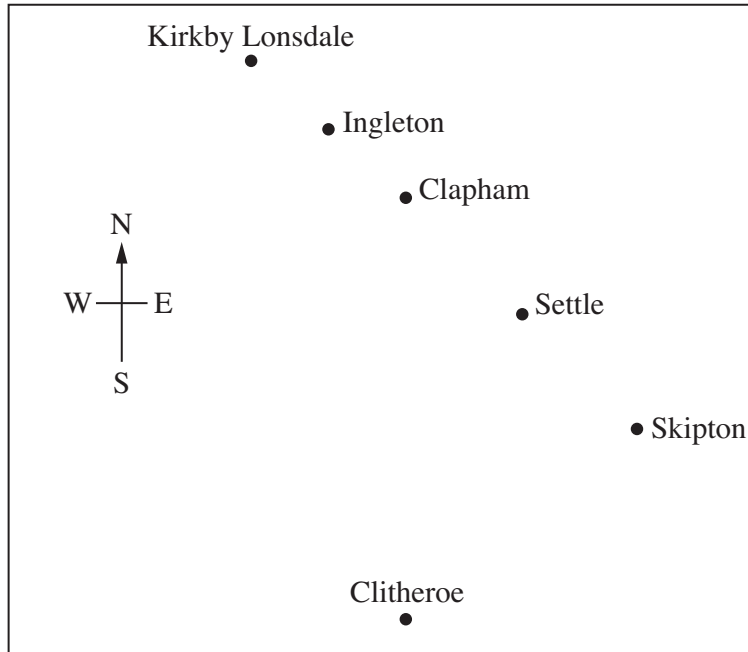> **Family tickets (2 adults + 2 children)   £15·00**

There are two adults and two children in the family.

How much will they save by buying a family ticket?

(b) £ .... **[3]**

(c) Ingleborough caves are close to Ingleton.
Here is a map of some towns and villages near Ingleton.

Kirkby Lonsdale
●

● Ingleton

● Clapham

N

W —|— E

S

● Settle

● Skipton

Clitheroe
●

Use the map to complete these sentences.

Clapham is North of ....

Settle is .... of Skipton. **[2]**

(d) In places, the roof in Ingleborough caves is only 1400 millimetres high.

What is 1400 millimetres in centimetres?

(d) .... cm **[1]**

(e) There are tours round the caves.
Each tour takes 50 minutes.
The family starts the tour at this time.

At what time does the tour finish?

(e) .... **[2]**

Turn over

3   The Mayans lived in Central America over 2000 years ago.
They used symbols to represent numbers.

Here are some of their written numbers and their values.

1	2	3	4	5
6	7	8	9	10
11				
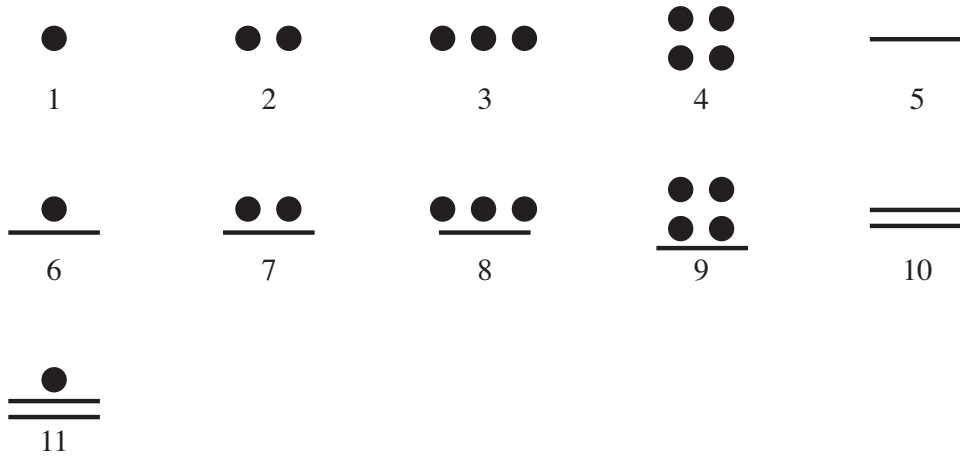
(a)   Write down the values of these Mayan numbers.

  (i)

....

[1]

  (ii)

....

[1]

(b)   Write the number 18 in Mayan.

[1]

4 This grey shape is placed over a centimetre grid.
The lengths of its sides are equal.
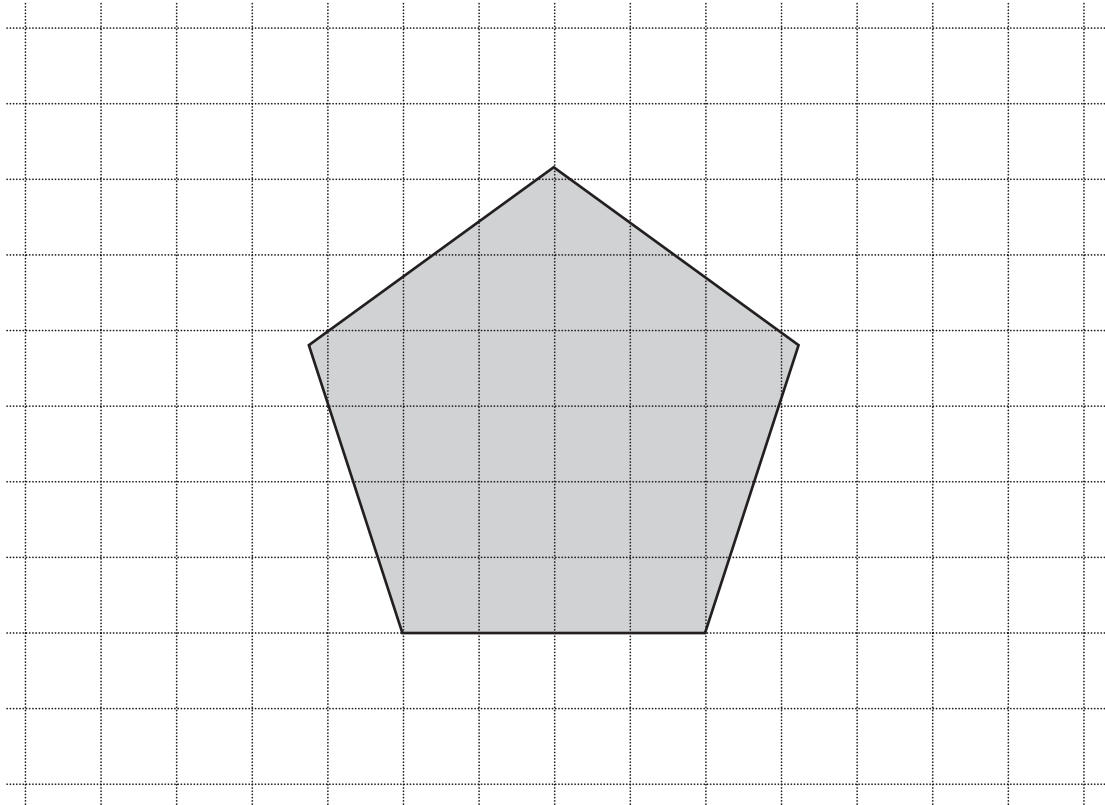
(a) What is the name of the grey shape?
Put a ring round the answer.

Triangle	Rectangle	Pentagon	Hexagon	Octagon

[1]

(b) Work out the perimeter of the grey shape.
Write down any measurements you use.

(b) .... cm **[2]**

(c) Estimate the area of the grey shape.

(c) .... square centimetres **[2]**

TURN OVER FOR QUESTION 5

5 Work out.

(a) 3×7

(a) ....[1]

(b) $24 \div 6$

(b) ....[1]