4.4 Perimeters and Areas

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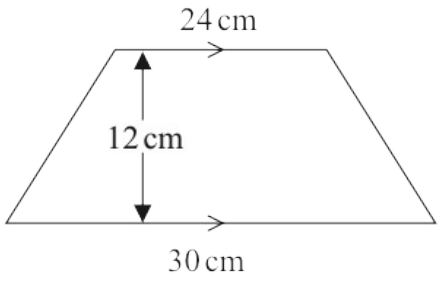
19 Here is a trapezium and a square.



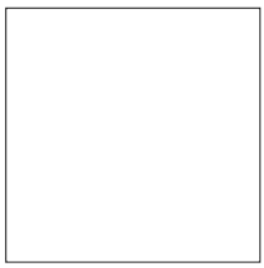


Diagram **NOT** accurately drawn

The lengths of the parallel sides of the trapezium are 24 cm and 30 cm.
The height of the trapezium is 12 cm.

The area of the square is equal to the area of the trapezium.

Work out the perimeter of the square.

..... cm

(Total for Question 19 is 4 marks)

16 Here is a hexagon *ABCDEF*.

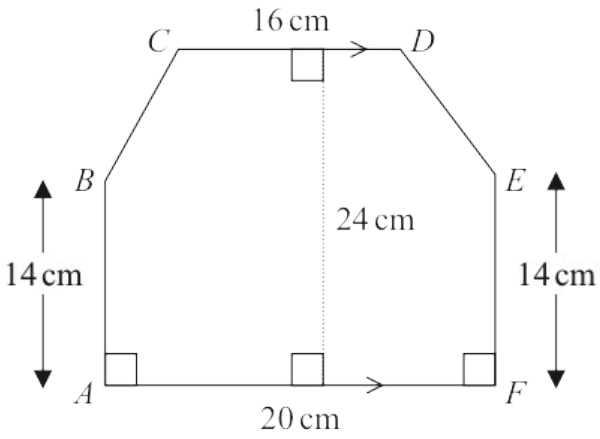


Diagram **NOT** accurately drawn

CD is parallel to *AF*.

Work out the area of hexagon *ABCDEF*.

..... cm^2

(Total for Question 16 is 4 marks)

12

The diagram shows the pentagon $ABCDE$.

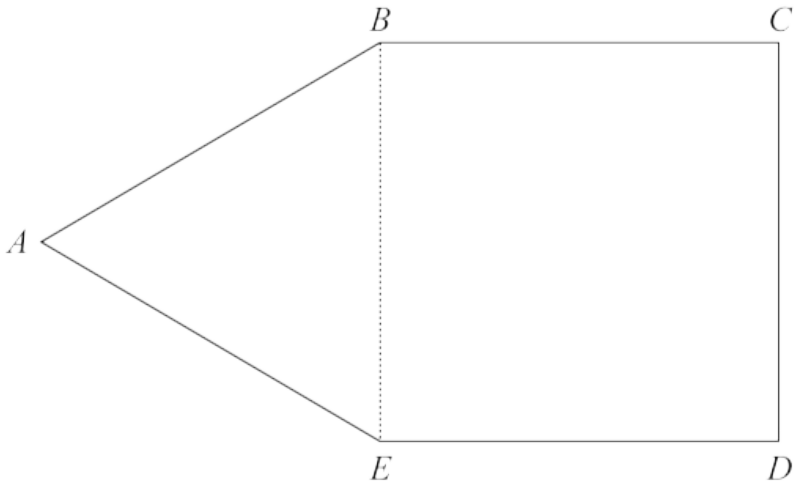


Diagram **NOT** accurately drawn

ABE is an equilateral triangle.

$BCDE$ is a square with area $169\,cm^2$

(b) Work out the perimeter of $ABCDE$.

c

(3)

19 Calvin has 12 identical rectangular tiles.
He arranges the tiles to fit exactly round the edge of a shaded rectangle, as shown in the diagram below.

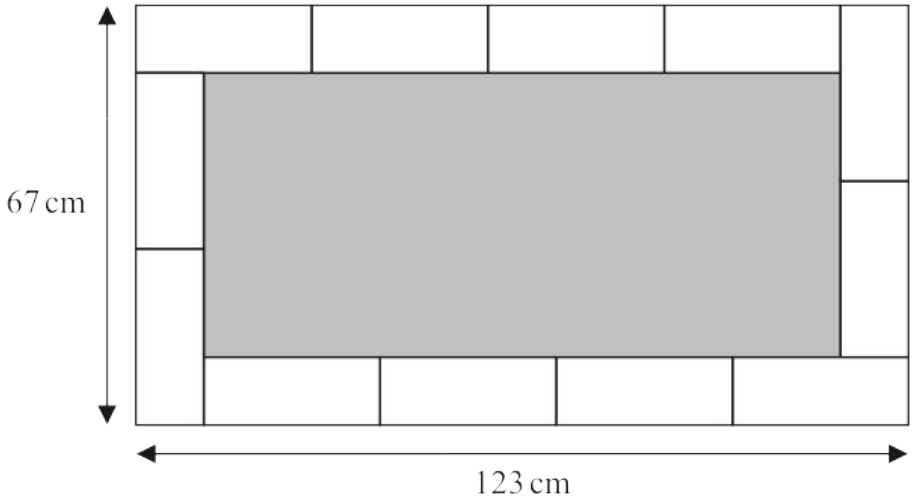


Diagram **NOT** accurately drawn

Work out the area of the shaded rectangle.

cm^2

(Total for Question 19 is 5 marks)

12 The diagram shows the plan of the floor in a room.

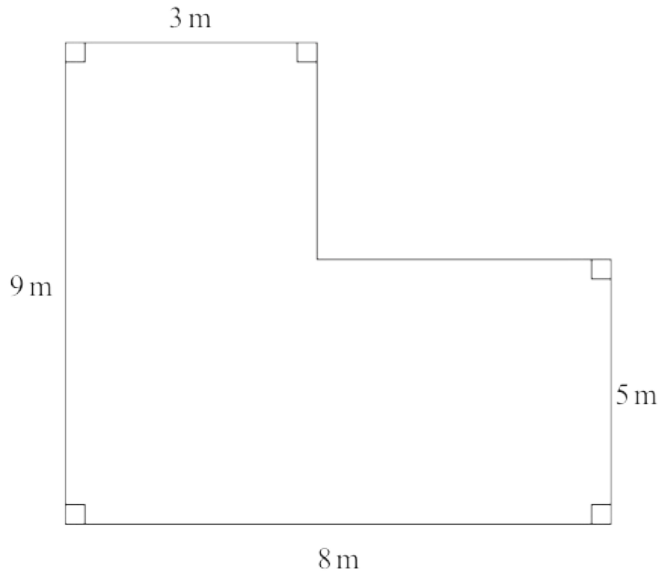


Diagram **NOT** accurately drawn

Alonso is going to cover the floor once with polish.
He buys some tins of polish.

Each tin has enough polish to cover 14 m^2 of the floor.
Each tin costs 9.59 euros.

Work out the total cost of the tins that Alonso needs to buy.

euros

(Total for Question 12 is 5 marks)

16 The diagram shows a shape.

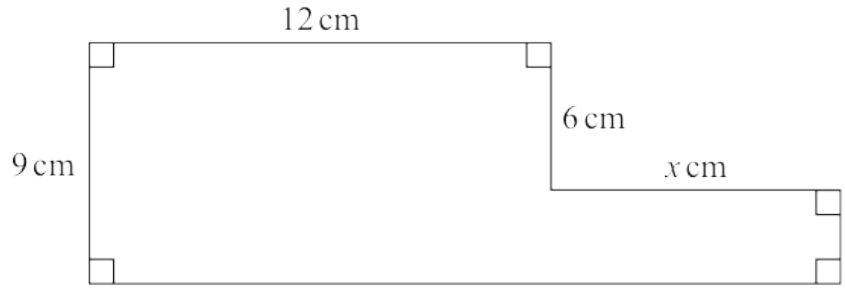


Diagram **NOT** accurately drawn

The shape has area 129 cm^2

Work out the value of x.

$x =$ .....

(Total for Question 16 is 4 marks)

8 Here is a rectangle.

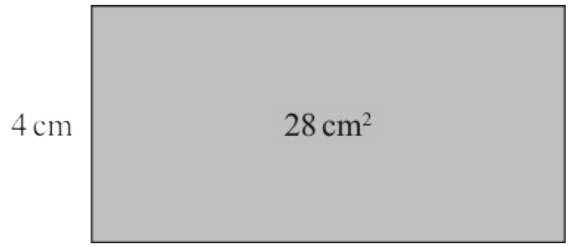


Diagram **NOT** accurately drawn

The area of the rectangle is 28 cm²

Three of these rectangles are used to make the shape below.

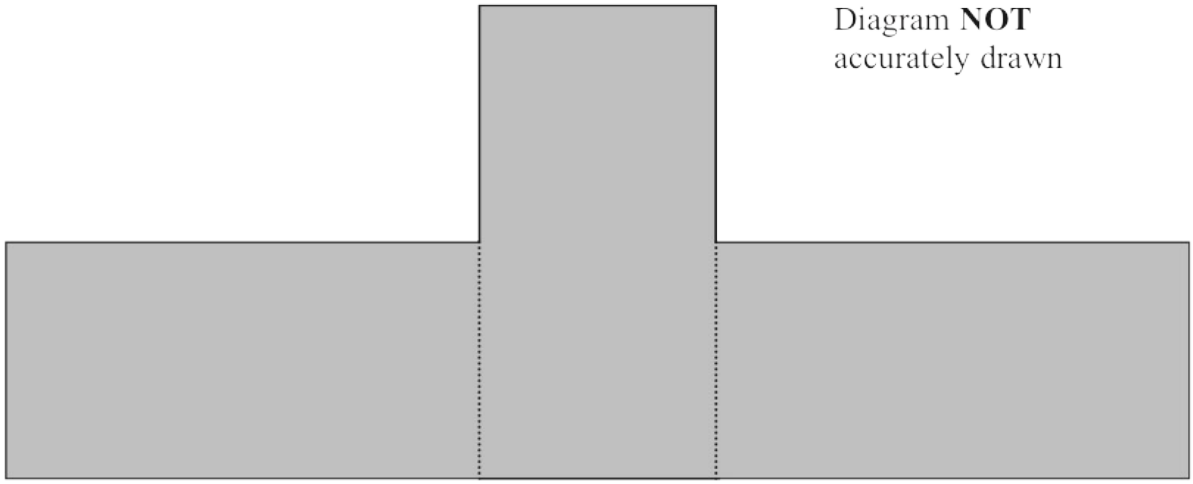


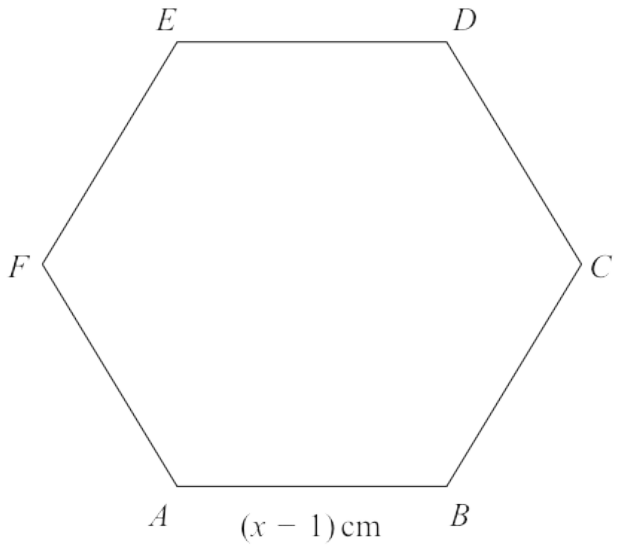
Diagram **NOT** accurately drawn

Work out the perimeter of the shape.

..... cm

(Total for Question 8 is 4 marks)

24 The diagram shows a regular hexagon, *ABCDEF*, and an isosceles triangle, *GHJ*.



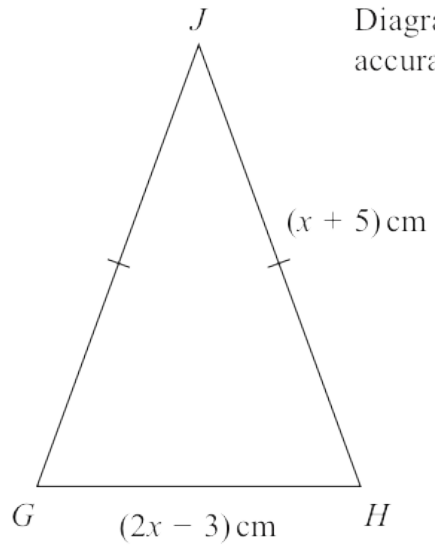


Diagram **NOT** accurately drawn

The perimeter of the hexagon is equal to the perimeter of the triangle.

Find the length of each side of the hexagon.
Show clear algebraic working.

..... cm

(Total for Question 24 is 5 marks)

13 The diagram shows the plan of Sophia's gym floor.

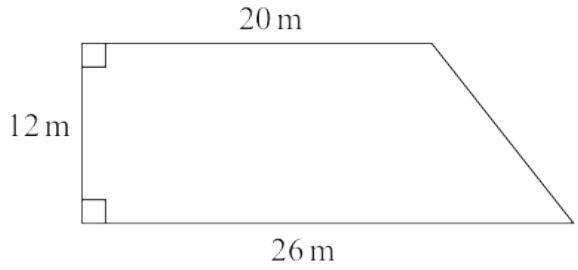


Diagram **NOT** accurately drawn

Sophia is going to paint all the gym floor.

Each tin of paint she is going to use covers an area of $20\,m^2$

There is a special offer on the paint that Sophia is going to buy.

Special Offer

1 tin for $13
4 tins for $40

Work out the least amount of money that Sophia has to pay in order to buy all the paint she needs.
Show your working clearly.

$ .....

(Total for Question 13 is 5 marks)

10 The diagram shows a right-angled triangle.

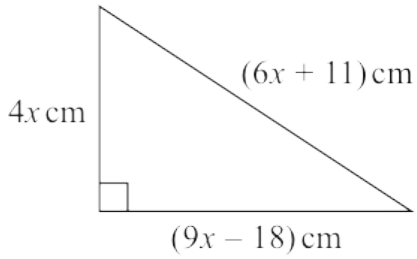


Diagram **NOT** accurately drawn

The perimeter of the triangle is 126 cm.

Work out the area of the triangle.

..... cm^2

(Total for Question 10 is 4 marks)

14 The diagram shows a trapezium.

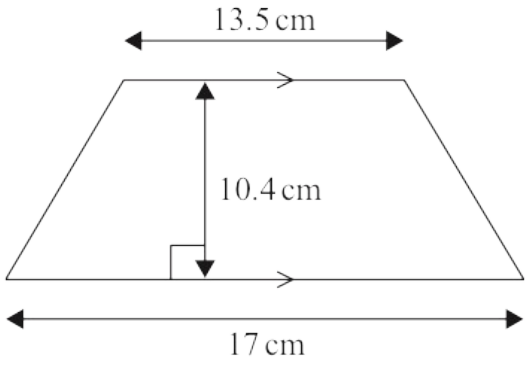


Diagram **NOT** accurately drawn

(a) Work out the area of the trapezium.

..... cm^2

(2)

25 The diagram shows one face of a wall.
This face is in the shape of a pentagon with exactly one line of symmetry.

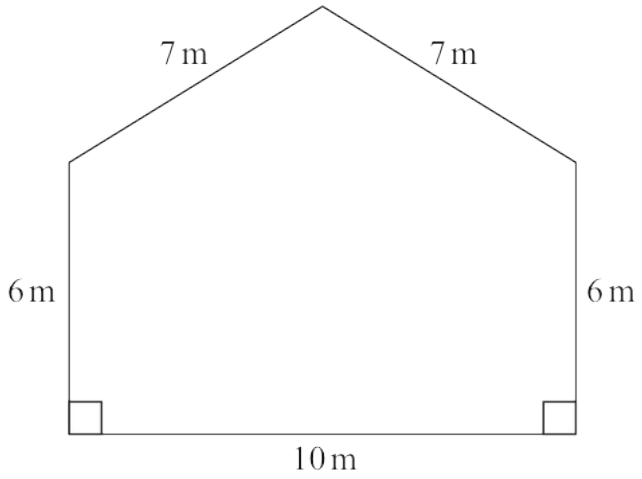


Diagram **NOT** accurately drawn

Omondi is going to paint this face of the wall once.
He has to buy all the paint that he needs to use.

The paint in each tin of paint Omondi is going to buy will cover $16\,m^2$ of the face of the wall.

Work out the least number of tins of paint Omondi will need to buy.
Show your working clearly.

.....

(Total for Question 25 is 5 marks)

7 The diagram shows a rectangle and a square.

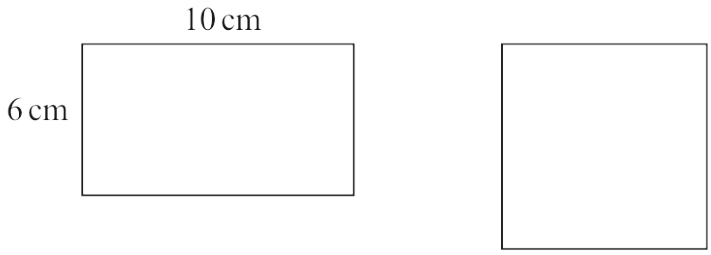


Diagram **NOT** accurately drawn

The perimeter of the rectangle is equal to the perimeter of the square.
The area of the rectangle is less than the area of the square.

Work out by how much the area of the rectangle is less than the area of the square.

.....cm^2

(Total for Question 7 is 4 marks)

18

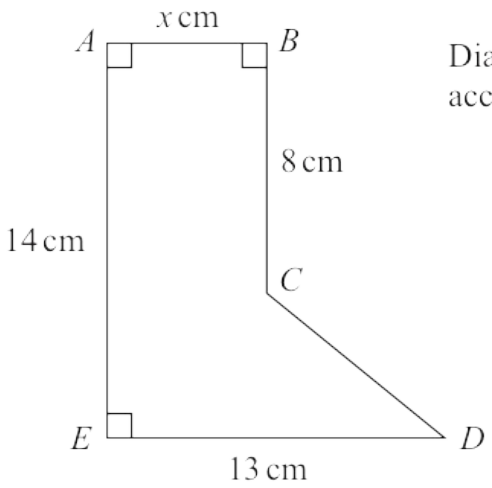


Diagram **NOT** accurately drawn

The diagram shows the shape $ABCDE$.

The area of the shape is $91.8\,cm^2$

Work out the value of x.

$x =$ .....

(Total for Question 18 is 4 marks)

17 Yasmin has some identical rectangular tiles.
Each tile is L cm by W cm.

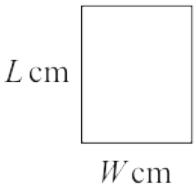


Diagram **NOT** accurately drawn

Using 9 of her tiles, Yasmin makes rectangle $ABCD$ shown in the diagram below.

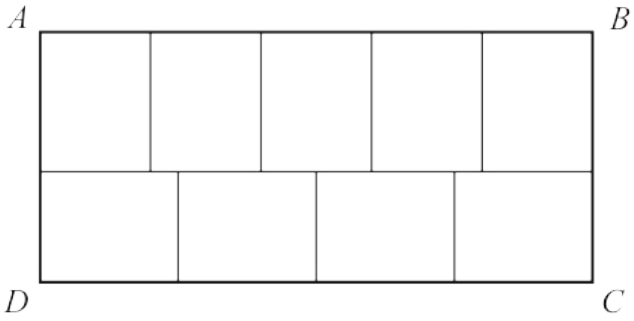


Diagram **NOT** accurately drawn

The area of $ABCD$ is $1620\,\text{cm}^2$

Work out the value of L and the value of W.

$L =$ ..... $W =$ .....

(Total for Question 17 is 5 marks)

13 The diagram shows a classroom wall in the shape of a trapezium.

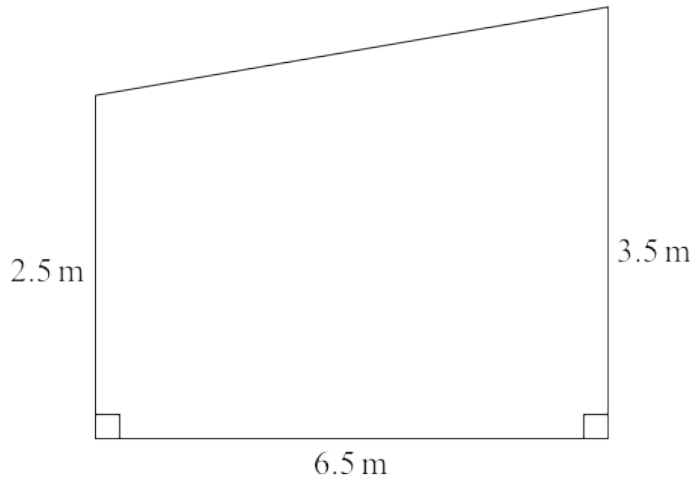


Diagram **NOT** accurately drawn

Dion wants to paint the classroom wall completely twice.
He knows that each tin of paint will cover $12\,m^2$

He is going to have to buy all the paint he needs.

Work out the least number of tins of paint that Dion will need to buy.
Show your working clearly.

.....

(Total for Question 13 is 4 marks)

17 The shaded shape is made using three identical right-angled triangles and a square.

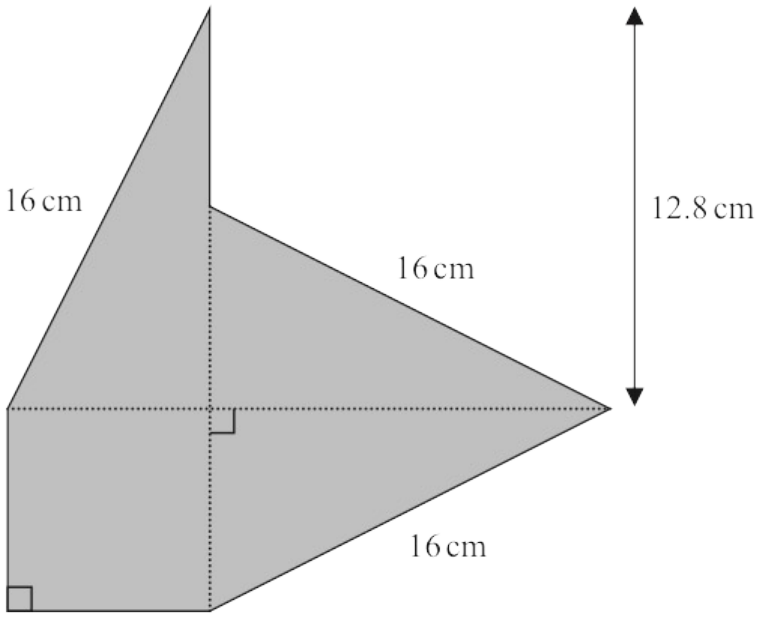


Diagram **NOT** accurately drawn

Work out the perimeter of the shaded shape.

..... cm

(Total for Question 17 is 4 marks)

6 Here is a square.

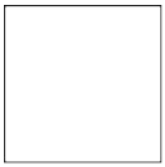


Diagram **NOT** accurately drawn

The perimeter of the square is 24 cm.

The shaded rectangle below is made from 4 of these squares.

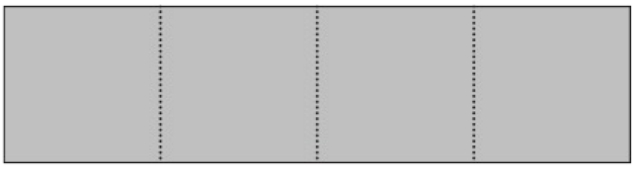


Diagram **NOT** accurately drawn

Work out the perimeter of the shaded rectangle.

..... cm

(Total for Question 6 is 3 marks)

15 The diagram shows a shape *ABCDEFG* made from a square *ABDF* and three identical isosceles triangles *BCD*, *DEF* and *FGA*.

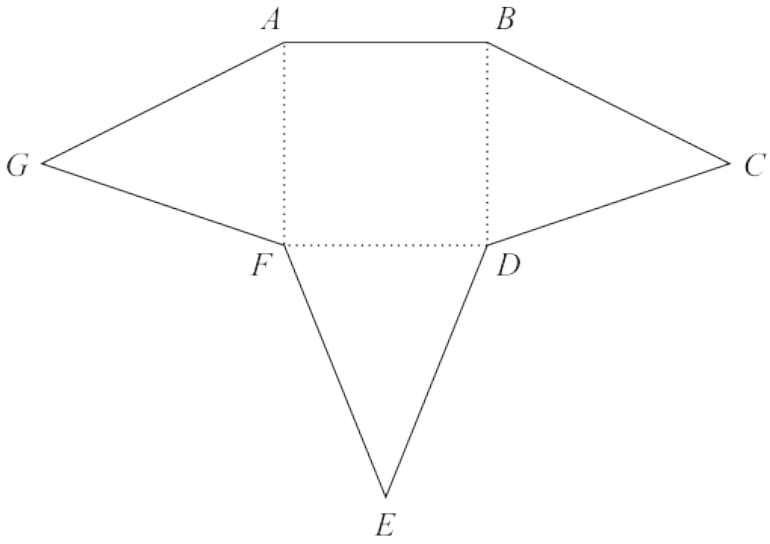


Diagram **NOT** accurately drawn

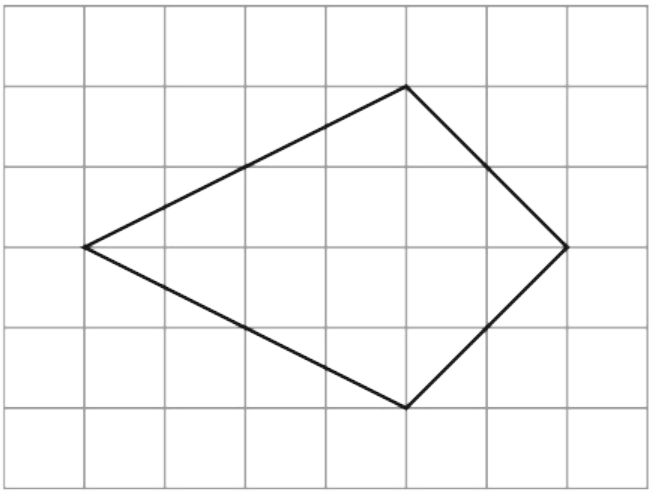
The perimeter of the square *ABDF* is 48 cm.
The perimeter of each isosceles triangle is 30 cm.

Work out the perimeter of the shape *ABCDEFG*.

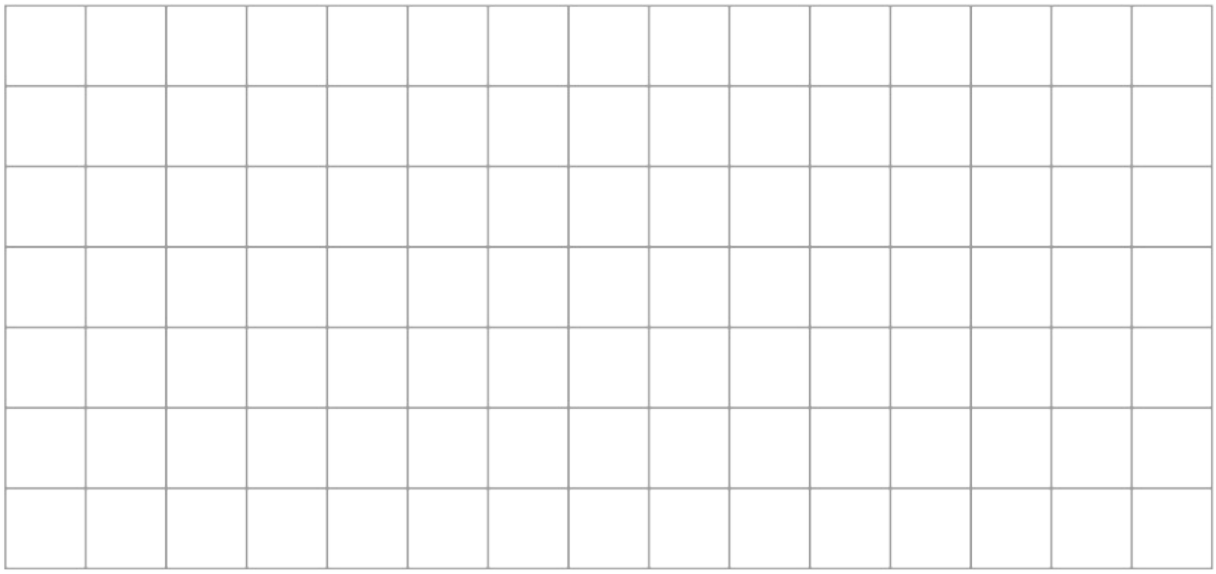
..... cm

(Total for Question 15 is 4 marks)

10 The diagram shows a kite drawn on a centimetre grid.



On the centimetre grid below, draw a rectangle that has the same area as the kite.



(Total for Question 10 is 3 marks)

21 The diagram shows an 8-sided shape *ABCDEFGH*.

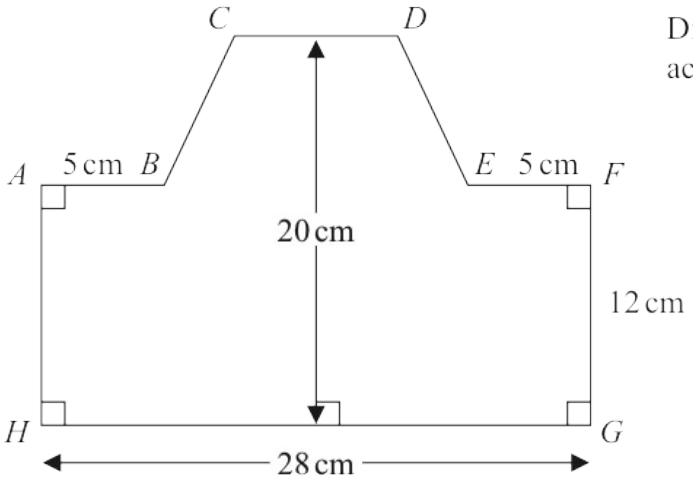


Diagram **NOT** accurately drawn

HG = 28 cm *FG* = 12 cm *AB* = *EF* = 5 cm
The height of the shape is 20 cm
CD is parallel to *HG*

The area of shape *ABCDEFGH* is 434 cm^2

Find the length of *CD*.

..... cm

(Total for Question 21 is 4 marks)

13 The diagram shows a trapezium.

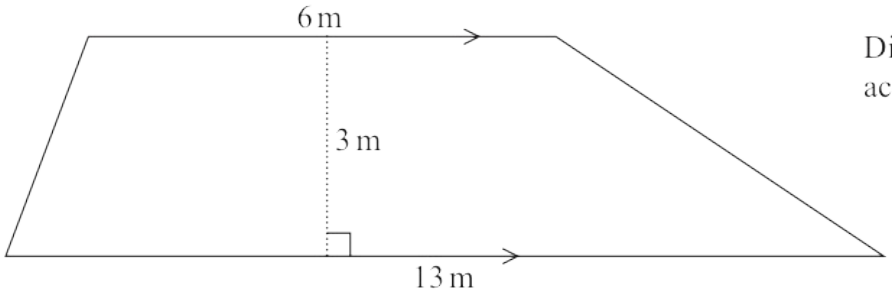


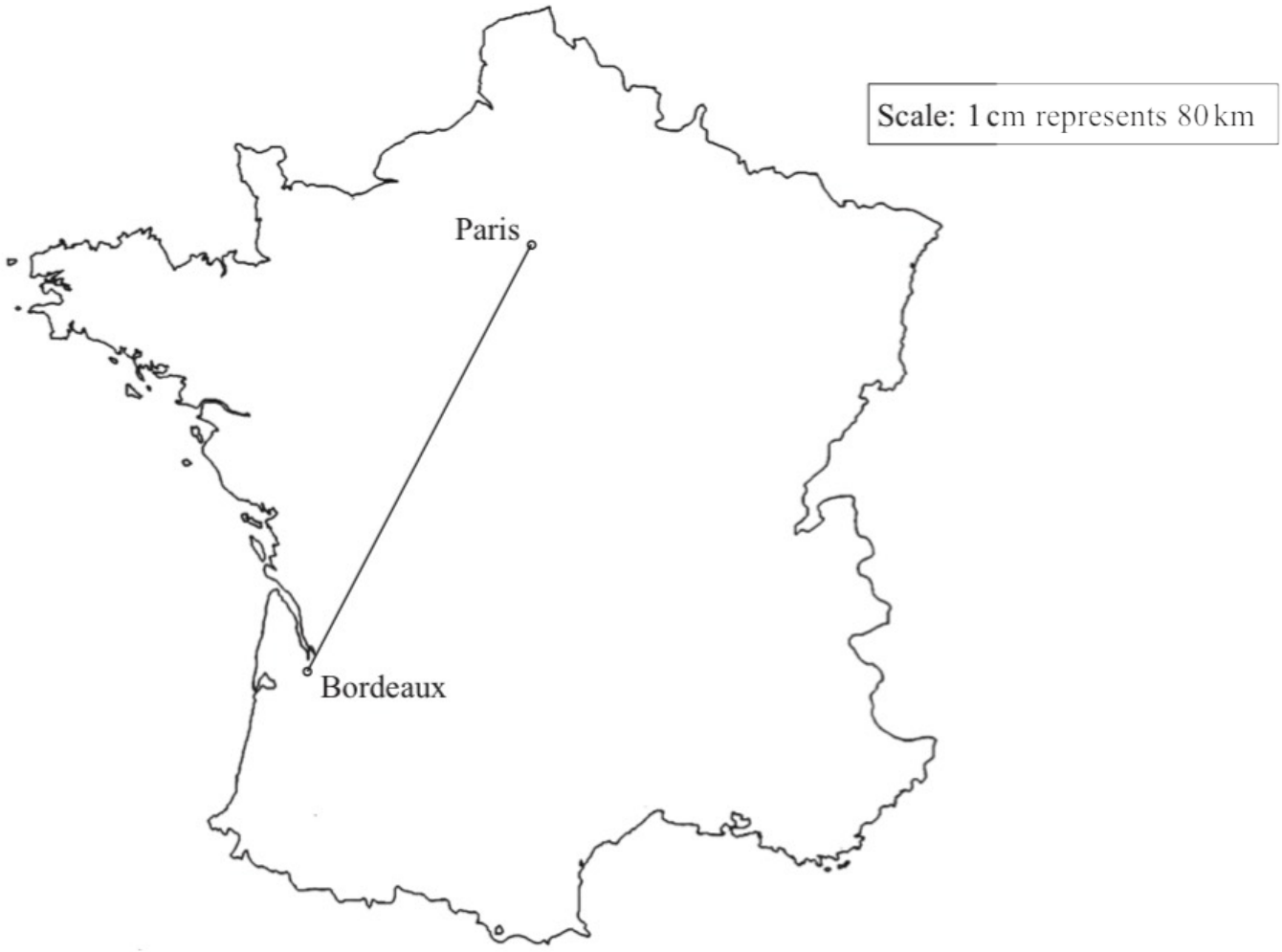
Diagram **NOT** accurately drawn

Work out the area of the trapezium.

..... m^2

(Total for Question 13 is 2 marks)

8 Here is a scale drawing showing the positions of Paris and Bordeaux.



Alain drives from Paris to Bordeaux.
The distance that he drives is 590 km.

This distance is greater than the actual straight line distance between Paris and Bordeaux.

How much greater?
Show your working clearly.

..... km

(Total for Question 8 is 4 marks)

15 Here is a floor plan of a stage.
The plan is formed from a triangle and a rectangle.

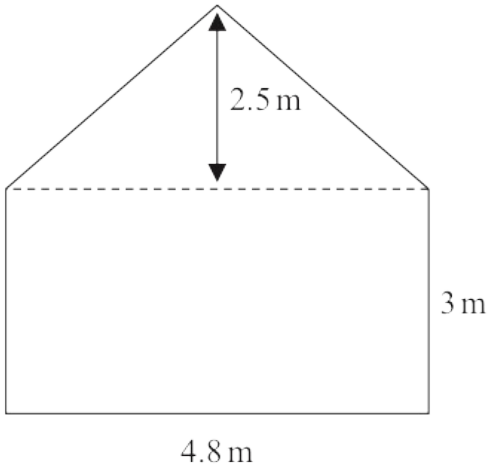


Diagram **NOT** accurately drawn

The stage manager is going to paint the floor.

One tin of paint covers an area of $1.8\,m^2$
One tin of paint costs \$16.40

Paint can only be bought in full tins.

The stage manager has \$190 to spend.

Does the stage manager have enough money to buy enough tins to paint all of the floor?
Show your working clearly.

(Total for Question 15 is 5 marks)

19 The diagram shows rectangle $ABCD$

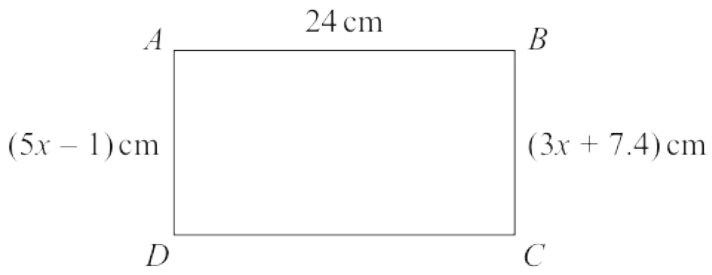


Diagram **NOT** accurately drawn

Work out the perimeter of the rectangle.
Show your working clearly.

..... cm

(Total for Question 19 is 4 marks)

13 The diagram shows the plan of a floor.

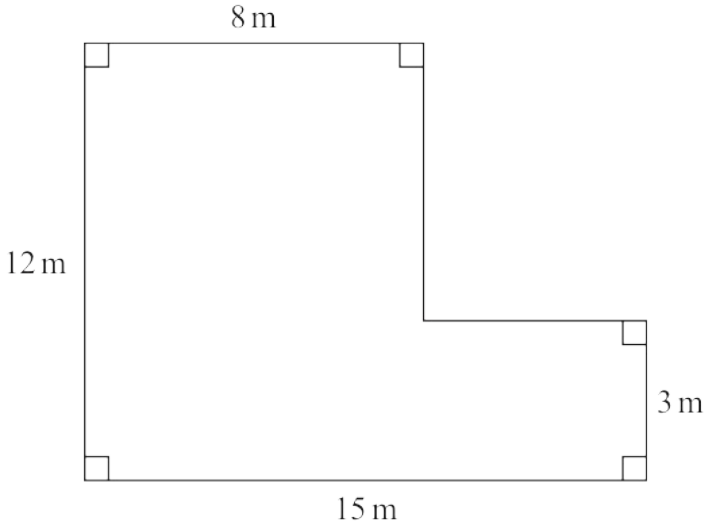


Diagram **NOT** accurately drawn

Indira is going to paint the floor.
She needs to buy enough tins of paint to cover the floor with one coat of paint.

Each tin of paint covers an area of 7 m^2
Each tin of paint costs £23.90

Indira buys the least possible number of tins of paint.

Work out the total cost of the tins of paint that Indira buys.
Show your working clearly.

£.....

(Total for Question 13 is 5 marks)

7 The diagram shows a rectangle measuring 10 cm by 3 cm.

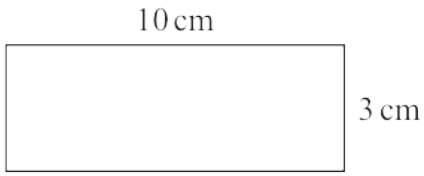
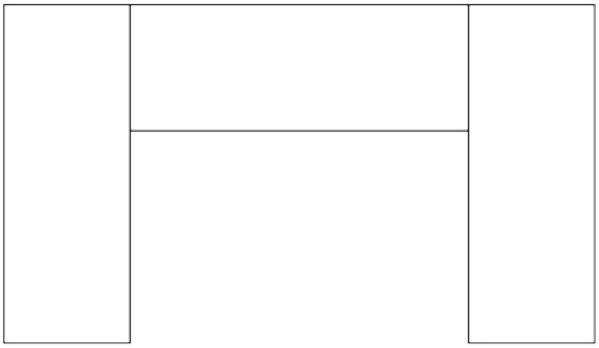


Diagram **NOT** accurately drawn

A shape is made by placing 3 of these rectangles together as shown in the diagram.



Work out the perimeter of the shape.

..... cm

(Total for Question 7 is 3 marks)

13 The diagram shows a rectangle and an isosceles triangle.

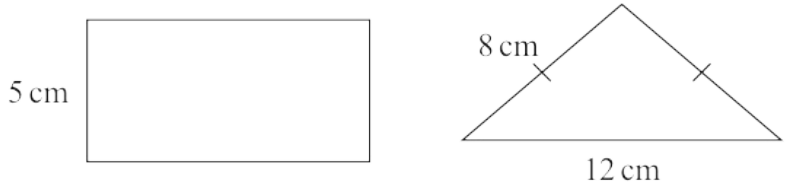


Diagram **NOT** accurately drawn

The perimeter of the rectangle is equal to the perimeter of the triangle.

(a) Find the area of the rectangle.

..... cm^2

(3)

20 A field is in the shape of a trapezium.

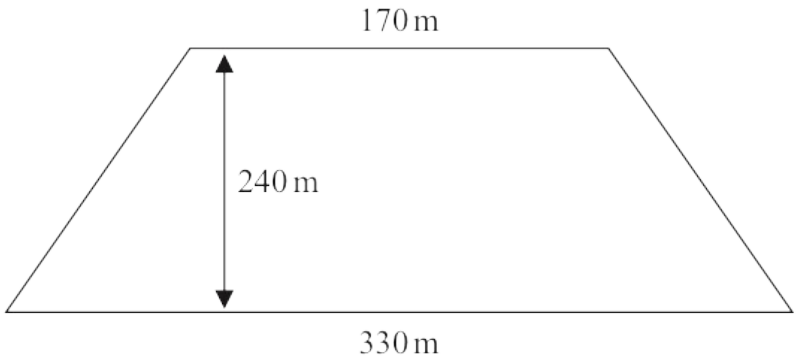


Diagram **NOT** accurately drawn

The field is sold for a price of $49 650

Given that 1 hectare = 10 000 m^2

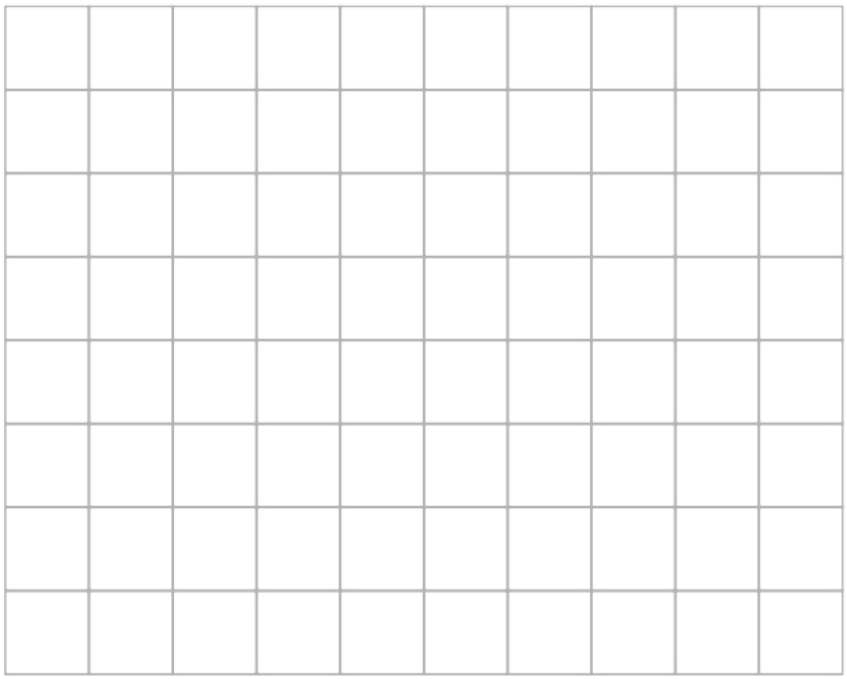
work out the average price of the field per hectare.

$

(Total for Question 20 is 4 marks)

6 Here is a centimetre grid.

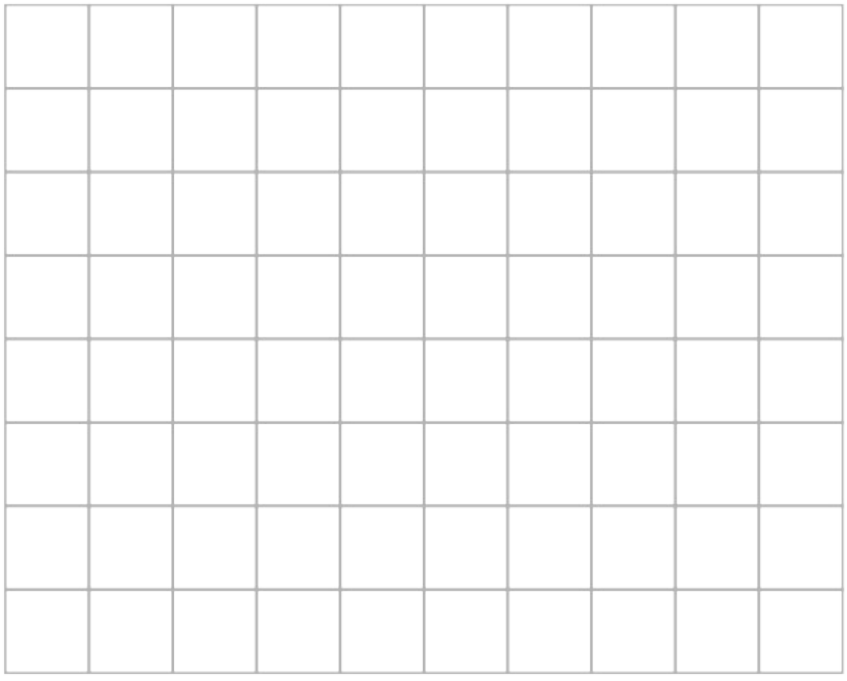
(a) On the grid, draw a right-angled triangle.



(1)

Here is a centimetre grid.

(b) On the grid, draw a rectangle with an area of $20\,cm^2$



(2)

26 The diagram shows a hexagon $ABCDEF$

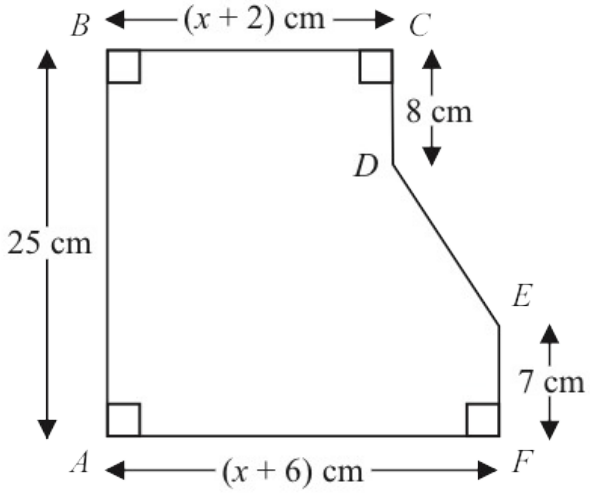


Diagram **NOT** accurately drawn

$AB = 25$ cm $BC = (x + 2)$ cm $CD = 8$ cm $EF = 7$ cm $AF = (x + 6)$ cm

The area of hexagon $ABCDEF$ is 258 cm^2

Work out the value of x

$x =$ .....

(Total for Question 26 is 5 marks)