

Write your name here

Surname					Other names			
Centre Number					Candidate Number			
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**Pearson Edexcel**  
Level 1/Level 2 GCSE (9–1)

# Mathematics

## Area and perimeter

<b>Foundation Tier</b>	Paper Reference <b>1MA1</b>
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**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks
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### Instructions



- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
  - Answer **all** questions.
  - Answer the questions in the spaces provided – *there may be more space than you need.*
  - You must **show all your working**.
  - Diagrams are **NOT** accurately drawn, unless otherwise indicated.
  - If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be 3.142 unless the question instructs otherwise.

### Information


- The total mark for this paper is **53**. There are **14** questions.
- Questions have been arranged in an ascending order of mean difficulty, as found by all students in the June 2017–November 2019 examinations.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

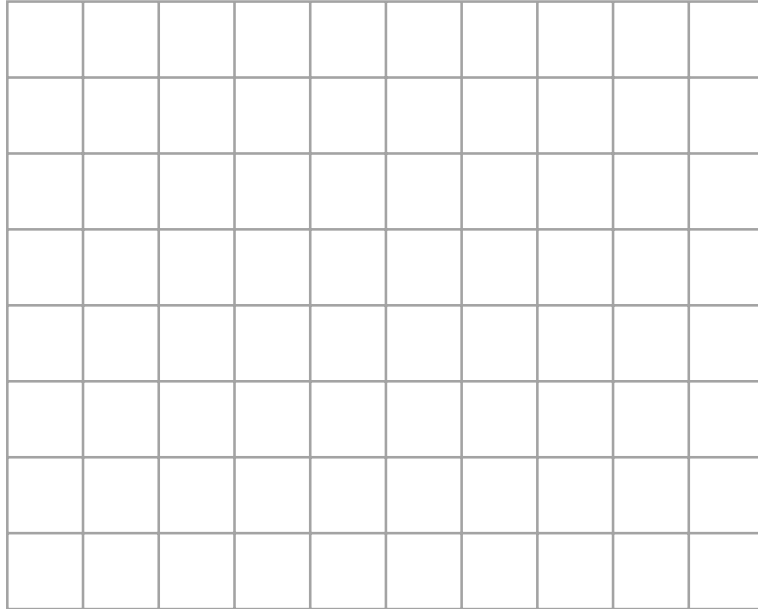
### Advice

## **1MA1 Foundation themed papers: Area and perimeter**

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

**1MA1 Foundation themed papers: Area and perimeter**

-  **1** The length of a rectangle is twice as long as the width of the rectangle.  
The area of the rectangle is  $32 \text{ cm}^2$ .  
Draw the rectangle on the centimetre grid.

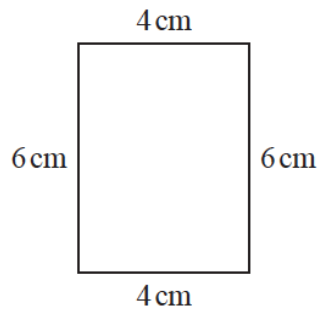


**(Total for Question 1 is 2 marks)**

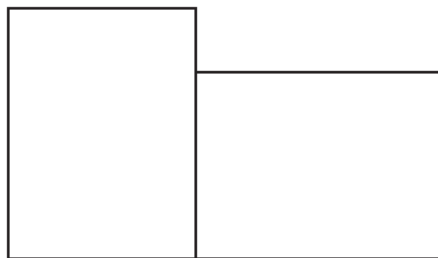
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**1MA1 Foundation themed papers: Area and perimeter**

2 Here is a rectangle.



The 6-sided shape below is made from two of these rectangles.



Work out the perimeter of this 6-sided shape.

..... cm

**(Total for Question 2 is 3 marks)**

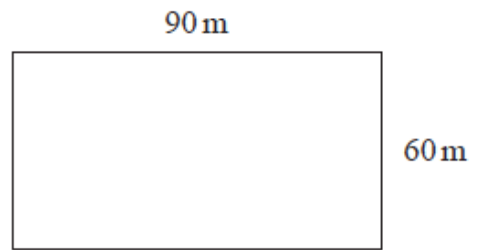
**1MA1 Foundation themed papers: Area and perimeter**

**3** A garden is in the shape of a rectangle 90 m by 60 m.

Flowers are grown in 40% of the garden.

The rest of the garden is grass.

Work out the area of the garden that is grass.



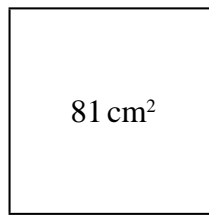
.....m<sup>2</sup>

**(Total for Question 3 is 4 marks)**

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**1MA1 Foundation themed papers: Area and perimeter**

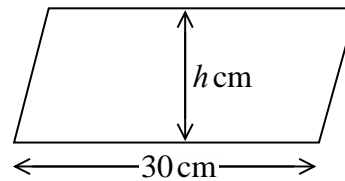
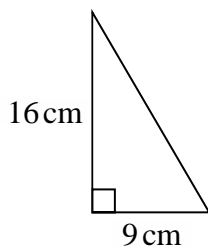
**4** A square has an area of  $81 \text{ cm}^2$



(a) Find the perimeter of the square.

.....cm  
(2)

The diagram shows a right-angled triangle and a parallelogram.



The area of the parallelogram is 5 times the area of the triangle.

The perpendicular height of the parallelogram is  $h$  cm.

(b) Find the value of  $h$ .

$h =$  .....  
(3)

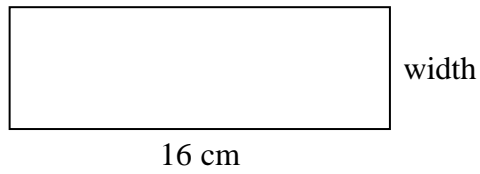
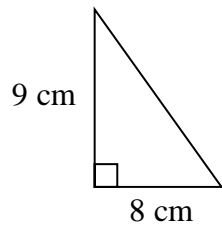
**(Total for Question 4 is 5 marks)**

**1MA1 Foundation themed papers: Area and perimeter**



5

Here are a triangle and a rectangle.



The area of the rectangle is 6 times the area of the triangle.

Work out the width of the rectangle.

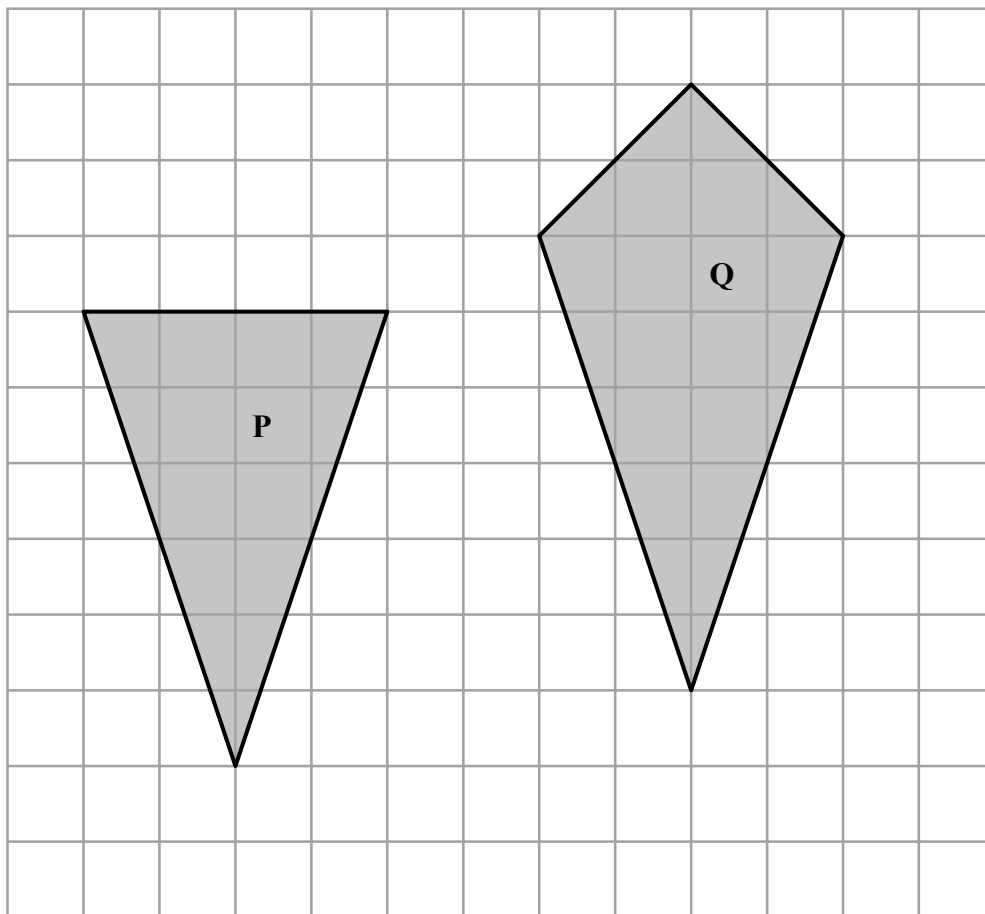
..... cm

**(Total for Question 5 is 4 marks)**

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**1MA1 Foundation themed papers: Area and perimeter**

**6** The diagram shows two shapes drawn on a centimetre grid.



(a) Find the area of shape **P**.

.....  
(2)

(b) Write down the mathematical name of quadrilateral **Q**.

.....  
(1)

**(Total for Question 6 is 3 marks)**

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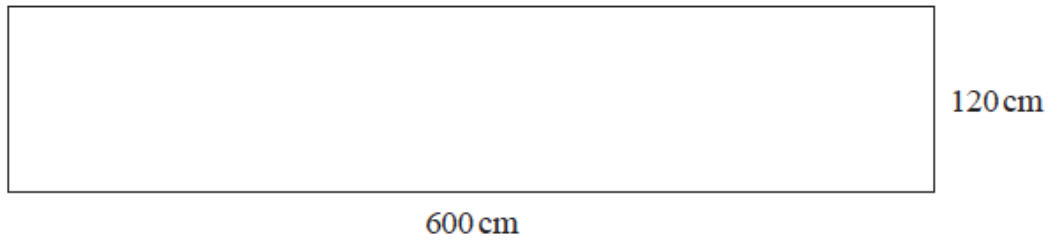


**1MA1 Foundation themed papers: Area and perimeter**



7

The diagram shows a rectangular garden path.



Wasim is going to cover the path with paving stones.

Each paving stone is a square of side 30 cm.

Each paving stone costs £2.50

Wasim has £220 to spend on paving stones.

Show that he has enough money to buy all the paving stones he needs.

**(Total for Question 7 is 4 marks)**

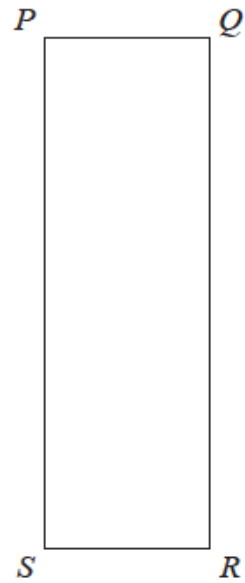
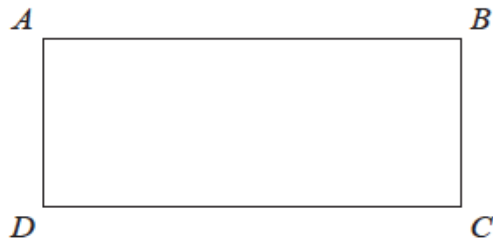
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1MA1 Foundation themed papers: Area and perimeter



8

Here are two rectangles.



$QR = 10$  cm

$BC = PQ$

The perimeter of  $ABCD$  is 26 cm

The area of  $PQRS$  is  $45$  cm<sup>2</sup>

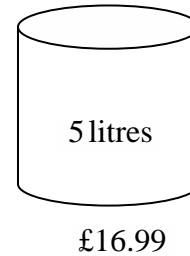
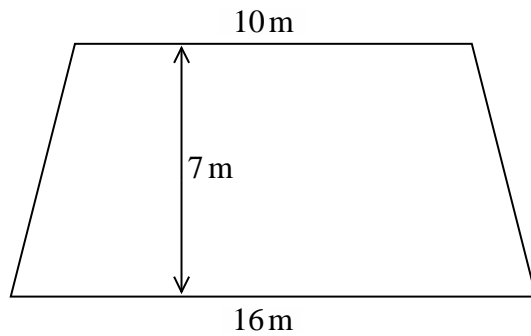
Find the length of  $AB$ .

..... cm

**(Total for Question 8 is 4 marks)**

**1MA1 Foundation themed papers: Area and perimeter**

- 9 The diagram shows a floor in the shape of a trapezium.



John is going to paint the floor.

Each 5 litre tin of paint costs £16.99

1 litre of paint covers an area of  $2\text{m}^2$

John has £160 to spend on paint.

Has John got enough money to buy all the paint he needs?

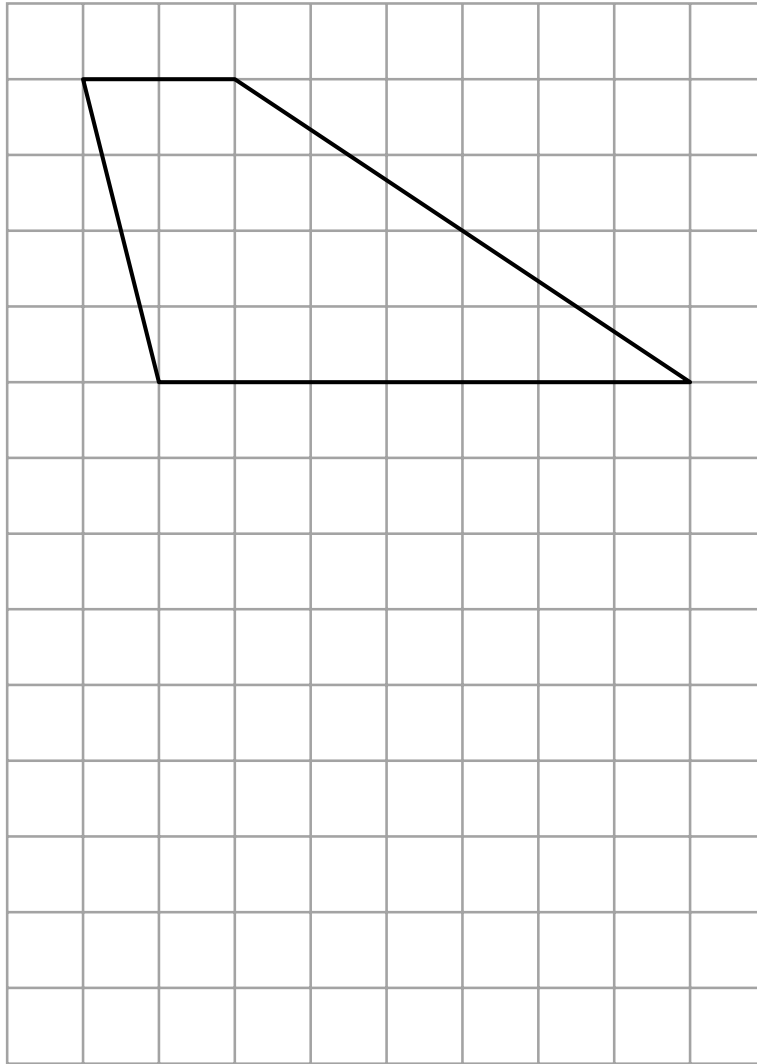
You must show how you get your answer.

**(Total for Question 9 is 5 marks)**

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**1MA1 Foundation themed papers: Area and perimeter**

**10** Here is a trapezium drawn on a centimetre grid.

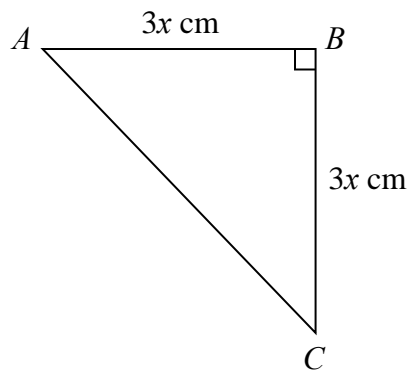


On the grid, draw a triangle equal in area to this trapezium.

**(Total for Question 10 is 2 marks)**

**1MA1 Foundation themed papers: Area and perimeter**

- 11**  $ABC$  is an isosceles right-angled triangle.



The area of the triangle is  $162 \text{ cm}^2$

Work out the value of  $x$ .

$x = \dots\dots\dots$

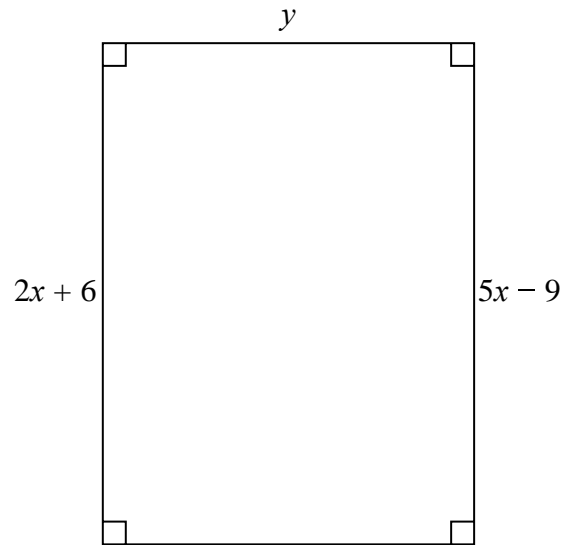
**(Total for Question 11 is 3 marks)**

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**1MA1 Foundation themed papers: Area and perimeter**



**12** Here is a rectangle.



All measurements are in centimetres.

The area of the rectangle is  $48 \text{ cm}^2$ .

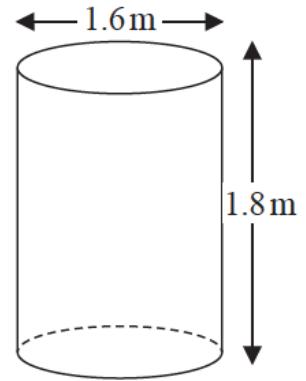
Show that  $y = 3$

**(Total for Question 12 is 4 marks)**

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**1MA1 Foundation themed papers: Area and perimeter**

- 13** Jeremy has to cover 3 tanks completely with paint.  
Each tank is in the shape of a cylinder with a top and a bottom.  
The tank has a diameter of 1.6 m and a height of 1.8 m.  
Jeremy has 7 tins of paint.  
Each tin of paint covers  $5 \text{ m}^2$   
Has Jeremy got enough paint to cover completely the 3 tanks?  
You must show how you get your answer.

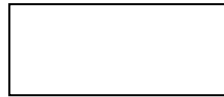


**(Total for Question 13 is 5 marks)**

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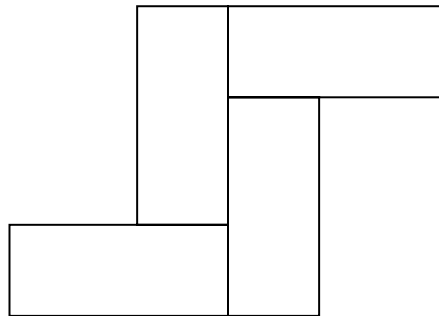
**1MA1 Foundation themed papers: Area and perimeter**

**14** Here is a rectangle.



The length of the rectangle is 7 cm longer than the width of the rectangle.

4 of these rectangles are used to make this 8-sided shape.



The perimeter of the 8-sided shape is 70 cm.

Work out the area of the 8-sided shape.

..... cm<sup>2</sup>

**(Total for Question 14 is 5 marks)**

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**TOTAL MARKS FOR PAPER: 53**