Candidate Forename		Candidate Surname	

Centre Number					Candidate Number				

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GENERAL CERTIFICATE OF SECONDARY EDUCATION

B272B

MATHEMATICS C

(GRADUATED ASSESSMENT)

MODULE M2 – SECTION B

TUESDAY 23 JUNE 2009: Morning
DURATION: 30 minutes

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

Candidates answer on the question paper

<u>OCR SUPPLIED MATERIALS:</u>

None

<u>OTHER MATERIALS REQUIRED:</u>
Geometrical instruments
Tracing paper (optional)
Electronic calculator

<u>READ INSTRUCTIONS OVERLEAF</u>
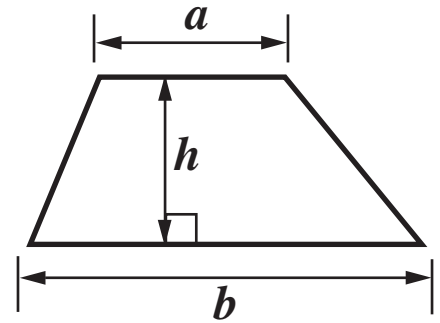
INSTRUCTIONS TO CANDIDATES

- **Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.**

- **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.**

- **Write your answer to each question in the space provided, however additional paper may be used if necessary.**
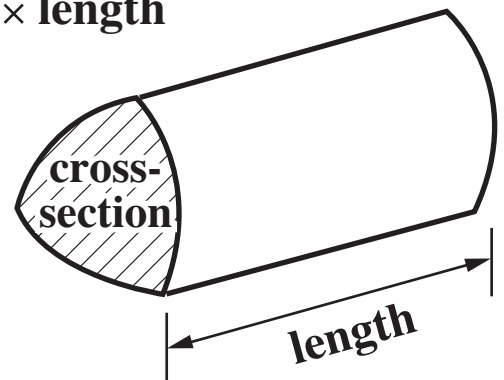
INFORMATION FOR CANDIDATES

- **The number of marks is given in brackets [ ] at the end of each question or part question.**

- **Section B starts with question 4.**

- **You are expected to use a calculator in Section B of this paper.**

- **The total number of marks for this Section is 25.**

FORMULAE SHEET

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

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

4 Use this list of solids to answer these questions.
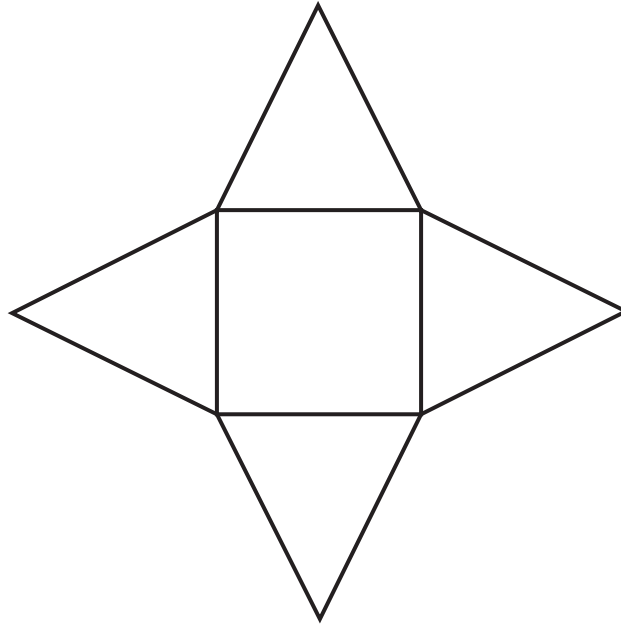
cone	cuboid	pyramid
cube	cylinder	sphere

(a) Which solid can be made using this net?

(a) _____

[1 mark]

(b) This tower is made from two of the solids.
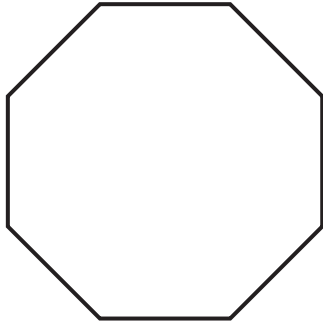
Write down the name of each solid.

←_____

_____
[1 mark]

←_____

_____
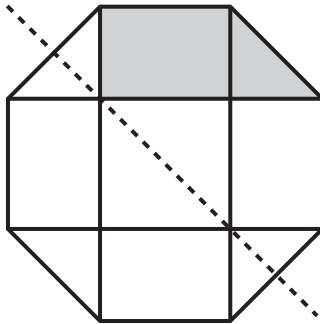[1 mark]

5 **(a)** **(i)** **Write down the name of this shape.**
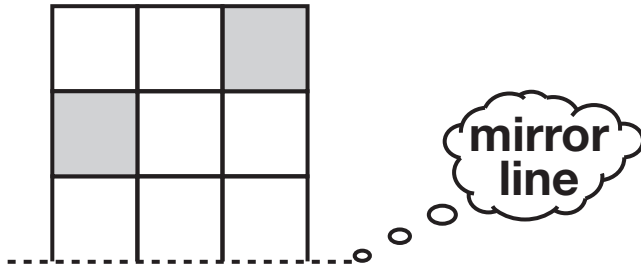
(a)(i) _____

[1 mark]

(ii) **Shade TWO more sections in this pattern so that the dotted line is a line of symmetry.**
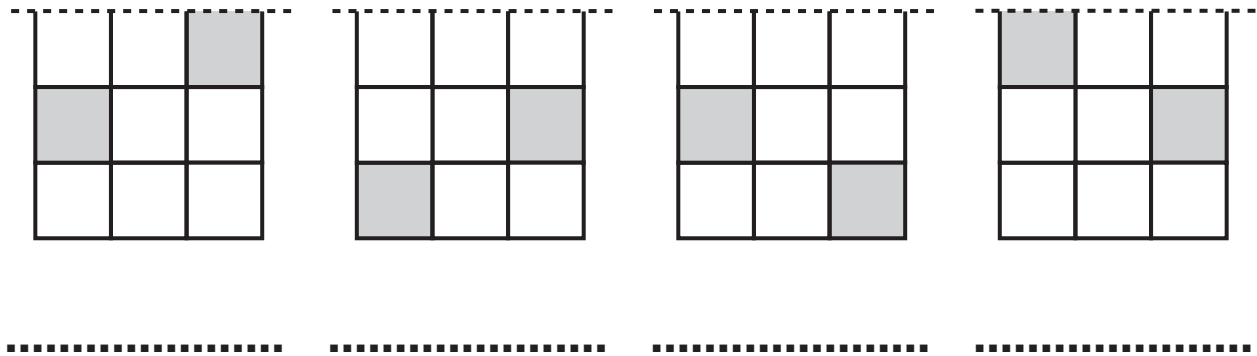
[1 mark]

(b) This is one half of a pattern with reflection symmetry,

mirror
line

Which of these is the other half?
Put a tick (✓) under the correct diagram.

....

[1 mark]

6 **(a)** Here are some number patterns.

4	14	24	34	__
1	5	9	13	__
4	8	16	32	__
1	4	16	64	__

Janet is working out the next number in each pattern.

She says

The rule for the first pattern is ADD 4.

She is wrong.

Which pattern **DOES** have the rule **ADD 4**?
Put a tick (✓) next to your choice.
[1 mark]

(b) Here is a different number pattern.

52   47   42   37   32   …

What is the next number?
Explain how you worked it out.

The next number is _____ because _____

_____

[2 marks]

8

(c) Make a different number pattern of your own, starting with 6.

6   ___   ___   ___   ___   ___

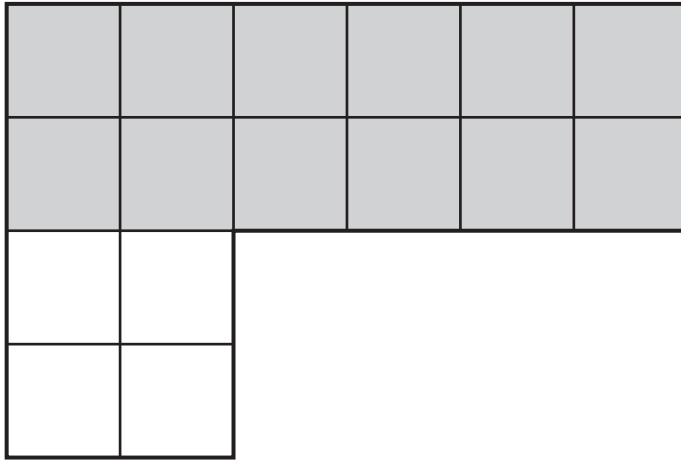**Explain how your number pattern works.**

_____

[1 mark]

7   (a) Ailsa has shaded part of this shape.

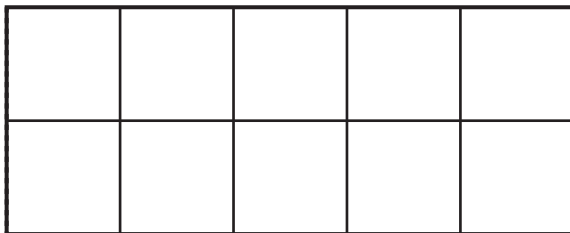   What fraction of this shape is shaded?

                                              (a) _____
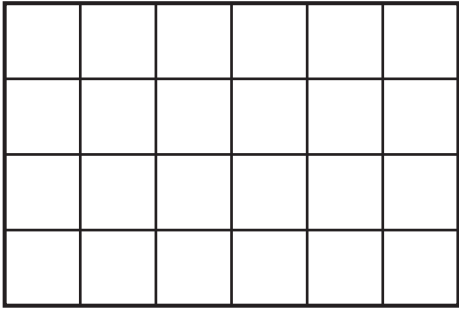   [1 mark]

     (b) Nina wants to shade 0·3 of this shape.

          How many squares does she need to shade?
          Explain how you worked out your answer.

          She needs to shade _____ squares because _____

          _____

          [2 marks]

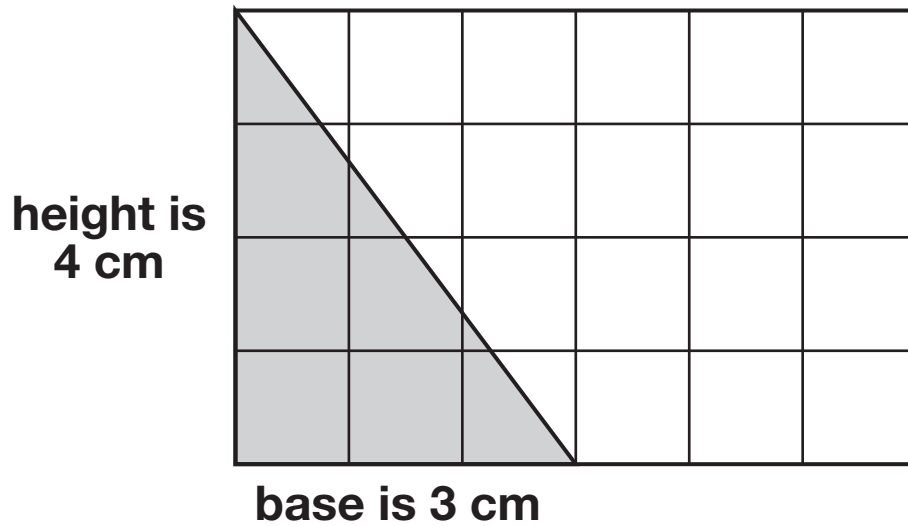**(c)** **Nikki wants to draw a shape with an area of 8 square centimetres.**

Draw a shape with an area of 8 square centimetres.

[2 marks]

(d) Catherine uses this formula to work out the area of this triangle.

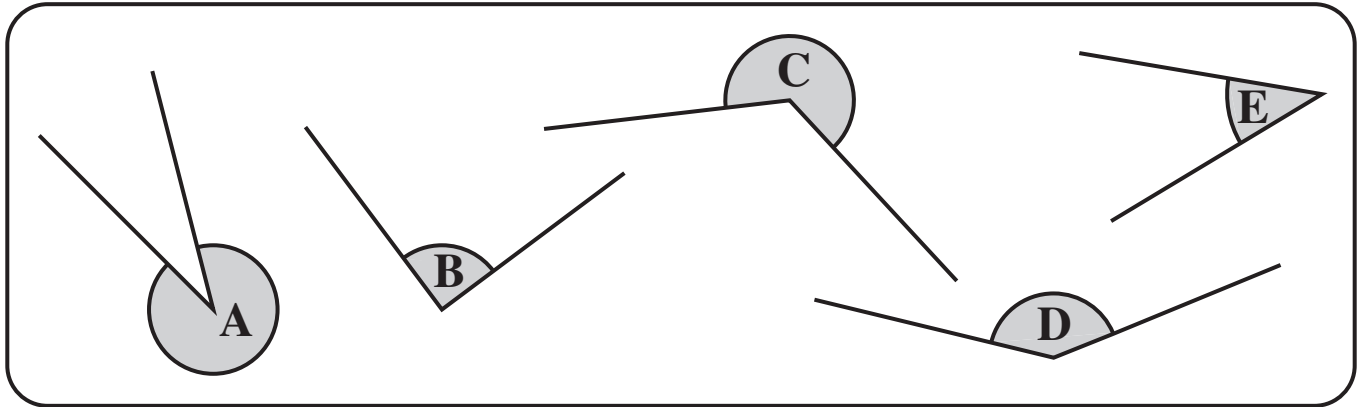> Multiply the height by the base then divide by 2.

height is
4 cm

base is 3 cm

Use the formula to work out the area of the triangle.

(d) _____ square centimetres

[2 marks]

8 Use the diagram below to complete the following sentences.

Angle _____ is the biggest.

Angle _____ is the smallest.

Angle _____ is a right angle.

Angle _____ is obtuse.

[4 marks]

9   Emma has 10 pens in her pencil case.

- 5 are black
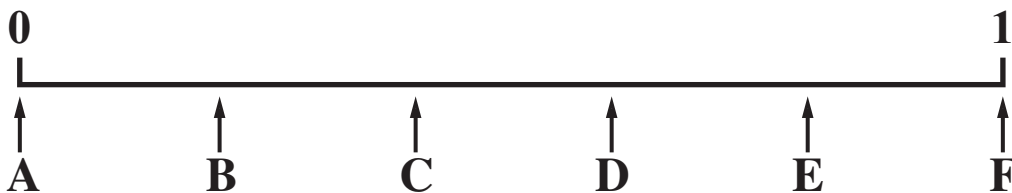- 2 are blue
- 2 are purple
- 1 is pink

She takes one pen at random and looks at the colour.

(a) Complete this sentence using a colour.

It is <u>EVENS</u> that she takes _____ .

[1 mark]

(b) Some probabilities are shown on this number line.

0   1
⌐───┐
↑   ↑   ↑   ↑   ↑   ↑
A   B   C   D   E   F

(i) Match the correct arrows with these statements.

The probability that she takes <u>PURPLE</u> is

shown by arrow _____ .
[1 mark]

The probability that she takes <u>GREEN</u> is

shown by arrow _____ .
[1 mark]

(ii) **Mark an arrow on the probability line to show the probability that she takes pink.**
Label your arrow P.
[1 mark]

OCR
RECOGNISING ACHIEVEMENT