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| Candidate Forename | | Candidate Surname | |
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| Centre Number | | | | | | Candidate Number | | | | |
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**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

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Geometrical instruments

Tracing paper (optional)

Electronic calculator

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

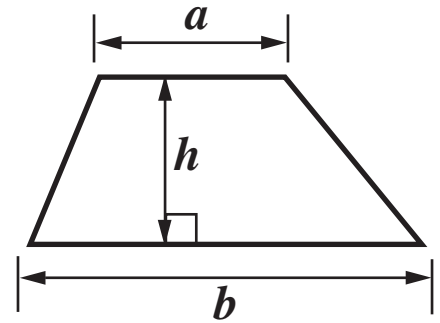
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show your 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

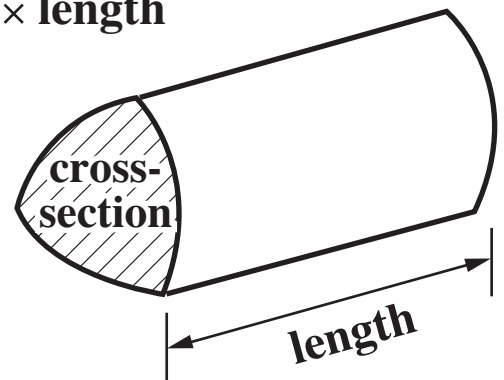
- The number of marks is given in brackets [] at the end of each question or part question.
- Section B starts with question 4.
- You are expected to use a calculator in Section B of this paper.
- The total number of marks for this Section is **25**.

FORMULAE SHEET

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



Volume of prism = (area of cross-section) \times length



4 Use this list of solids to answer these questions.

cone

cuboid

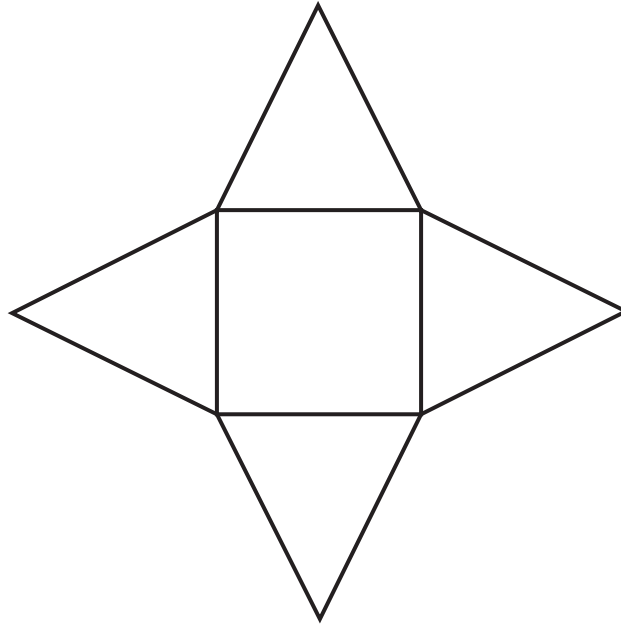
pyramid

cube

cylinder

sphere

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



[1 mark]

(a) _____

(b) This tower is made from two of the solids.

Write down the name of each solid.

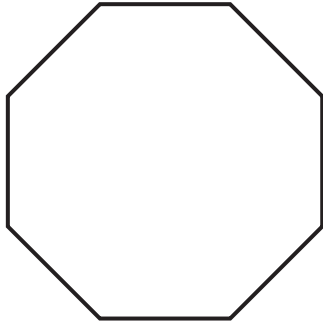


[1 mark]



[1 mark]

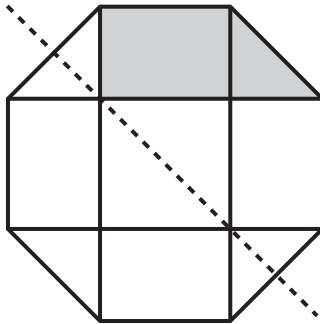
5 (a) (i) Write down the name of this shape.



(a)(i) _____

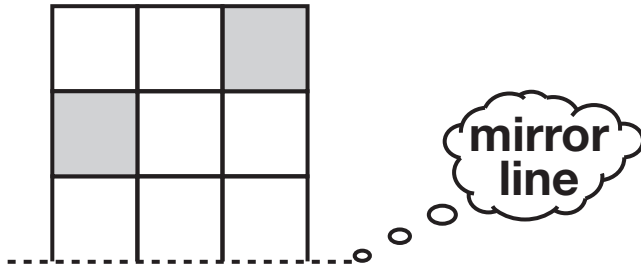
[1 mark]

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

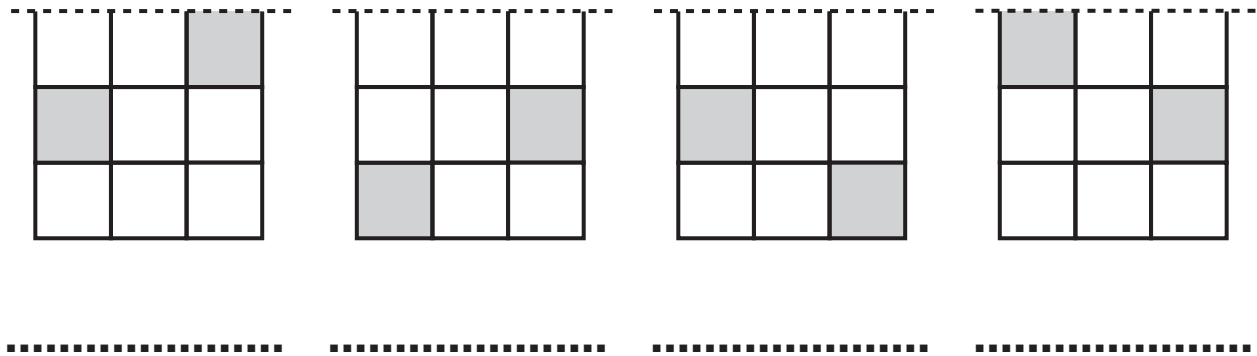


[1 mark]

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



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]

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

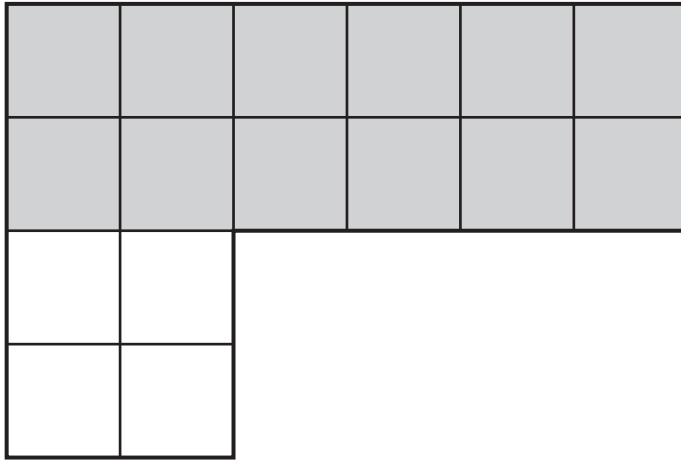
6 — — — — —

Explain how your number pattern works.

[1 mark]

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

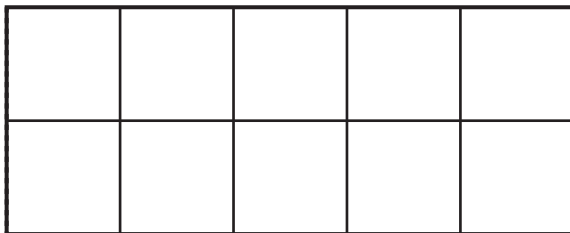
What fraction of this shape is shaded?



(a) _____

[1 mark]

(b) Nina wants to shade 0.3 of this shape.



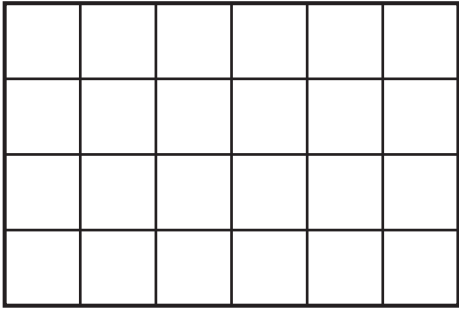
How many squares does she need to shade?
Explain how you worked out your answer.

She needs to shade _____ squares because _____

[2 marks]

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

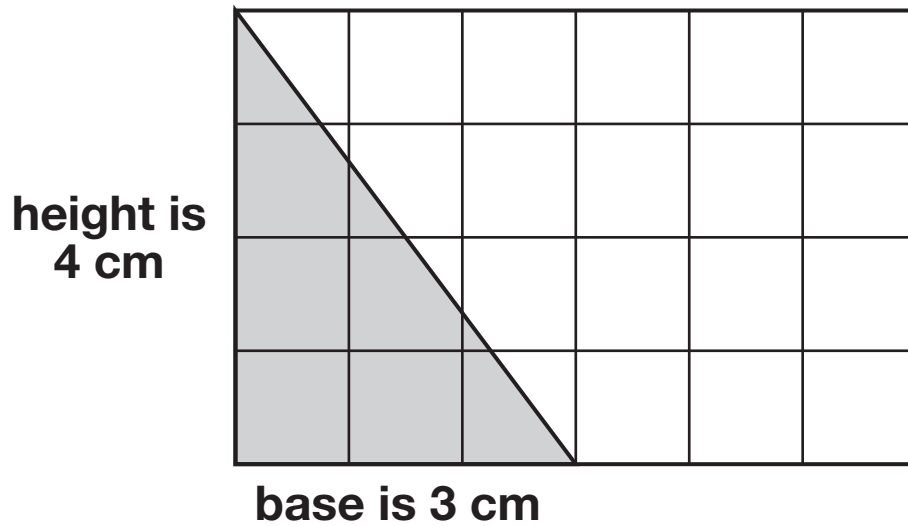
Draw a shape with an area of 8 square centimetres.



[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.

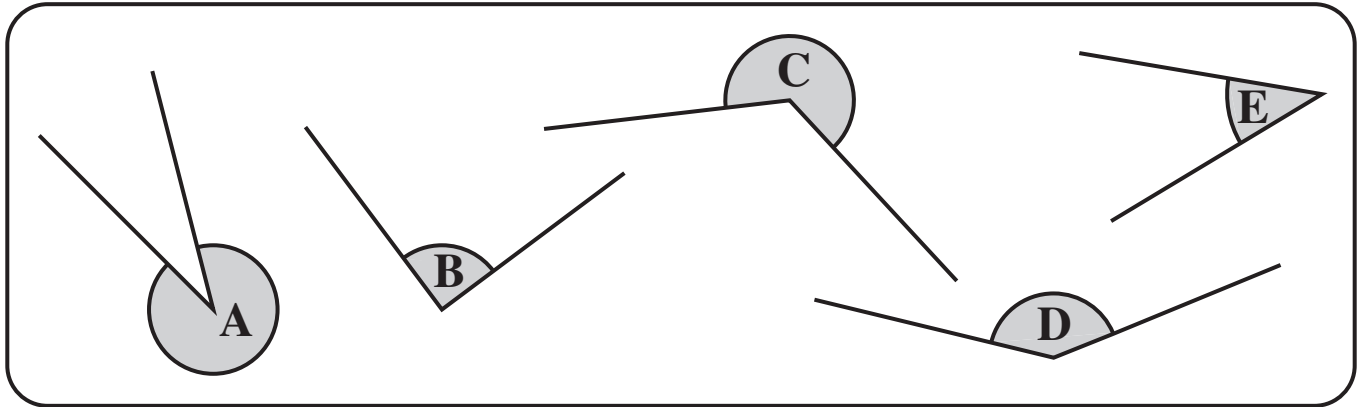


Use the formula to work out the area of the triangle.

[2 marks]

(d) _____ square centimetres

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

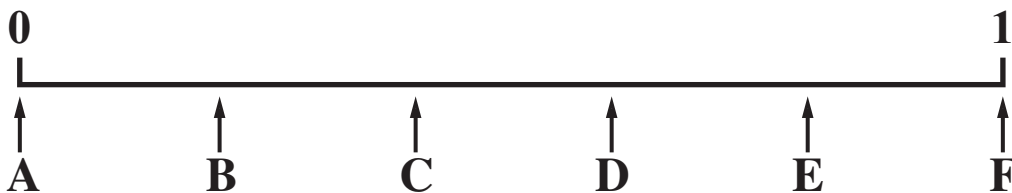
She takes one pen at random and looks at the colour.

(a) Complete this sentence using a colour.

It is EVENS that she takes _____ .

[1 mark]

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



(i) Match the correct arrows with these statements.

The probability that she takes PURPLE is

shown by arrow _____ .

[1 mark]

The probability that she takes GREEN 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]**



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