Name: _____

GCSE (1 – 9)

Area and Perimeter

Instructions

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

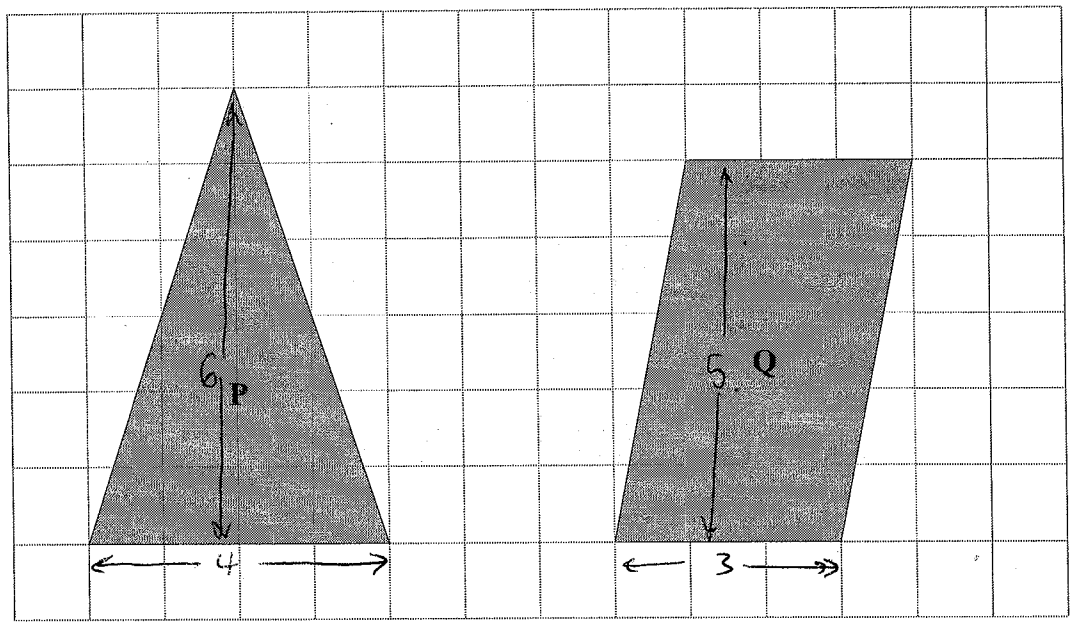
Information

- 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

- 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

1 The diagram shows two shapes on a centimetre grid.



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

$\frac{\text{base} \times \text{height}}{2}$ $\frac{4 \times 6}{2} = 12 \text{ cm}^2$

12 cm²

(b) Write down the mathematical name for shape **Q**.

parallelogram

(c) Find the area of shape **Q**.

base × height

$3 \times 5 = 15 \text{ cm}^2$

15 cm²

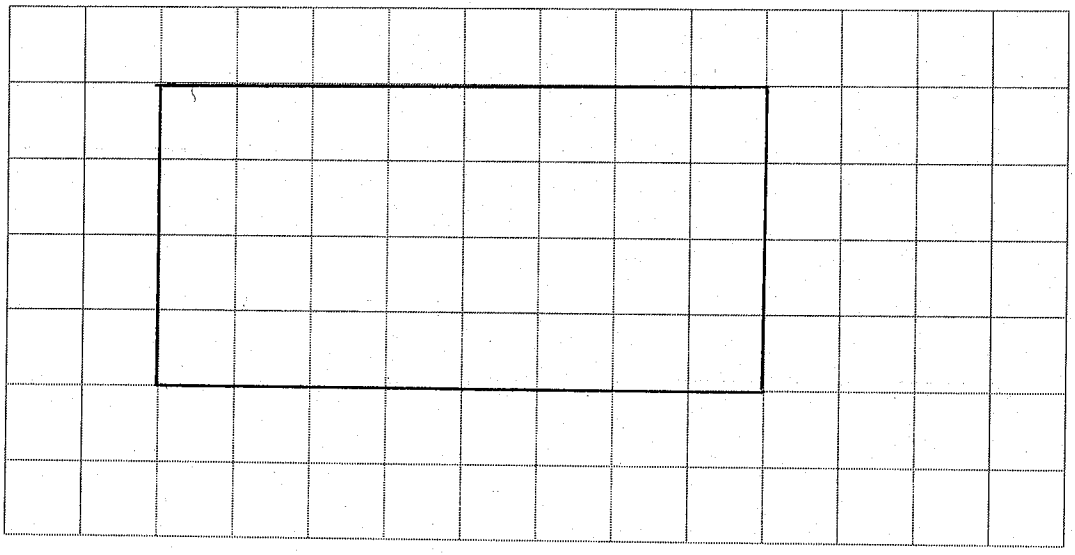
(Total for question 1 is 3 marks)

2 The length of a rectangle is two times the width of the rectangle.
The perimeter of the rectangle is 24 cm.

Draw the rectangle on the centimetre grid.

width	length	perimeter
2	4	12
3	6	18
4	8	24 ✓

4 x 8



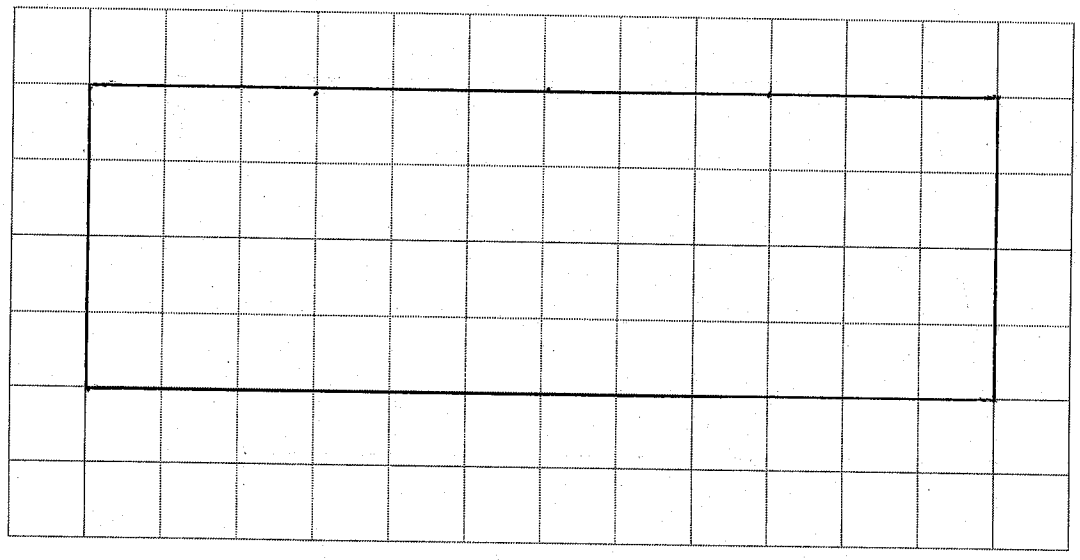
(Total for question 2 is 2 marks)

3 The length of a rectangle is three times the width of the rectangle.
The area of the rectangle is 48 cm^2.

Draw the rectangle on the centimetre grid.

width	length	area
2	6	12
3	9	27
4	12	48 ✓

4 x 12



(Total for question 3 is 2 marks)

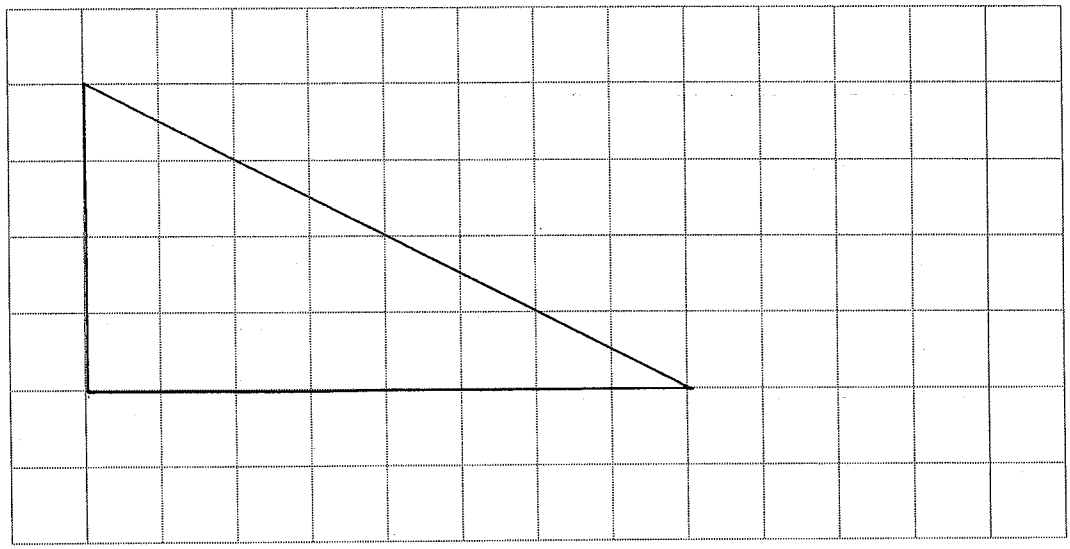
4 The base of a triangle twice the height of the triangle.
The area of a triangle is 16 cm^2.

Draw the triangle on the centimetre grid.

$\frac{\text{base} \times \text{height}}{2} = 16$

base x height = 32

height	base	base x height ~~area~~
2	4	8
3	6	18
4	8	32 ✓

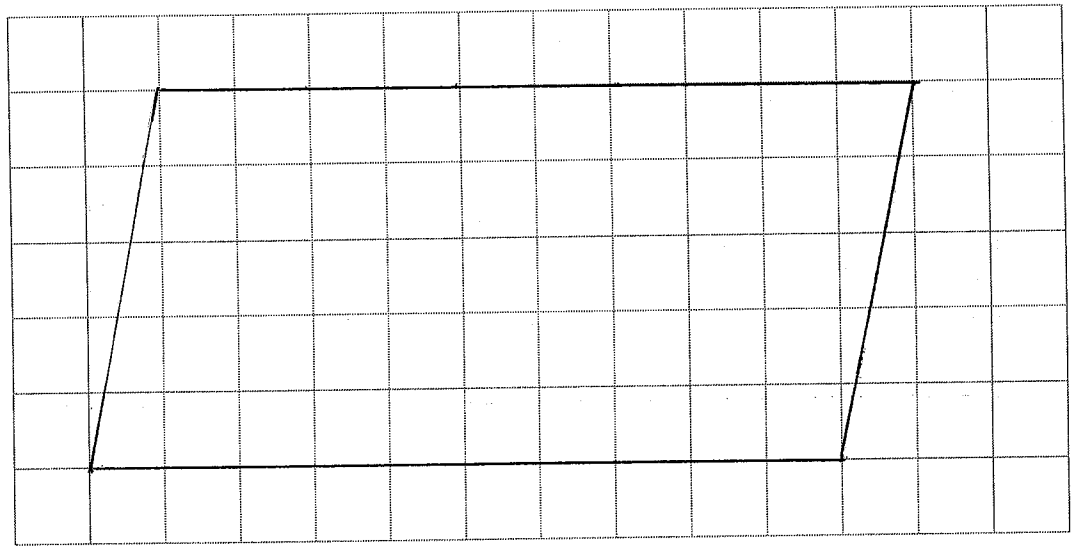


(Total for question 4 is 2 marks)

5 The base of a parallelogram twice the perpendicular height of the parallelogram.
The area of the parallelogram is 50 cm^2.

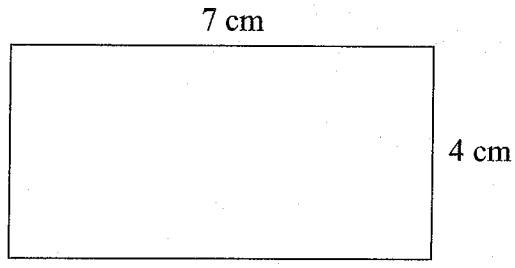
Draw the parallelogram on the centimetre grid.

base	height	area
6	3	18
8	4	32
10	5	50 ✓

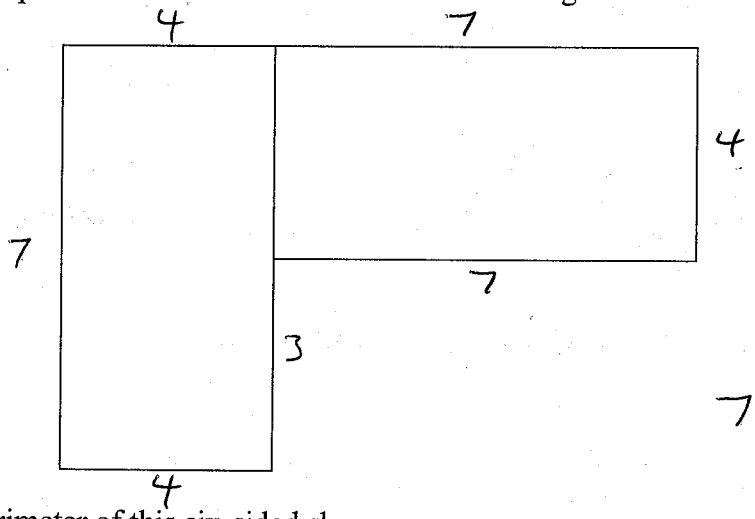


(Total for question 5 is 2 marks)

6 Here is a rectangle.



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



7 − 4 = 3

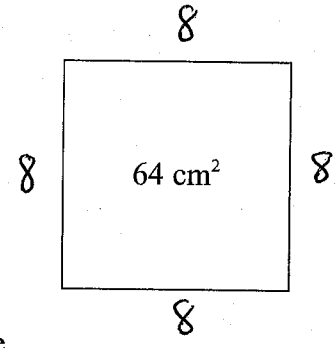
Work out the perimeter of this six-sided shape.

7 + 4 + 7 + 4 + 7 + 3 + 4

36 cm

(Total for question 6 is 3 marks)

7 A square has an area of 64 cm^2.



8 × 8 = 64

Find the perimeter of the square.

4 × 8 = 32

32 cm

(Total for question 7 is 2 marks)

8 A square has a perimeter of 36 cm.

Find the area of the square.

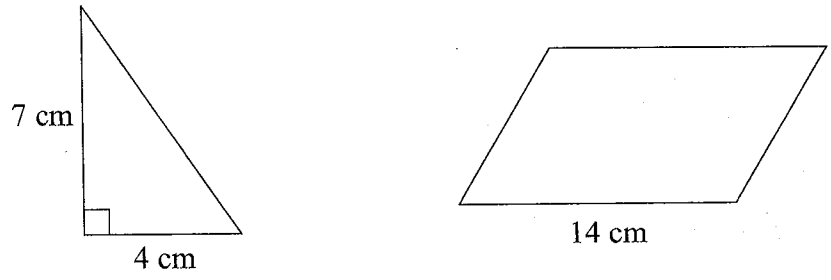
$\frac{36}{4} = 9$

$9 \times 9 = 81$

81 cm^2

(Total for question 8 is 2 marks)

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



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

The perpendicular height of the parallelogram is h.

Find the value of h.

Area of triangle $= \frac{4 \times 7}{2} = 14$ cm^2

$4 \times 14 = 56$ cm^2

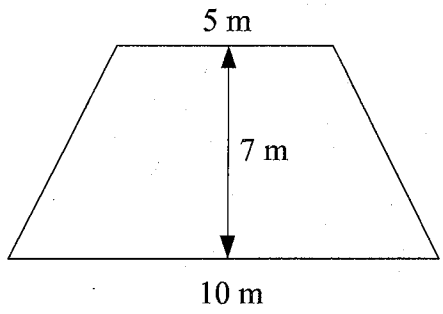
$14 \times h = 56$

$h = \frac{56}{14} = \frac{28}{7} = 4$

$h =$ 4

(Total for question 9 is 3 marks)

10 The diagram shows a garden is in the shape of a trapezium.



Find the area of the garden.

$\frac{1}{2}(a+b) \times h$

$\frac{1}{2}(5+10) \times 7$

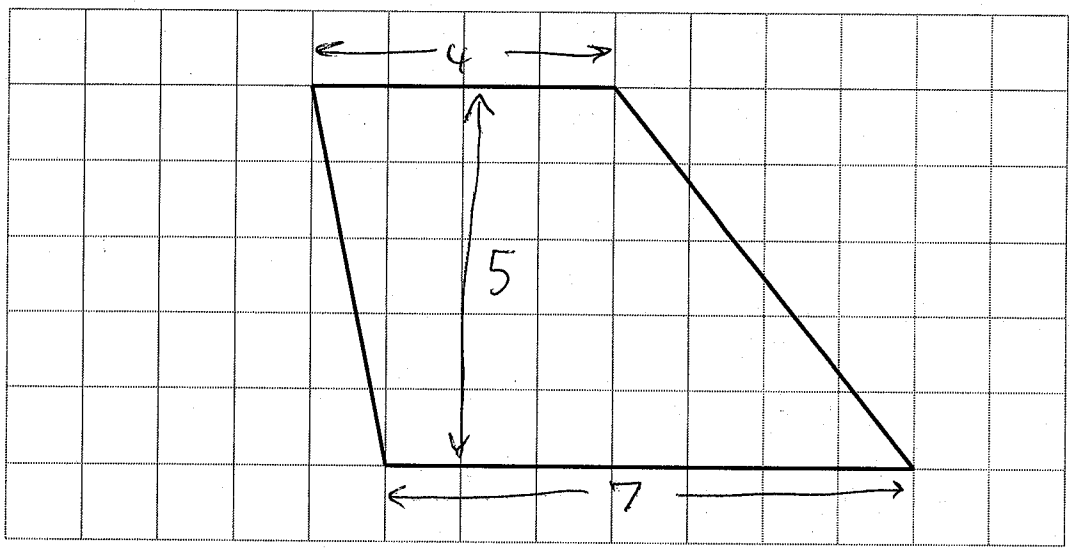
$\frac{1}{2}(15) \times 7$

7.5×7

52.5 m^2

(Total for question 10 is 3 marks)

11 Here is a trapezium drawn on a centimetre grid.



Find the area of the trapezium.

$\frac{1}{2}(4+7) \times 5$

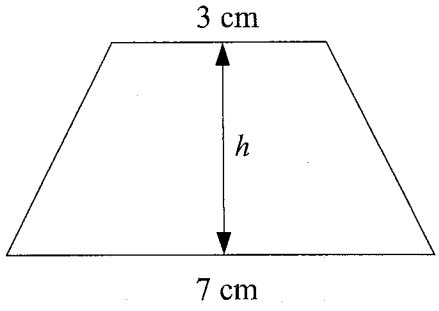
$\frac{1}{2}(11) \times 5$

5.5×5

27.5 cm^2

(Total for question 11 is 2 marks)

12 The diagram shows a trapezium with an area of 30 cm^2 and a perpendicular height h cm^2.



Find the value of h.

$\frac{1}{2}(3+7) \times h = 30$

$\frac{1}{2}(10) \times h = 30$

$5 \times h = 30$

$h = 6$

$h =$ 6 [cm]

(Total for question 12 is 2 marks)

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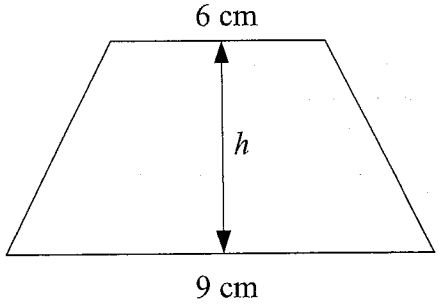
13 The diagram shows a trapezium with an area of 45 cm^2 and a perpendicular height h cm^2.



Find the value of h.

$\frac{1}{2}(6+9) \times h = 45$

$\frac{1}{2}(15) \times h = 45$

$7.5 h = 45$

$h = \frac{45}{7.5} = 6$

$h =$ 6 [cm]

(Total for question 13 is 2 marks)