



EXAM PAPERS PRACTICE

GCSE OCR Math J560

Problem Solving with areas

Question Paper

*"We will help you to
achieve A Star "*



Question 1

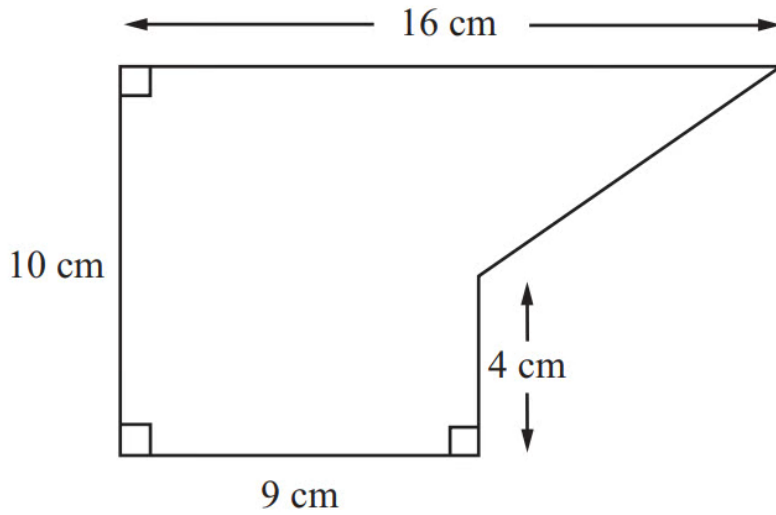


Diagram **NOT** accurately drawn

The diagram shows a shape.

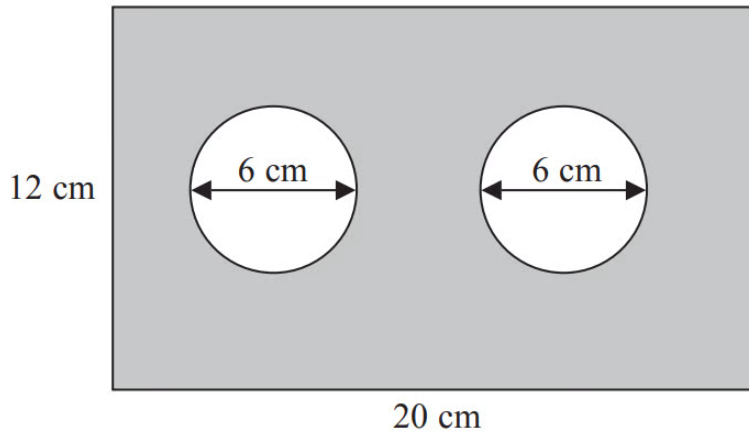
Work out the area of the shape.

[4 marks]



Question 2

Diagram **NOT**
accurately drawn



The diagram shows a metal plate in the shape of a rectangle.
The rectangle has length 20 cm and width 12 cm.
Two identical circles, each of diameter 6 cm, have been cut out of the plate.

Work out the area of the shaded region of the metal plate.
Give your answer correct to the nearest cm^2 .

[4 marks]



Question 3

Here are a rectangle and a square.

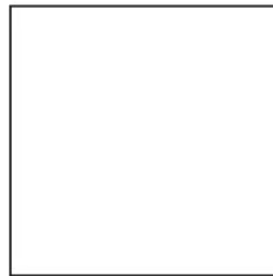
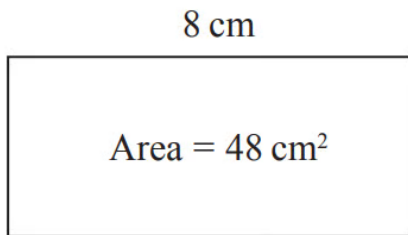


Diagram **NOT**
accurately drawn

The rectangle has length 8 cm and area 48 cm^2

The perimeter of the square is the same as the perimeter of the rectangle.

Calculate the area of the square.

[4 marks]



Question 4

The diagram shows a path around a pond.

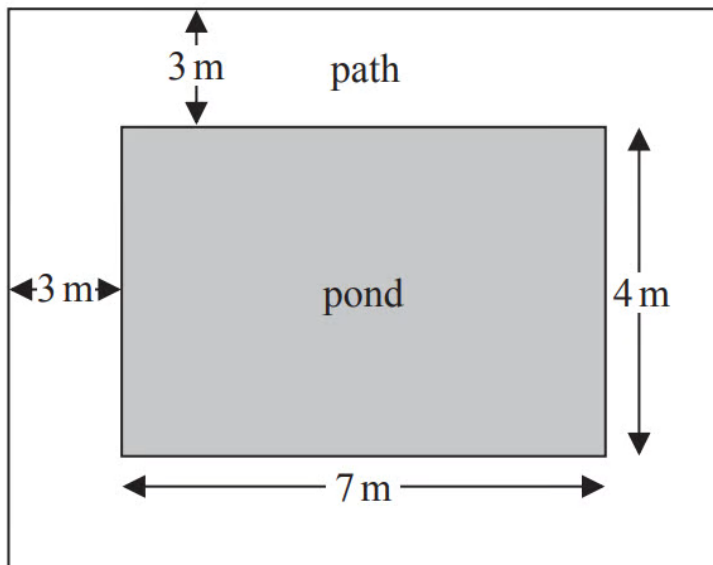


Diagram **NOT** accurately drawn

The pond is in the shape of a rectangle with length 7 m and width 4 m.
The path is 3 m wide.

Ali is going to cover the path with gravel.
One bag of gravel will cover 10 m^2 of the path.

How many bags of gravel does Ali need to buy?
You must show your working.

[4 marks]

Question 5

The diagram shows the path of an athlete on a running track.

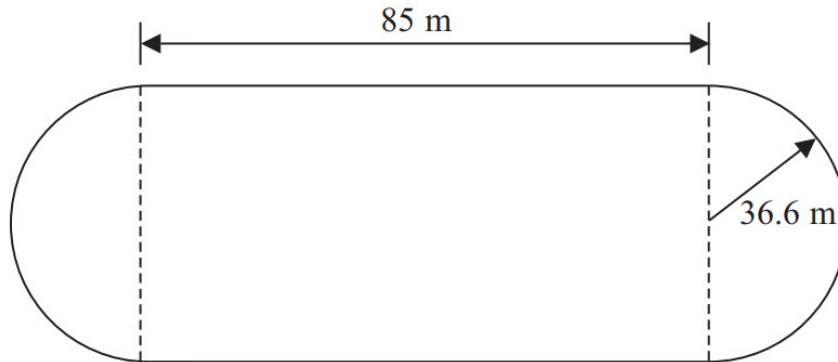


Diagram **NOT**
accurately drawn

The path consists of two straight lengths and a semicircle at each end.
Each straight length is 85 metres.
Each semicircle has a radius of 36.6 metres.

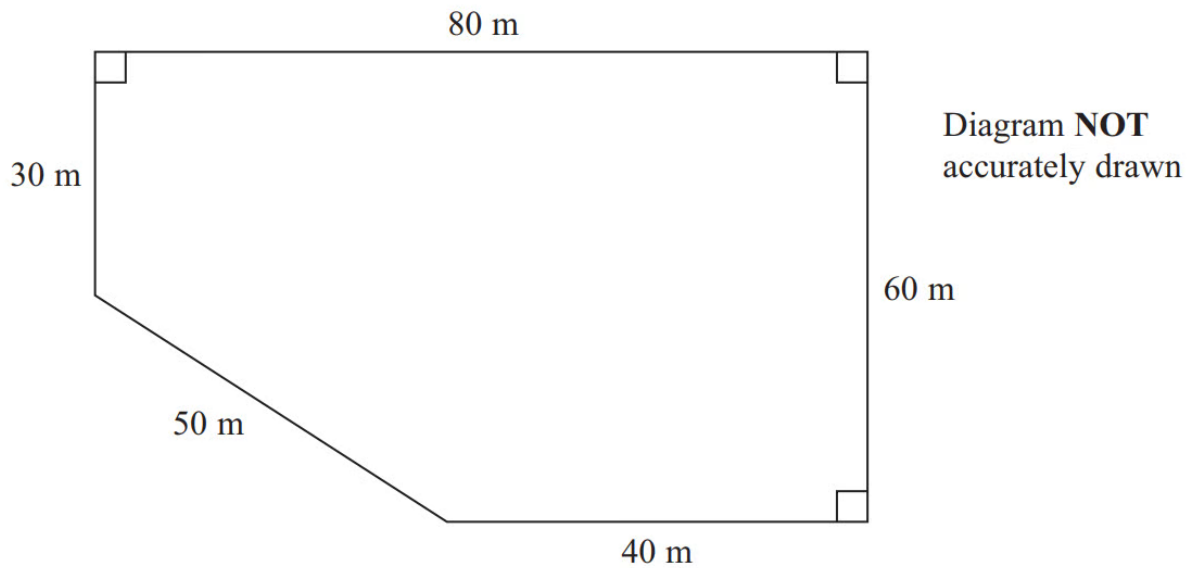
Calculate the area enclosed by the path.
Give your answer correct to 3 significant figures.

[4 marks]



Question 6

The diagram shows the plan of a playground.



Bill is going to cover the playground with tarmac.
It costs £2.56 to cover each square metre with tarmac.

Work out the total cost of the tarmac Bill needs.

[4 marks]

Question 7

(a) Here is a shape made from a rectangle and a semicircle.

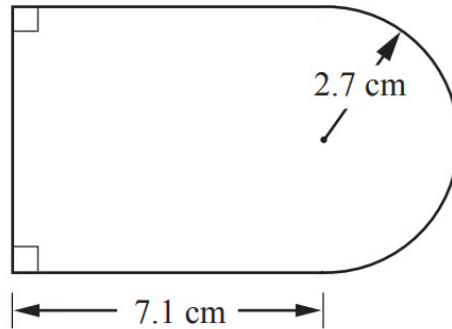


Diagram **NOT**
accurately drawn

The length of the rectangle is 7.1 cm.
The radius of the semicircle is 2.7 cm.

Work out the area of the shape.
Give your answer correct to 3 significant figures.

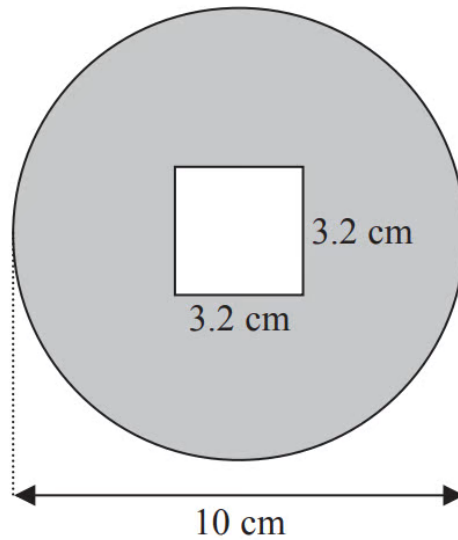
[4 marks]



Question 8

A square hole is cut from a circular piece of card.

Diagram **NOT**
accurately drawn



The square has sides of length 3.2 cm.
The diameter of the circular piece of card is 10 cm.

Work out the area of the shaded region.
Give your answer correct to 3 significant figures.

[4 marks]



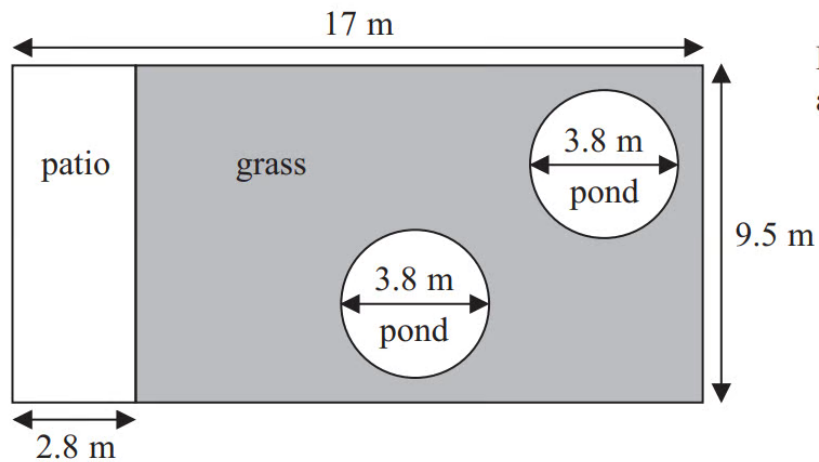
Question 9

Mr Weaver's garden is in the shape of a rectangle.

In the garden

there is a patio in the shape of a rectangle
and two ponds in the shape of circles with diameter 3.8 m.

The rest of the garden is grass.



Mr Weaver is going to spread fertiliser over all the grass.
One box of fertiliser will cover 25 m^2 of grass.

How many boxes of fertiliser does Mr Weaver need?
You must show your working.

[5 marks]



Question 10

The diagram shows the plan of a floor.

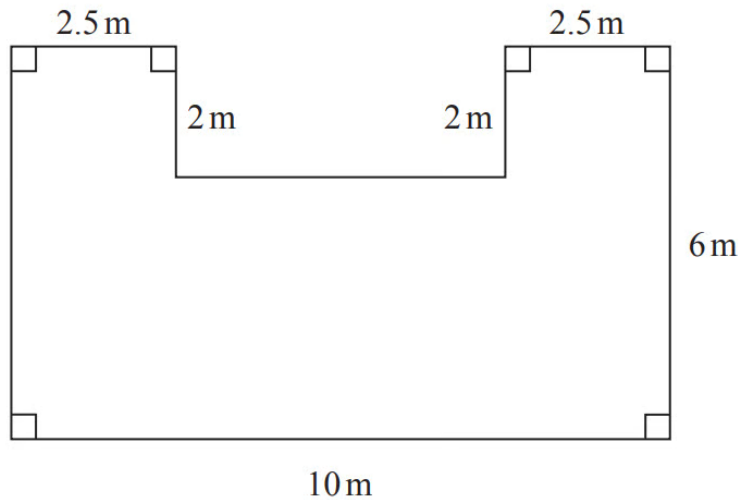


Diagram **NOT**
accurately drawn

Angie is going to varnish the floor.

She needs 1 litre of varnish for 5 m^2 of floor.

There are 2.5 litres of varnish in each tin of varnish.

Angie has 3 tins of varnish.

Does she have enough varnish for all the floor?

You must show all your working.

[5 marks]



Question 11

The diagram shows the floor plan of Mary's conservatory.

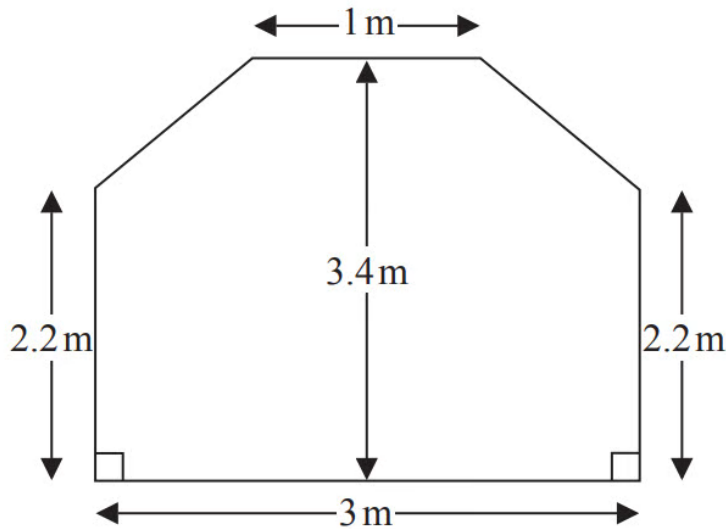


Diagram **NOT** accurately drawn

Mary is going to cover the floor with tiles.

The tiles are sold in packs.

One pack of tiles will cover 2 m^2

A pack of tiles normally costs £24.80

Mary gets a discount of 25% off the cost of the tiles.

Mary has £100

Does Mary have enough money to buy all the tiles she needs?

You must show all your working.

[5 marks]



Question 12

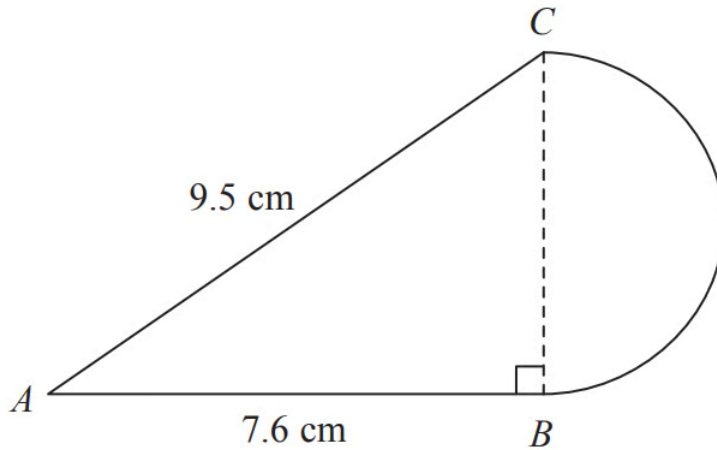


Diagram **NOT**
accurately drawn

The diagram shows a shape made from triangle ABC and a semicircle with diameter BC . Triangle ABC is right-angled at B . $AB = 7.6$ cm and $AC = 9.5$ cm.

Calculate the area of the shape.
Give your answer correct to 3 significant figures.

[5 marks]

Question 13

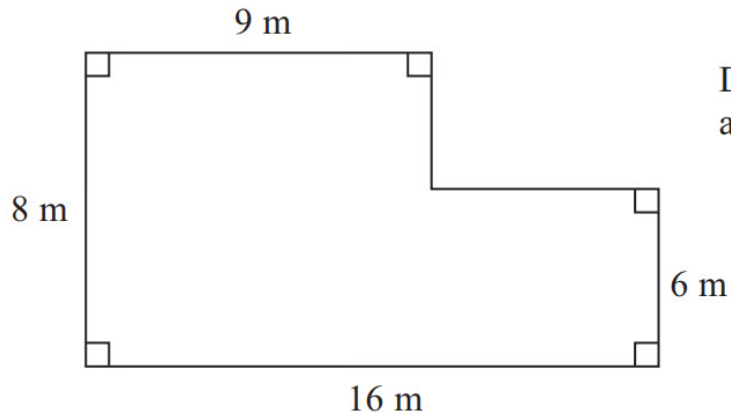
(b) Work out the length of AQ .
Give your answer correct to 3 significant figures.

[3 marks]



Question 14

The diagram shows the floor of a village hall.



The caretaker needs to polish the floor.

One tin of polish normally costs £19

One tin of polish covers 12 m^2 of floor.

There is a discount of 30% off the cost of the polish.

The caretaker has £130

Has the caretaker got enough money to buy the polish for the floor?

You must show all your working.

[5 marks]



Question 15

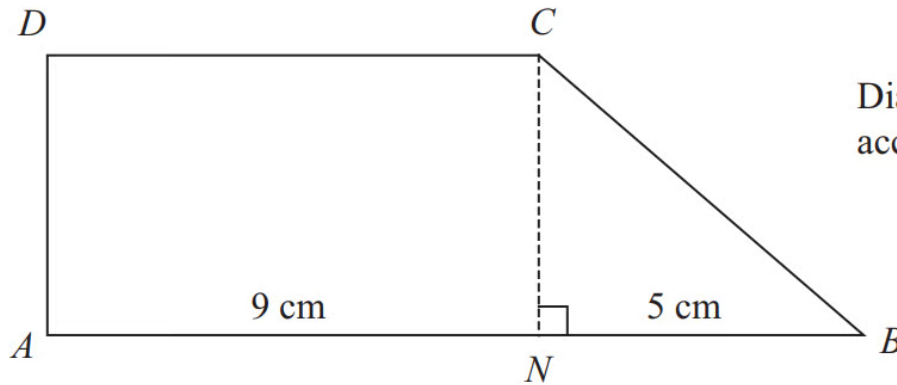


Diagram **NOT**
accurately drawn

The shape $ABCD$ is made from a rectangle $ANCD$
and the right-angled triangle NBC .

ANB is a straight line.

$AN = 9$ cm.

$NB = 5$ cm.

The area of rectangle $ANCD$ is 36 cm²

Work out the area of shape $ABCD$.

[4 marks]