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Wednesday 11 January 2012 – Morning

GCSE MATHEMATICS C (GRADUATED ASSESSMENT)

B281A Terminal Paper – Section A (Foundation Tier)

B216610112

Candidates answer on the Question Paper.

OCR supplied materials:
None

Other materials required:
- Geometrical instruments
- Tracing paper (optional)
- Pie chart scale (optional)

Duration: 1 hour

B281A

Candidate forename		Candidate surname	

Centre number						Candidate number				

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions.
- Read each question carefully. Make sure 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.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

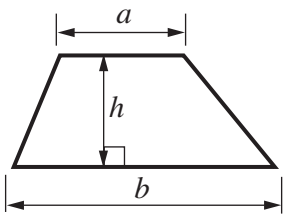
- The number of marks is given in brackets **[ ]** at the end of each question or part question.
- The total number of marks for this Section is **50**.
- This document consists of **16** pages. Any blank pages are indicated.

WARNING

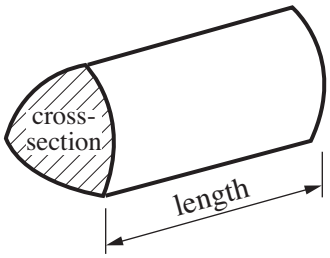
No calculator can be used for Section A of this paper

Formulae Sheet

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



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



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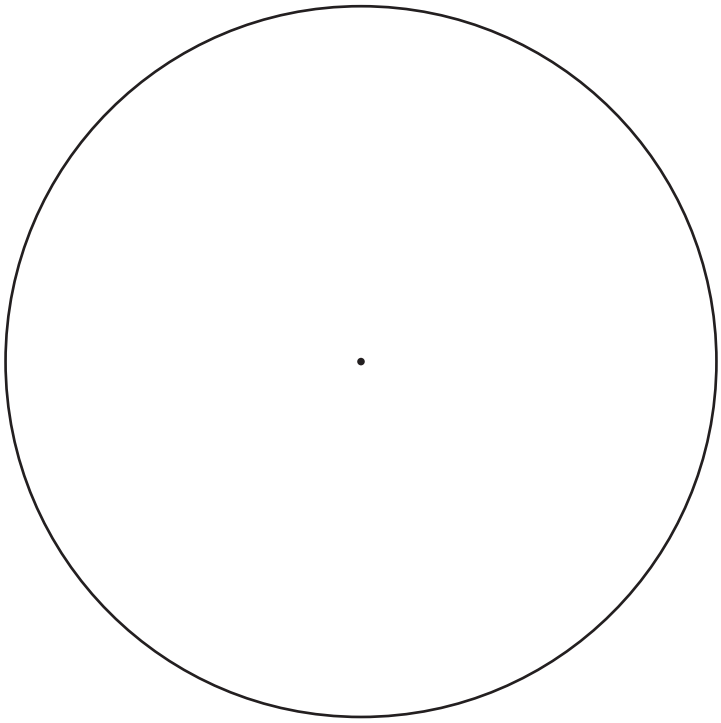
1 **(a)** Here is a circle.



(i) Measure the diameter of the circle.

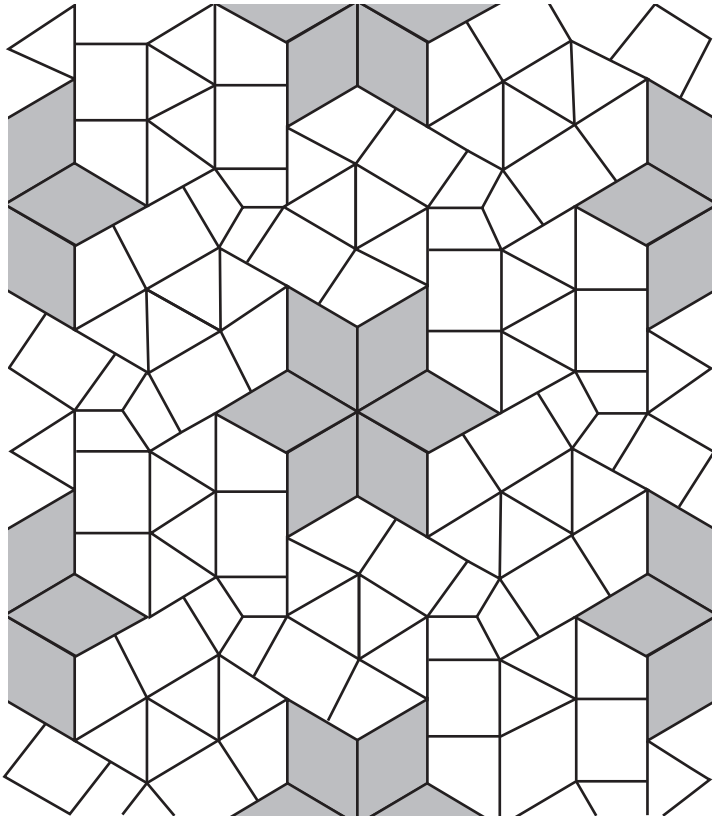
(a)(i) ..... cm **[1]**

(ii) Draw a tangent to the circle. **[1]**

(b) Draw a line which is perpendicular to the line below.

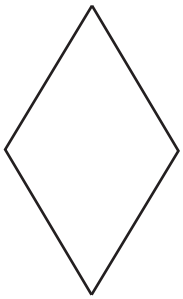
[1]

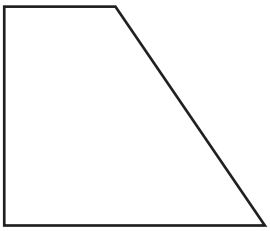
2 This is a design for a mosaic floor.



(a) Under each of the shapes below, write its special name.
Choose from this list.

trapezium	hexagon	pentagon
equilateral triangle	rhombus	parallelogram





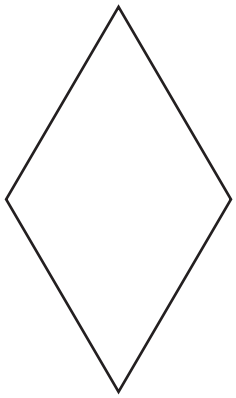
.... **[2]**

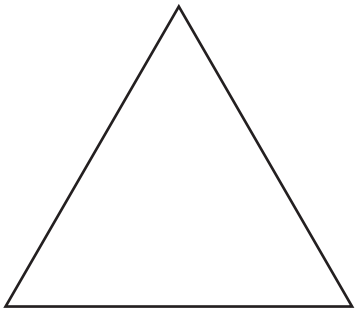
(b) Explain how you can tell that this shape is **not** a square.

.....

..... **[1]**

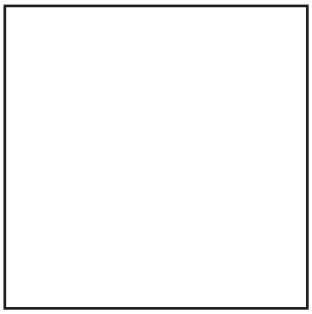
(c) On each shape below, draw **all** the lines of symmetry.





[2]

(d) Write down the order of rotational symmetry of this shape.



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

3 Here is a list of numbers.

5	14	44	11	13	9	27

(a) From the list of numbers, write down

(i) a multiple of 7,

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

(ii) a factor of 22,

(ii) .....**[1]**

(iii) a square number,

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

(iv) **all** the numbers that are prime.

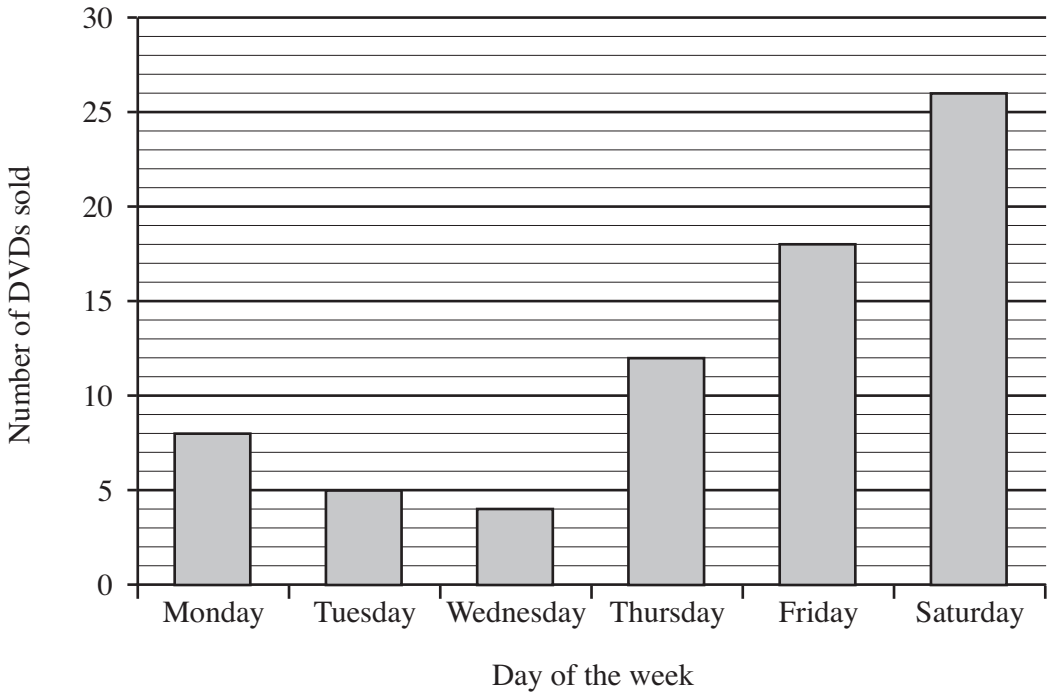
(iv) .....**[2]**

(b) Work out, showing your method clearly.

44×27

(b) .....**[3]**

4 This bar chart shows the number of DVDs sold by a shop each day of one week.



(a) On which day were exactly 12 DVDs sold?

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

(b) What was the greatest number of DVDs sold on one day?

(b) .....**[1]**

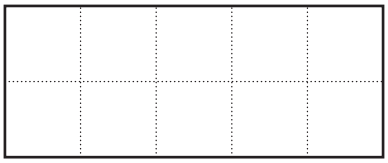
(c) How many **more** DVDs were sold on Friday than on Monday?

(c) .....**[1]**

(d) Find the range of the daily number of DVDs sold.

(d) .....**[2]**

5 **(a)** Shade $\frac{1}{5}$ of this shape.



[1]

(b) Work out $\frac{3}{4}$ of 60.

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

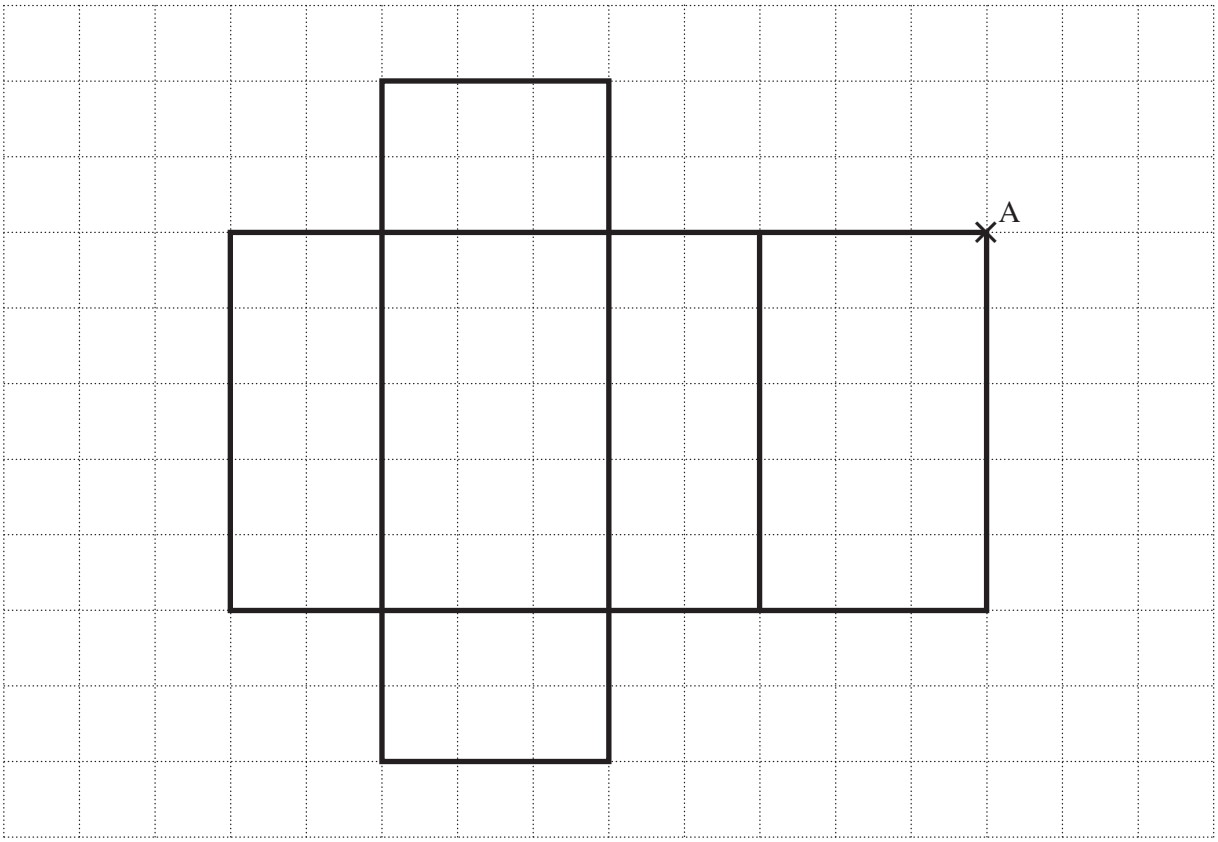
(c) Write these numbers in order of size, smallest first.
Show how you decide.

27% $\frac{1}{3}$ 0·3 $\frac{2}{10}$

.... **[3]**

smallest

6 This is a net of a cuboid.
It is drawn on a centimetre grid.



(a) The net is folded to make a cuboid.

Mark with a cross each of the other **two** vertices that meet vertex A. **[2]**

(b) Work out the volume of the cuboid.

(b) ..... cm^3 **[2]**

7 **(a)** The nth term of a sequence is $4n + 1$.

(i) Work out the first three terms of the sequence.

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

(ii) Is 32 a term in this sequence?
Give a reason for your answer.

..... because .....

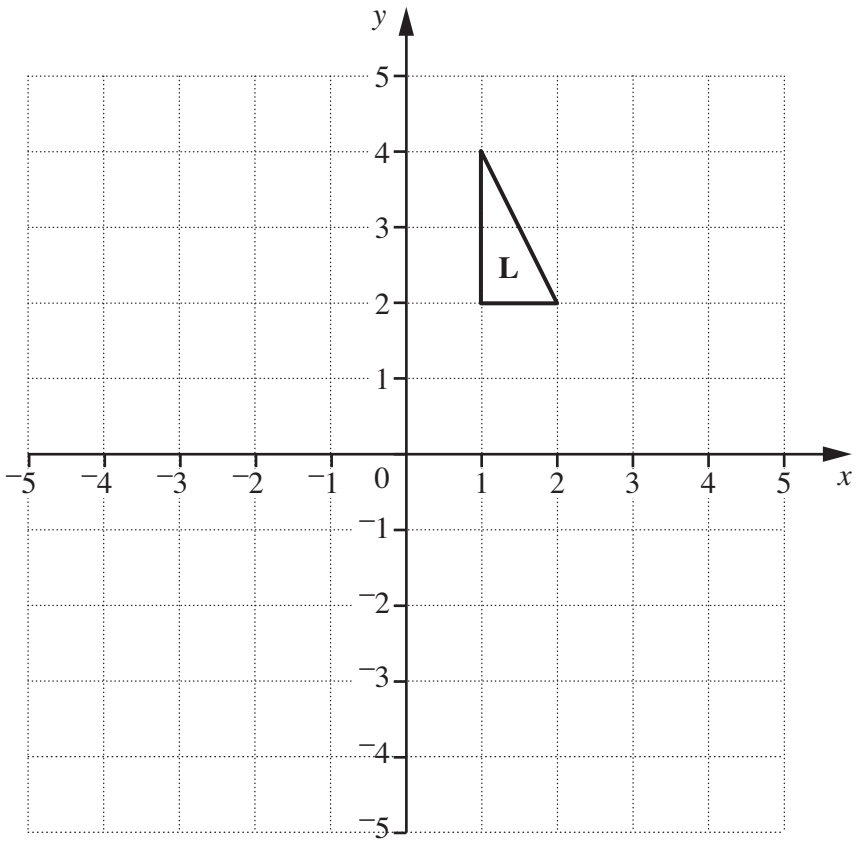
.....**[1]**

(b) Rearrange this formula to make a the subject.

$$C = \frac{a - 5}{2}$$

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

8 Triangle **L** is drawn on a coordinate grid.



(a) Reflect triangle **L** in the line $x = 0$.
Label the image **M**. **[2]**

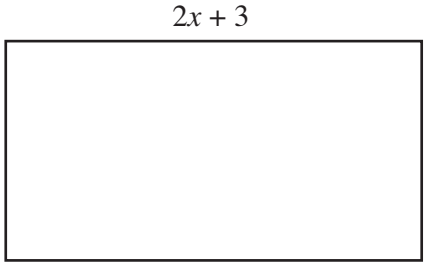
(b) Rotate **L** through 90° clockwise about (0, 1).
Label the image **N**. **[2]**

(c) Which type of single transformation maps **M** onto **N**?
Choose from this list.

Enlargement Reflection Rotation Translation

(c) ..... **[1]**

9 All lengths in this question are in centimetres.



Not to scale

The length of this rectangle is $2x + 3$ and the width is $x + 5$.
The perimeter of the rectangle is 43 cm.

(a) Show that $6x + 16 = 43$.

.....

.....

.....

..... **[1]**

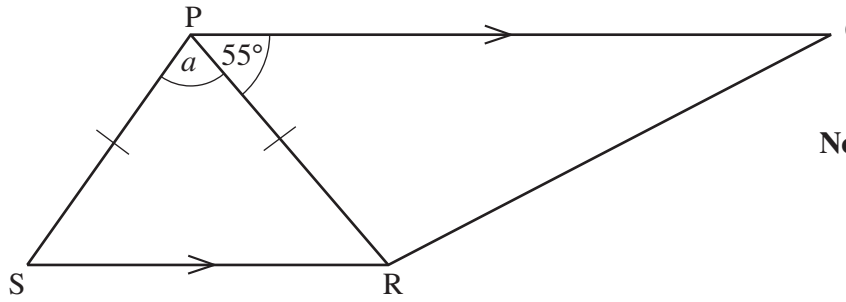
(b) Solve the equation $6x + 16 = 43$ to find the value of x.
Use this value to find the length and width of the rectangle.

(b) x = ...

length of rectangle = ... cm

width of rectangle = ... cm **[4]**

10 PQRS is a trapezium.
PQ is parallel to SR.
PS = PR and angle QPR = 55°.



Not to scale

Calculate angle a, giving reasons for your answer.

a = ...° because .....

.....

.....

.....

..... **[3]**

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