

Candidate forename		Candidate surname	
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Centre number						Candidate number				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GCSE**

**B281A**

**MATHEMATICS C  
(GRADUATED ASSESSMENT)**

**Terminal Paper – Section A (Foundation Tier)**

**WEDNESDAY 11 JANUARY 2012: Morning**

**DURATION: 1 hour**

**SUITABLE FOR VISUALLY IMPAIRED CANDIDATES**

**Candidates answer on the Question Paper.**

**OCR SUPPLIED MATERIALS:**

**None**

**OTHER MATERIALS REQUIRED:**

**Geometrical instruments**

**Tracing paper (optional)**

**Pie chart scale (optional)**

**WARNING**

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

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

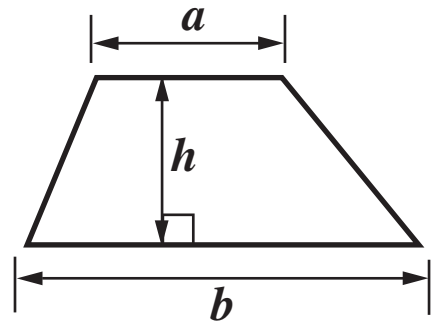
- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. HB pencil may be used for graphs and diagrams only.**
- **Answer ALL the questions.**
- **Read each question carefully. Make sure you know what you 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).**

## **INFORMATION FOR CANDIDATES**

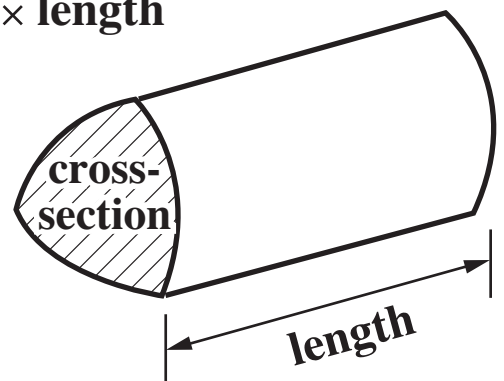
- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **The total number of marks for this Section is 50.**

# FORMULAE SHEET

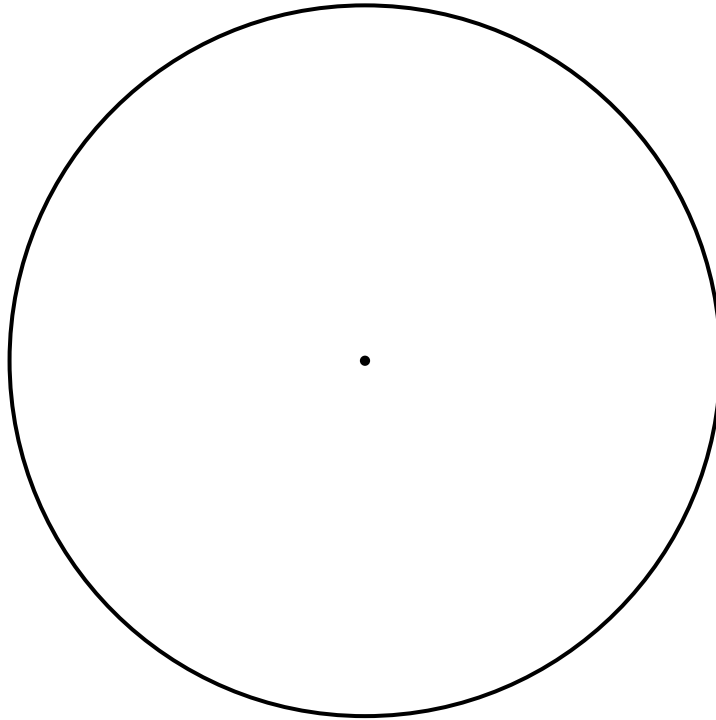
**Area of trapezium =  $\frac{1}{2} (a + b)h$**



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



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



**(i) Measure the diameter of the circle.**

**(a)(i)** \_\_\_\_\_ **cm [1]**

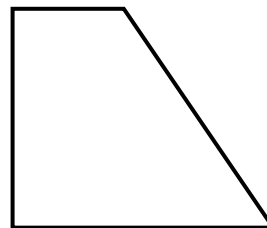
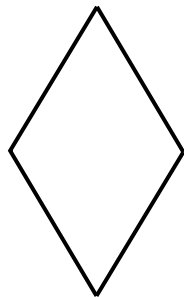
**(ii) Draw a tangent to the circle. [1]**

**(b) Draw a line which is perpendicular to the line below. [1]**



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

trapezium      hexagon      pentagon  
equilateral triangle      rhombus      parallelogram



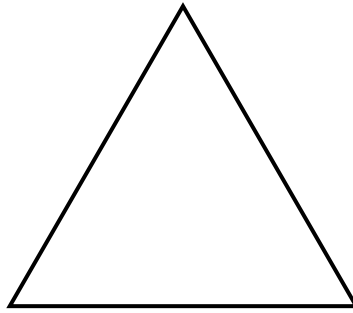
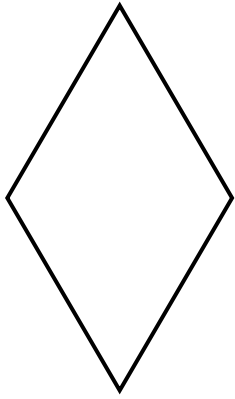
\_\_\_\_\_ [2]

- (b) Explain how you can tell that this shape is NOT a square.



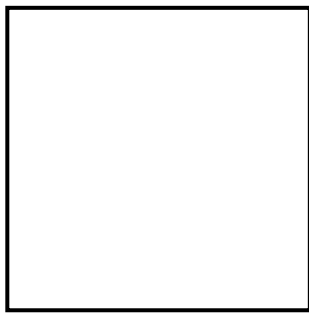
\_\_\_\_\_ [1]

**(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.**

- |          |           |           |           |           |          |           |
|----------|-----------|-----------|-----------|-----------|----------|-----------|
| <b>5</b> | <b>14</b> | <b>44</b> | <b>11</b> | <b>13</b> | <b>9</b> | <b>27</b> |
|----------|-----------|-----------|-----------|-----------|----------|-----------|

**(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]**

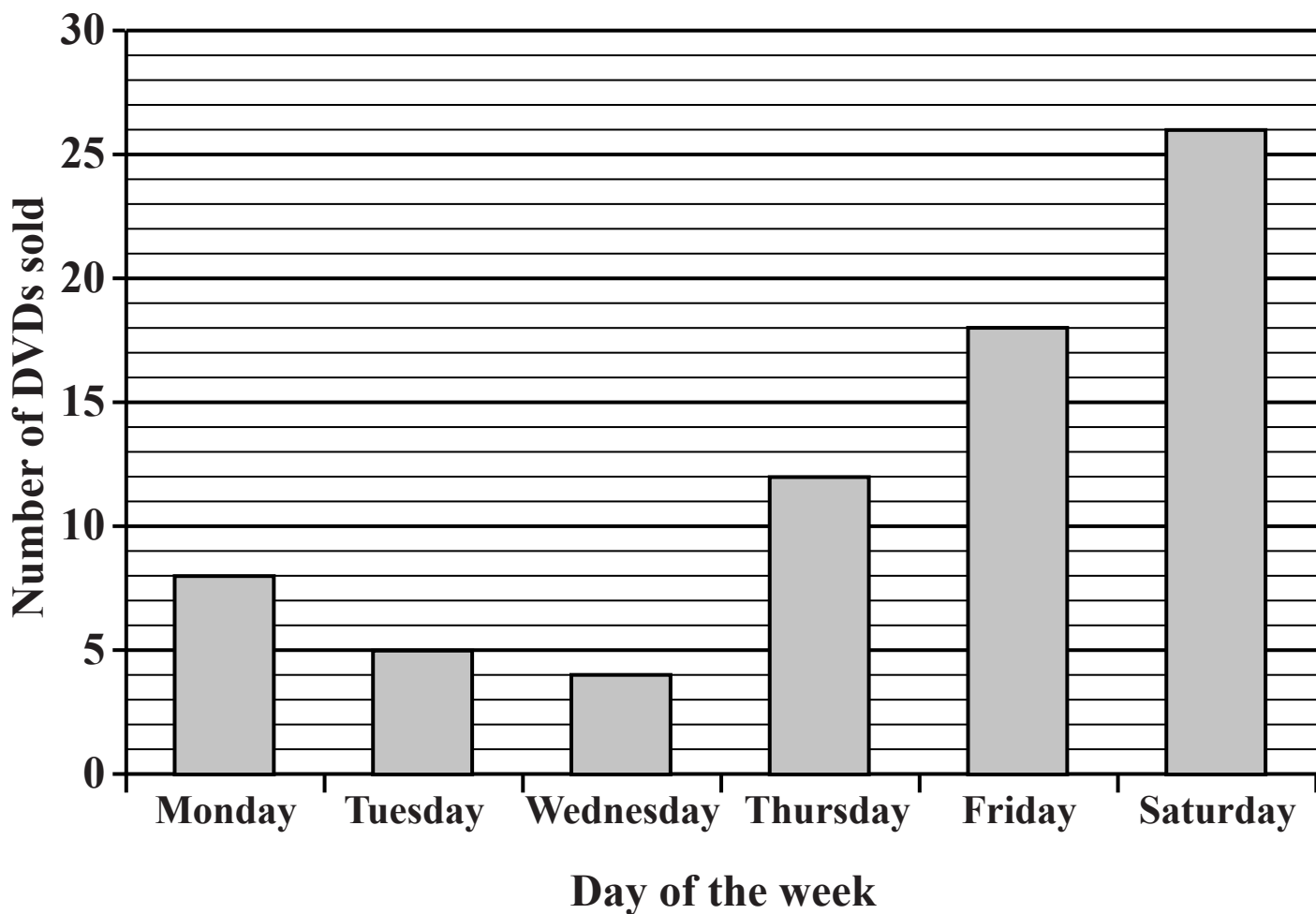


**(b) Work out, showing your method clearly.**

$$44 \times 27$$

**(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]

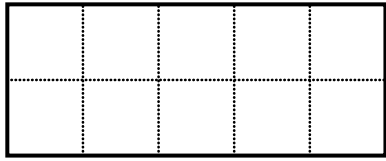
**(c) How many MORE DVDs were sold on Friday than on Monday?**

**(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%

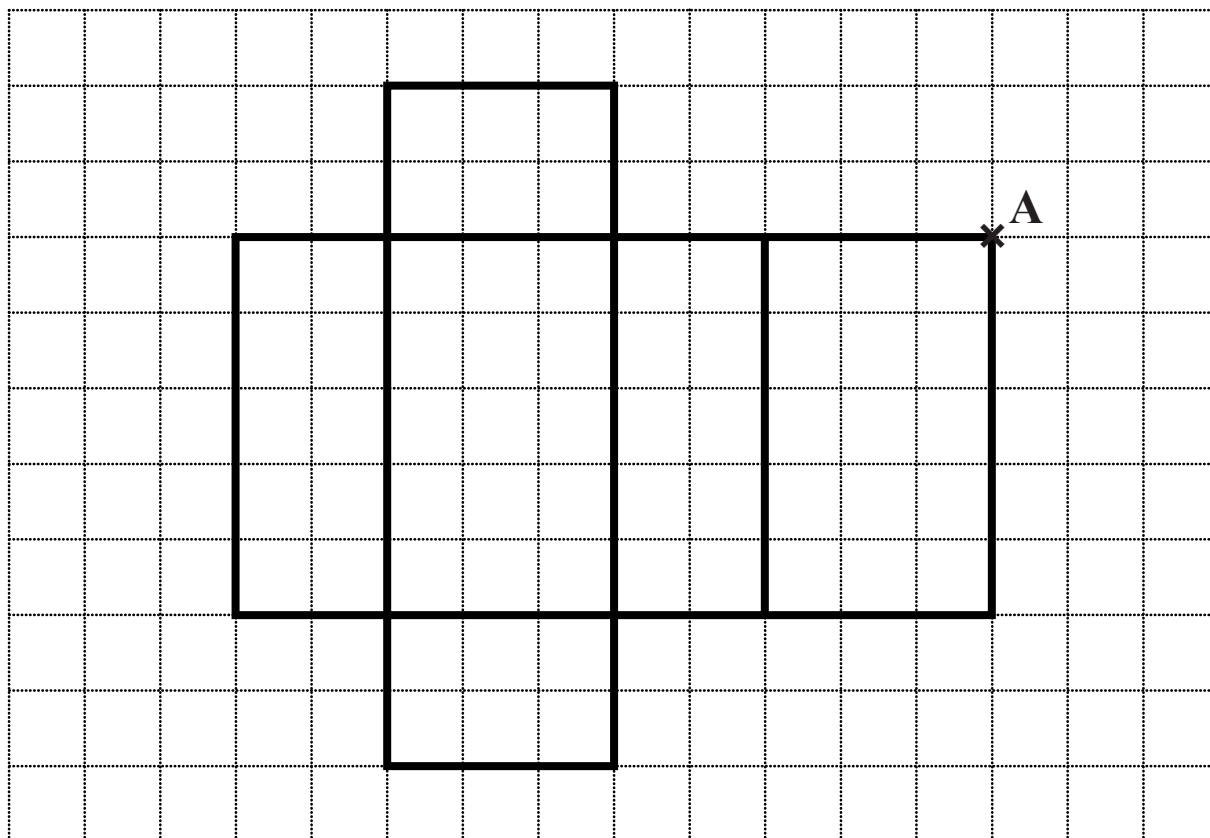
$\frac{1}{3}$

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) \_\_\_\_\_  $\text{cm}^3$  [2]

7 (a) The  $n$ th 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 \_\_\_\_\_

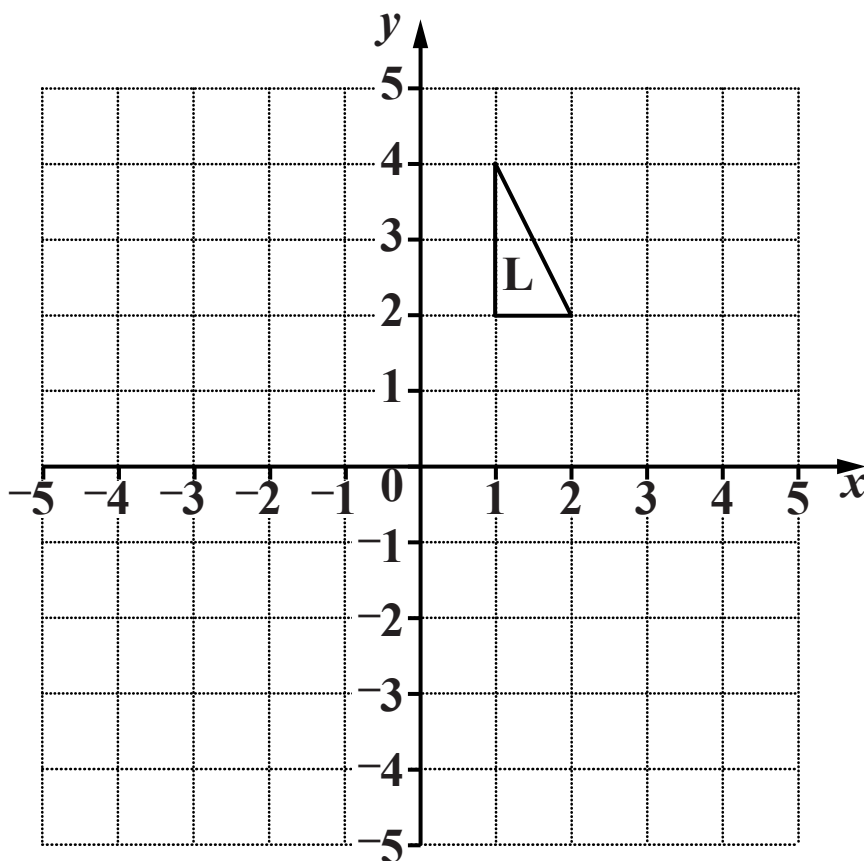
\_\_\_\_\_ [1]

(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  $90^\circ$  clockwise about  $(0, 1)$ .  
Label the image N. [2]
- (c) Which type of single transformation maps M onto N?  
Choose from this list.

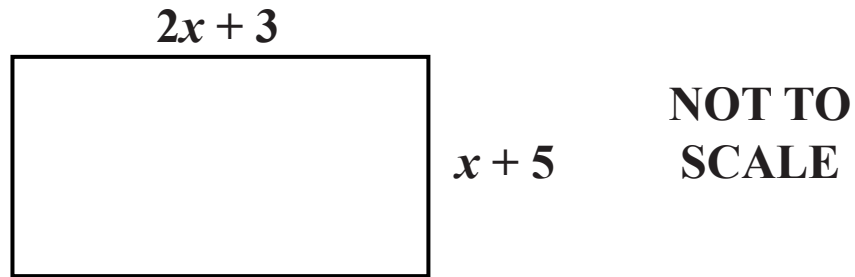
**Enlargement      Reflection      Rotation      Translation**

(c) \_\_\_\_\_ [1]

9 All lengths in this question are in centimetres.

The length of the rectangle below is  $2x + 3$  and the width is  $x + 5$ .

The perimeter of the rectangle is 43 cm.



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

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[1]



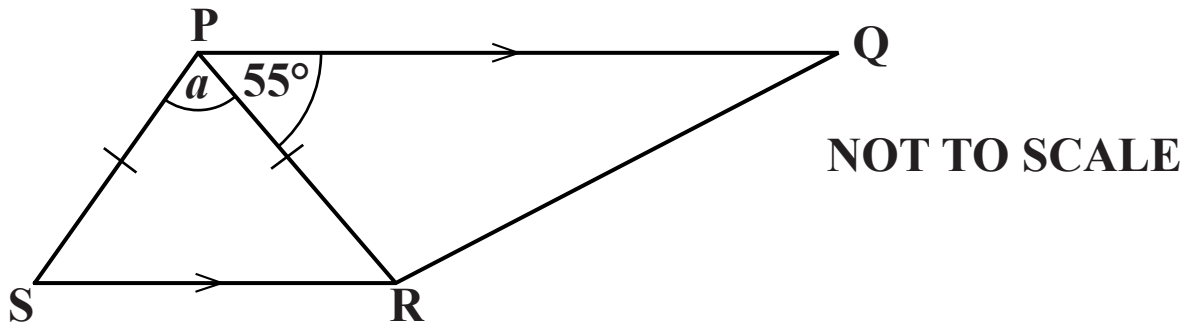
**(b) Solve the equation  $6x + 16 = 43$  to find the value of  $x$ .  
Use this value to find the length and width of the  
rectangle.**

**(b)  $x =$  \_\_\_\_\_**

**length of rectangle = \_\_\_\_\_ cm**

**width of rectangle = \_\_\_\_\_ cm [4]**

- 10 The trapezium below is labelled PQRS.  
PQ is parallel to SR.  
PS = PR and angle QPR =  $55^\circ$ .



Calculate angle  $a$ , giving reasons for your answer.

$a =$  \_\_\_\_\_  $^\circ$  because \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[3]

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