GCSE · Edexcel · Maths

2 hours 30 questions

Exam Questions

Area & Perimeter

Perimeter / Area / Adding & Subtracting Areas / Problem Solving with Areas

Easy (9 questions)	/19
Medium (14 questions)	/52
Hard (7 questions)	/22
Total Marks	**/93**

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Easy Questions

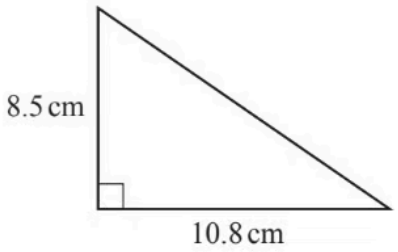
1 The area of a square is 64 cm^2.

Work out the length of one side of the square.

..... cm

(1 mark)

2



NOT TO SCALE

The diagram shows a right-angled triangle.

Calculate the area.

..... cm^2

(2 marks)

3 Soraya makes rectangular flags.

i) On the rectangle, draw the lines of symmetry.

[2]

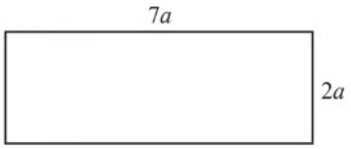
ii) Each flag measures 1.2m by 1.8m.

Calculate the area of one flag.

..... m^2 [2]

(2 marks)

4 The diagram shows a rectangle with length $7a$ and width $2a$.



NOT TO SCALE

Write an expression, in its simplest form, for

i) the perimeter,

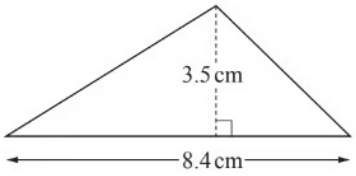
[2]

ii) the area.

[2]

(4 marks)

5



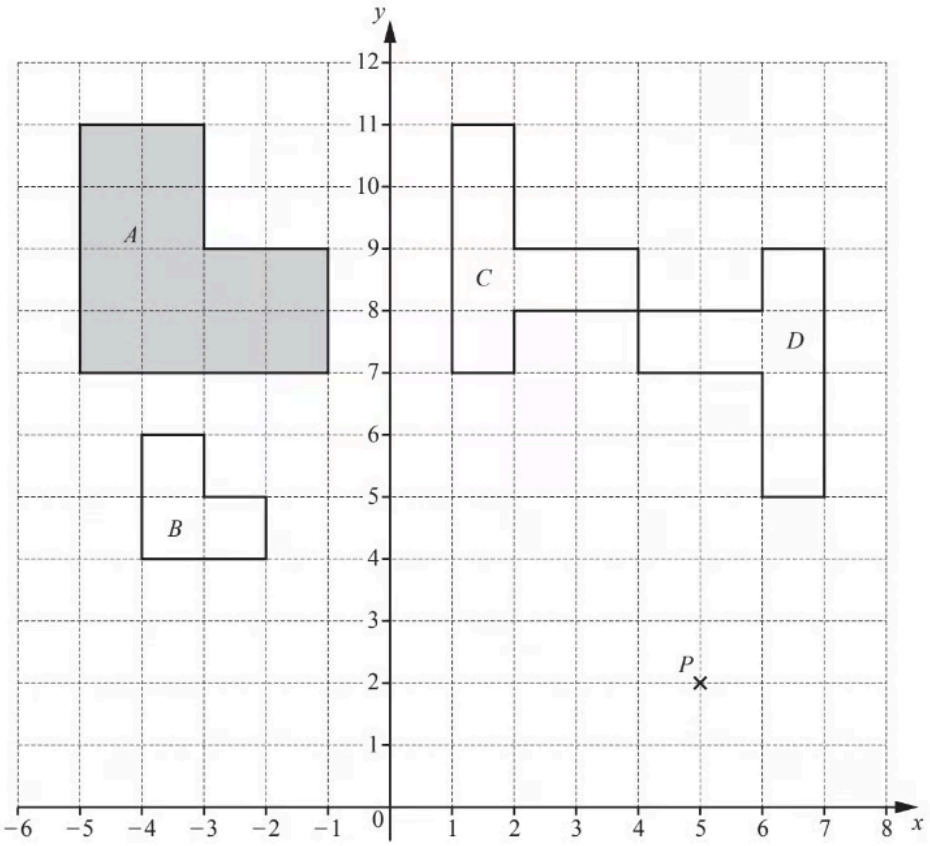
NOT TO SCALE

Calculate the area of this triangle.

..... cm^2

(2 marks)

6 The diagram shows four shapes A, B, C and D and a point P on a 1cm^2 grid.



Find

i) the perimeter of shape A,

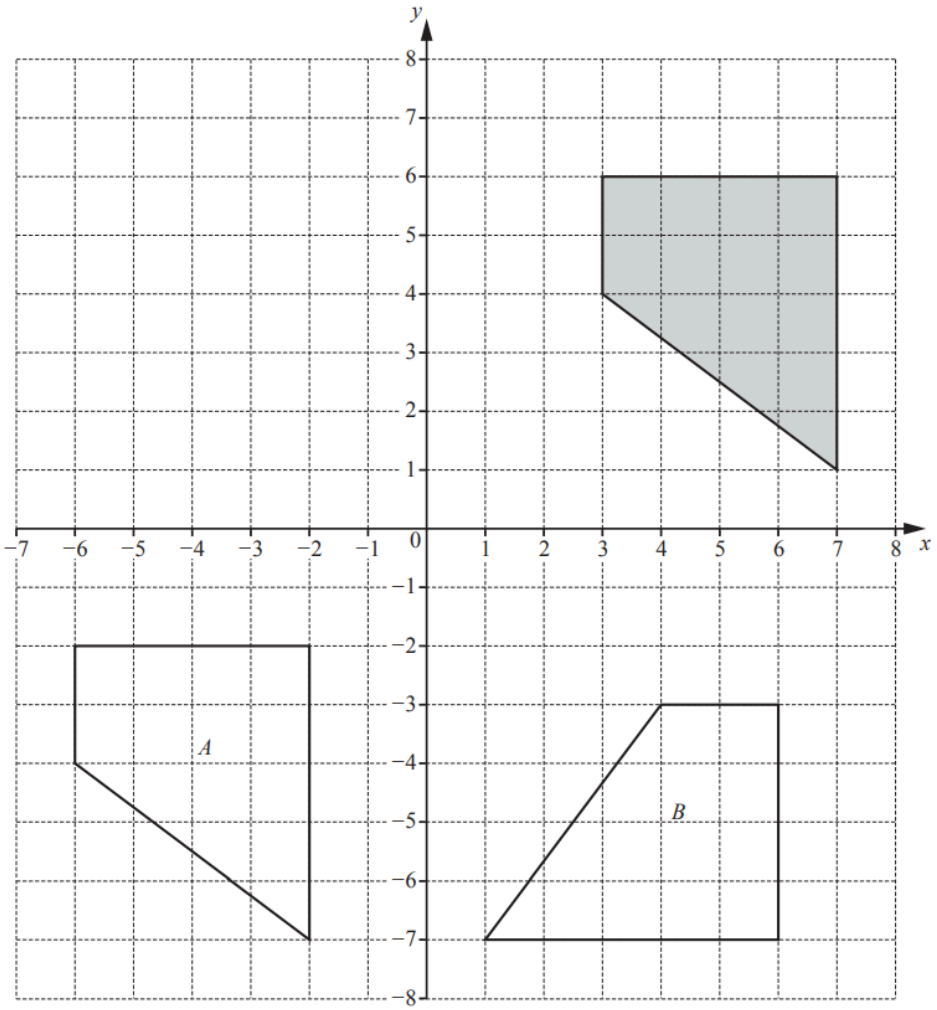
..... cm [1]

ii) the area of shape A.

.....cm^2 [1]

(2 marks)

7 Three quadrilaterals are shown on a 1 cm^2 grid.



For the shaded quadrilateral

i) **measure** the perimeter,

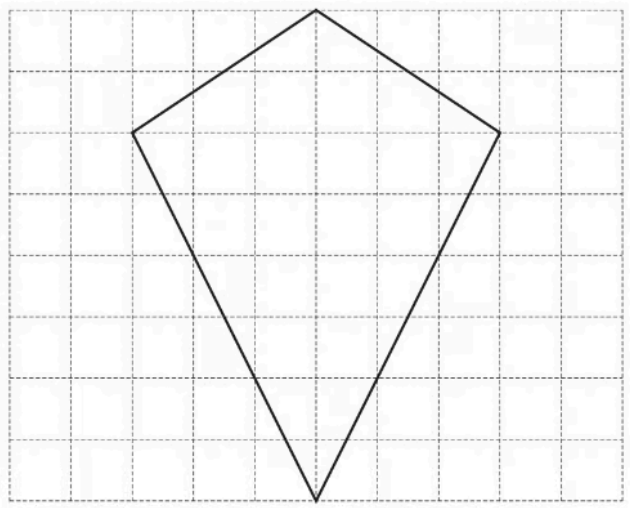
..... cm [1]

ii) work out the area.

..... cm^2 [1]

(2 marks)

8



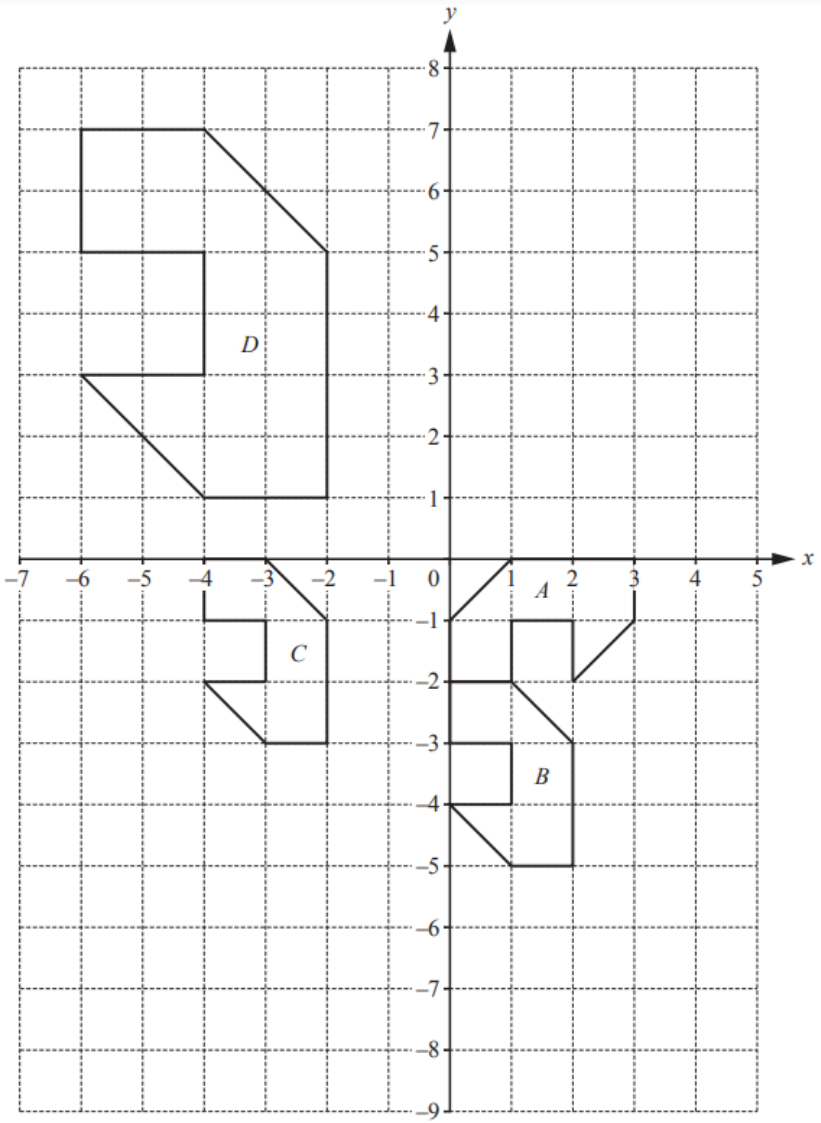
The diagram shows a quadrilateral on a 1 cm^2 grid.

Work out the area of this quadrilateral.

Give the units of your answer.

(3 marks)

9



The diagram shows four shapes, A, B, C and D, drawn on a 1 cm^2 grid.

Find the area of shape B.

..... cm^2

(1 mark)

Medium Questions

1 The length, l, of a rectangle is 3 cm longer than the width, w.
The perimeter of the rectangle is 26 cm.

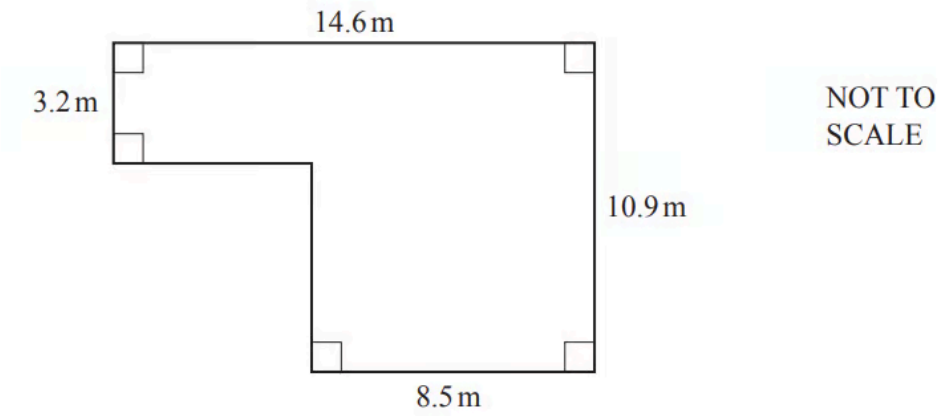
Calculate the length, l, and the width, w.

l = ... cm

w = ... cm

(3 marks)

2 The diagram shows the plan of part of Rachel's garden.

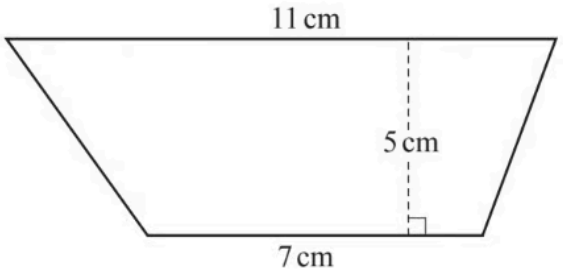


Calculate the area.

..... m^2

(3 marks)

3



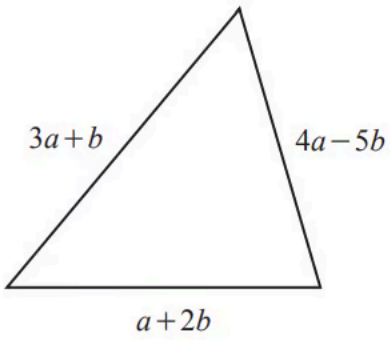
NOT TO SCALE

Calculate the area of the trapezium.

..... cm^2

(2 marks)

4

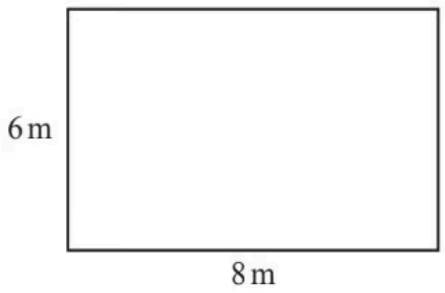


NOT TO SCALE

Find an expression for the perimeter of this triangle.
Give your answer in its simplest form.

(3 marks)

5



NOT TO SCALE

The diagram shows a rectangular patio with sides 6m and 8m.

i) Work out the perimeter of the patio.

..... m [1]

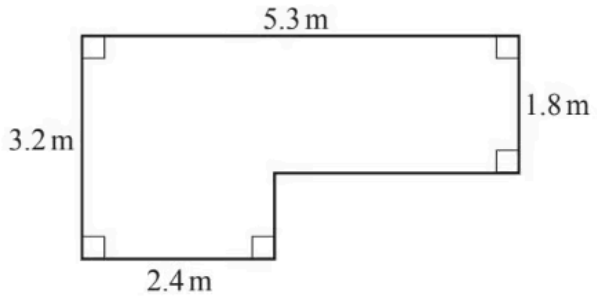
ii) Henri covers the patio floor with square tiles.
The tiles are 0.5m by 0.5m.

Work out the number of tiles he needs.

[2]

(3 marks)

6 (a)



NOT TO SCALE

The diagram shows the floor of a room.

i) Calculate the area of the floor.

..... m^2 [2]

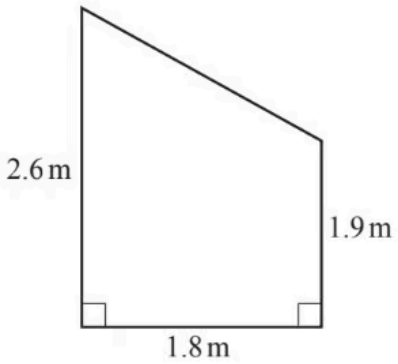
ii) Henry buys varnish for the floor of the room.
500ml of varnish covers $8m^2$ of floor.

Calculate the amount of varnish Henry needs.

..... ml [2]

(4 marks)

(b)



NOT TO SCALE

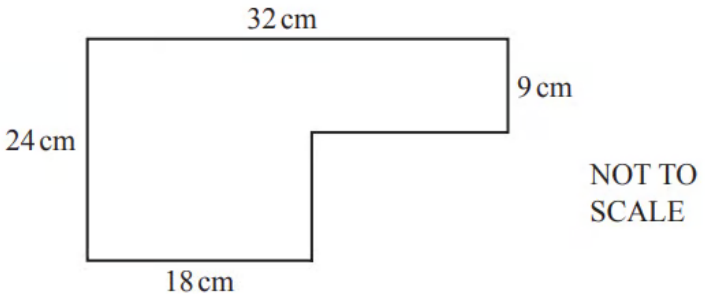
The diagram shows one wall of the room.

Calculate the area of the wall.

..... m^2

(2 marks)

7 The diagram shows a shape made from two rectangles.



i) Work out the perimeter.

..... cm [2]

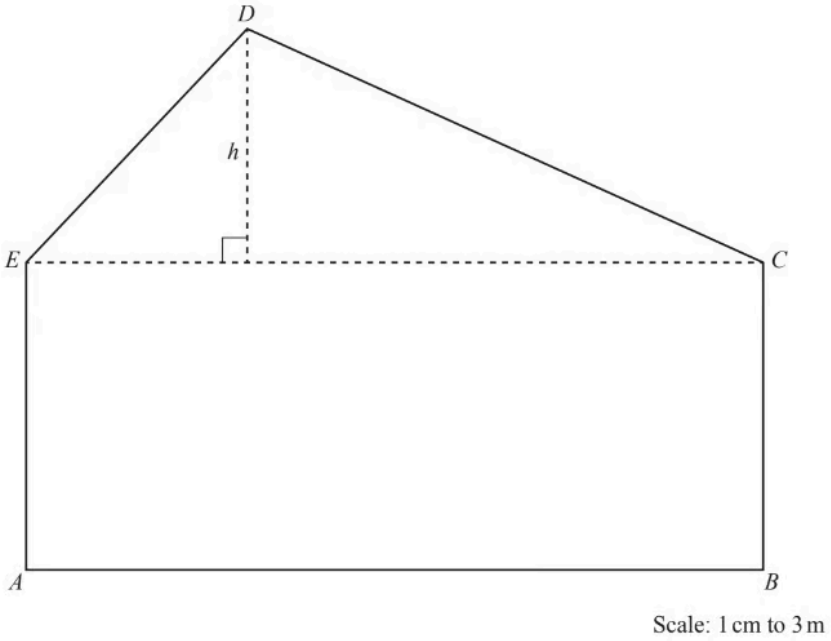
ii) Work out the area.

..... cm^2 [2]

(4 marks)

8 (a) The scale drawing shows a play area, $ABCDE$.

The scale is 1 centimetre represents 3 metres.



Find the actual distance h in metres.

h = ...m

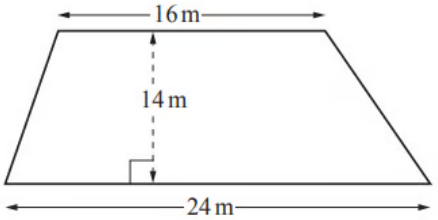
(2 marks)

(b) Find the actual area of triangle CDE.

..... m^2

(3 marks)

9



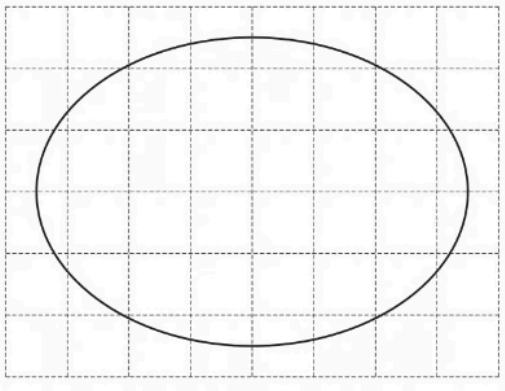
NOT TO SCALE

Calculate the area of this trapezium.

..... m^2

(2 marks)

10

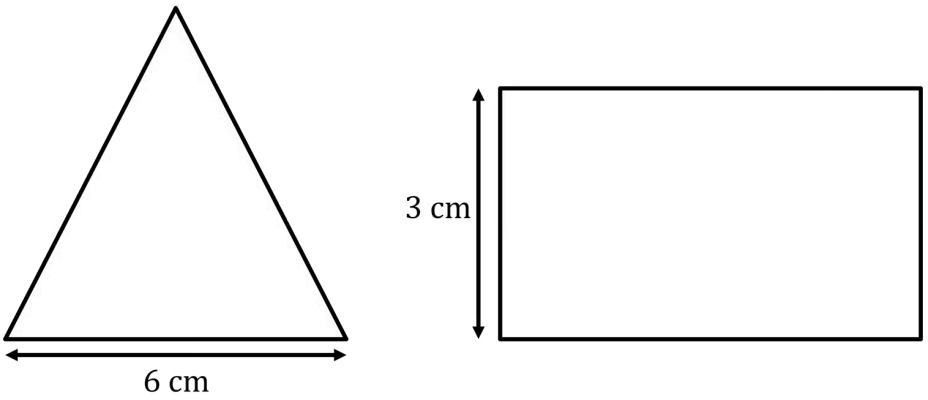


Find an estimate for the area of the shape drawn on this 1 cm^2 grid.

..... cm^2

(2 marks)

11 Here is a triangle and a rectangle.



Not drawn to scale

The base of the triangle is 6 cm.

The height of the triangle is the same as the length of the rectangle.

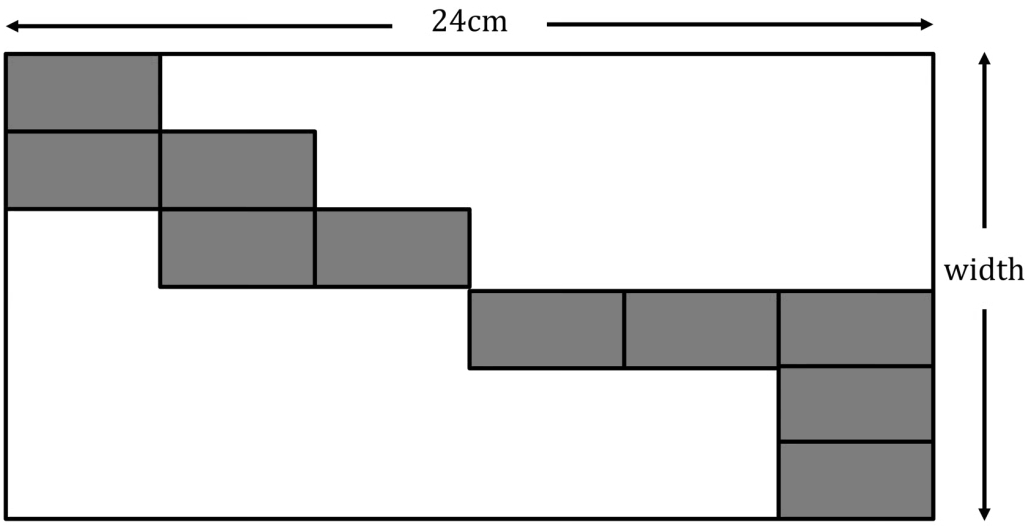
The width of the rectangle is 3 cm.

The perimeter of the rectangle is 36 cm.

Work out the area of the triangle.

(4 marks)

12 The diagram shows 12 identical grey rectangles inside a large rectangle.



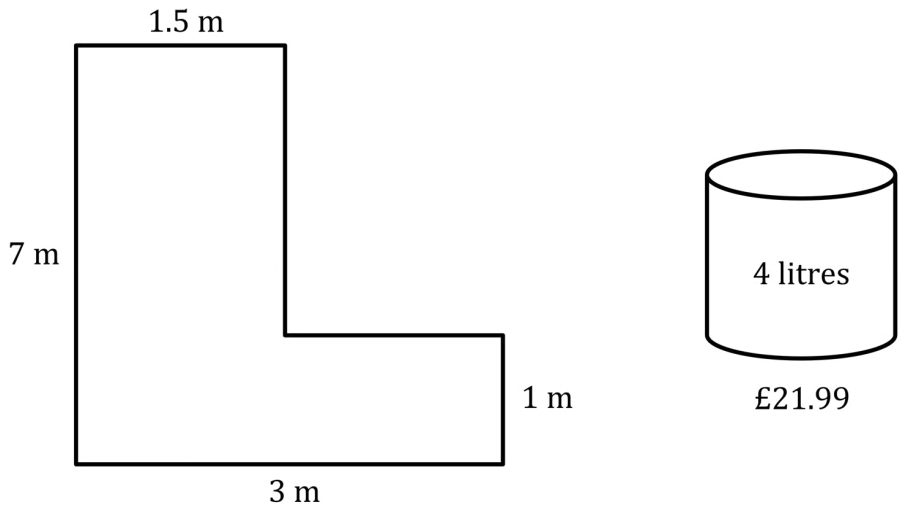
The length of the large rectangle is 24 cm.

The length of a grey rectangle is twice its width.

Work out the width of the large rectangle.

(3 marks)

13 The diagram shows a floor in the shape of a hexagon.



Sandra is going to paint the floor.

Each 4 litre tin of paint costs £21.99.

1 litre of paint covers an area of $2m^2$.

Sandra has £50 to spend on paint.

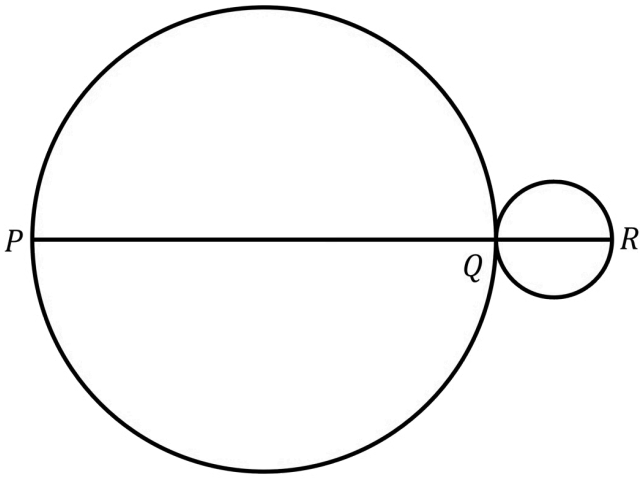
Has Sandra got enough money to buy all the paint she needs?

You must show how you get your answer.

(5 marks)

14 (a) Below are two circles.

PQR is a straight line.



This diagram is not to scale.

PQ is the diameter of the larger circle.

QR is the diameter of the smaller circle.

The length PQ is four times the length QR.

$PR = 70$ cm

Work out the length of PQ.

(2 marks)

(b) Work out the area of the smaller circle.

Give your answer to 2 decimal places.

Include units in your answer.

(3 marks)

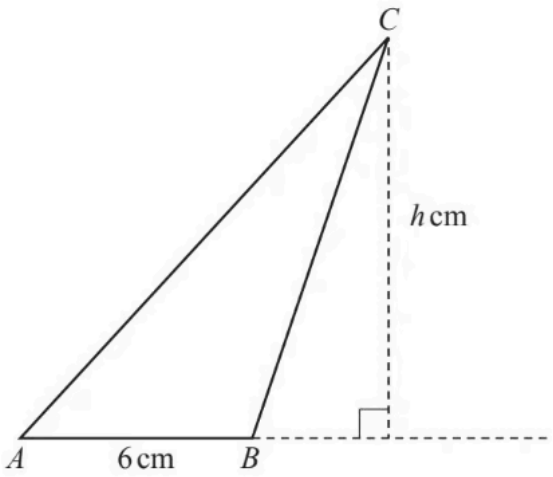
(c) Work out the circumference of the larger circle.

Give your answer in terms of π.

(2 marks)

Hard Questions

1



NOT TO SCALE

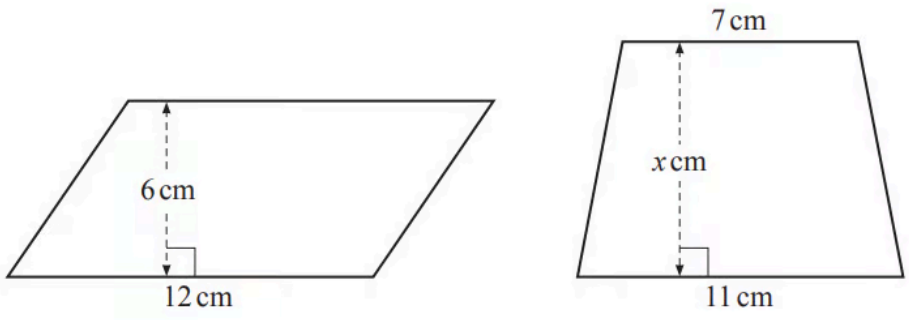
The area of triangle ABC is 27 cm^2 and AB = 6 cm.

Calculate the value of h.

h = ...

(2 marks)

2



NOT TO SCALE

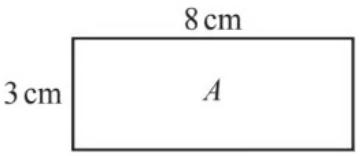
The area of the parallelogram is the same as the area of the trapezium.

Work out the value of x.

x = ...

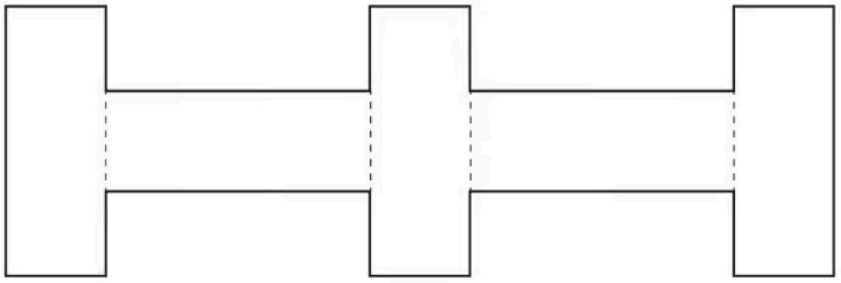
(3 marks)

3 Rectangle A measures 3 cm by 8 cm.



NOT TO SCALE

Five rectangles congruent to A are joined to make a shape.



NOT TO SCALE

Work out the perimeter of this shape.

..... cm

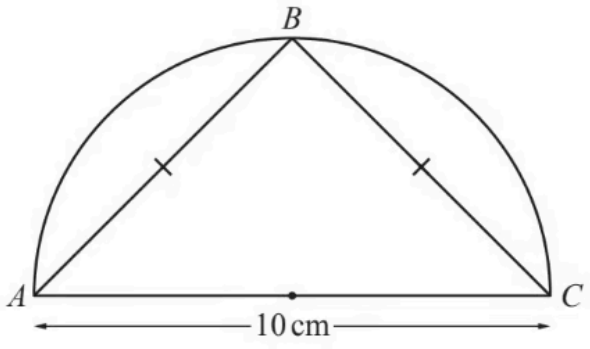
(2 marks)

4 (a) A square has perimeter $12x$.

Find an expression, in terms of x, for the area of the square.
Give your answer in its simplest form.

(3 marks)

(b)



NOT TO SCALE

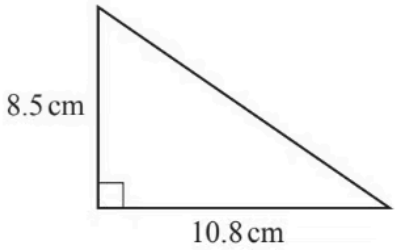
The diagram shows a semicircle with diameter AC.
B is a point on the circumference and $AB = BC$.

Work out the area of triangle ABC.

..... cm^2

(3 marks)

5



NOT TO SCALE

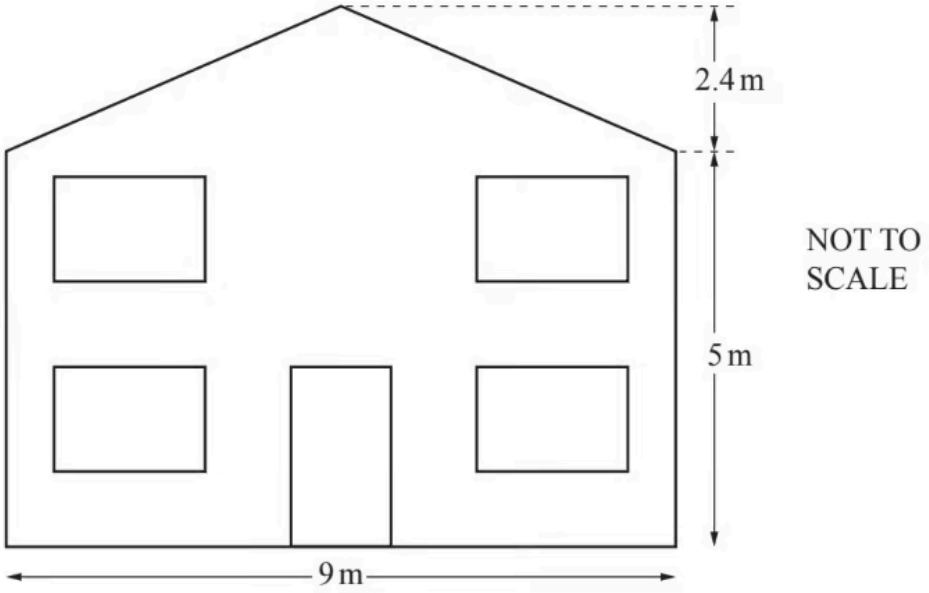
The diagram shows a right-angled triangle.

Calculate the perimeter.

..... cm

(3 marks)

6



The diagram shows the front of Pranav's house.

i) Work out the total area of the front of his house.

..... m^2 [3]

ii) The door is 0.9 m wide and 2.1 m high.
Each of the four windows are 1.5 m wide and 1.2 m high.

Work out the total area of the door and the four windows.

..... m^2 [3]

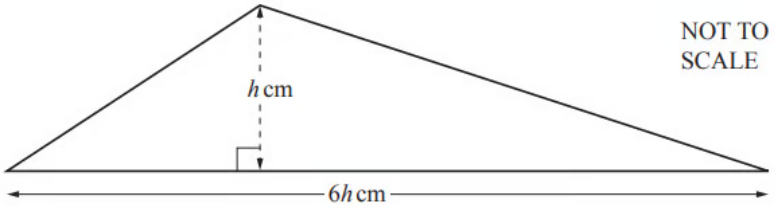
iii) Pranav paints the front of his house but not the door and not the four windows.

Work out the area he paints.

..... m^2 [1]

(3 marks)

7



The area of this triangle is $363cm^2$.

Calculate the value of h.

h = ...

(3 marks)