Non-calculator Questions

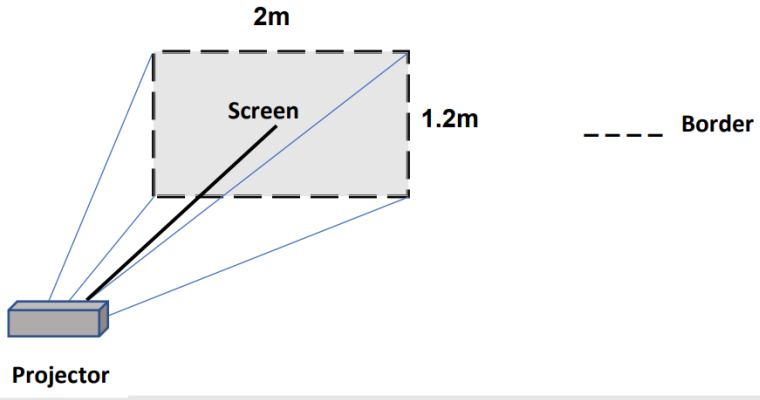
City & Guilds

1.

A community centre projects films on to a screen.

The manager wants to make a wooden border around the screen.

She needs to order the wood.



What length of wood does she need to order?

Show your working

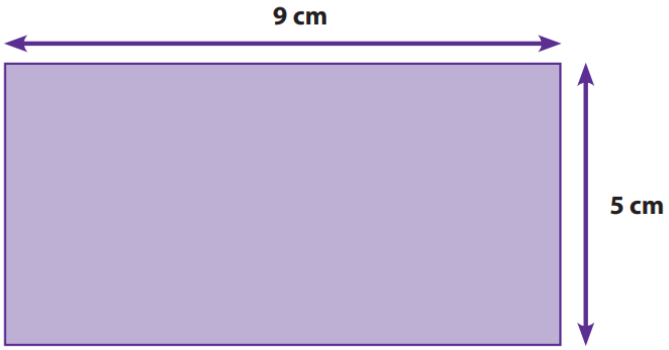
_____ m

(2 marks)

Highfield

2.

Calculate the area of this shape.



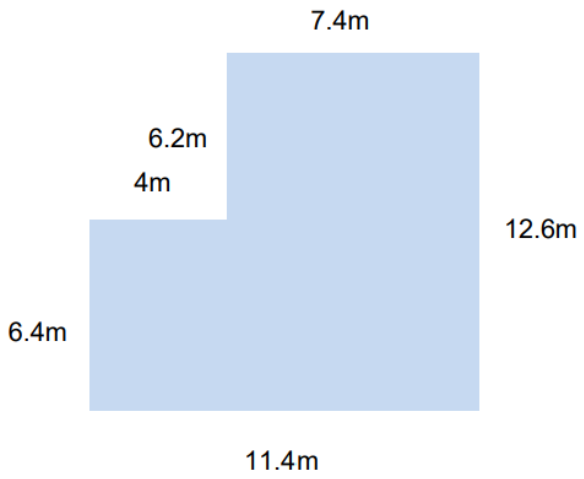
Write the answer in the box below. *(1 mark)*

Answer: _____ cm^2

Open Awards

3.

Diagram not drawn to scale



Calculate the perimeter of the shape. (2 marks)

Show your calculations and/or workings out here:

Write your answer in this box.

4.

Janice wants to buy new carpet for her bedroom. The bedroom is rectangular and has a floor area of $30m^2$.

Complete the table below to show the dimensions of her bedroom. (1 mark)

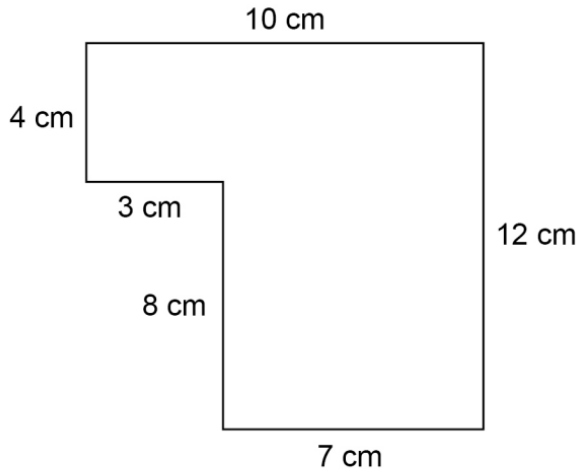
Bedroom	
Length	
Width	4m

Show your calculations and/or workings out here:

AQA

5.

Here is an L-shape.



Not drawn accurately

Work out the perimeter of the L-shape.

[2 marks]

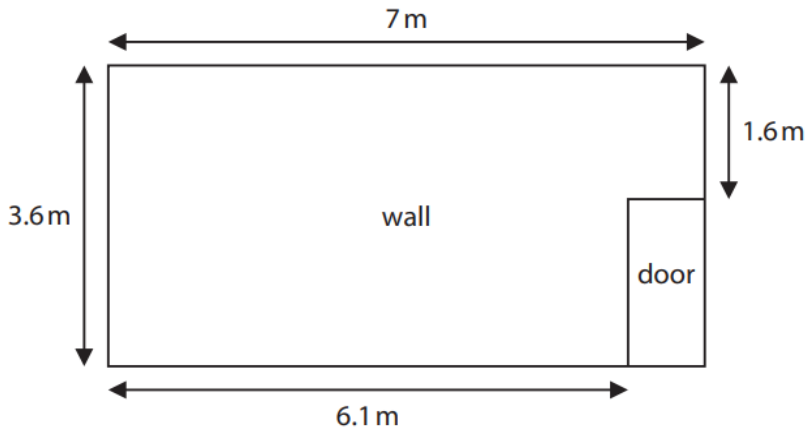
Answer _____ cm

Calculator Questions

Edexcel

1.

Luke wants to cover this wall with blue paint.



He will buy blue paint in 2.5 litre tins.
Each 1 litre of blue paint will cover 8 m^2 of the wall.

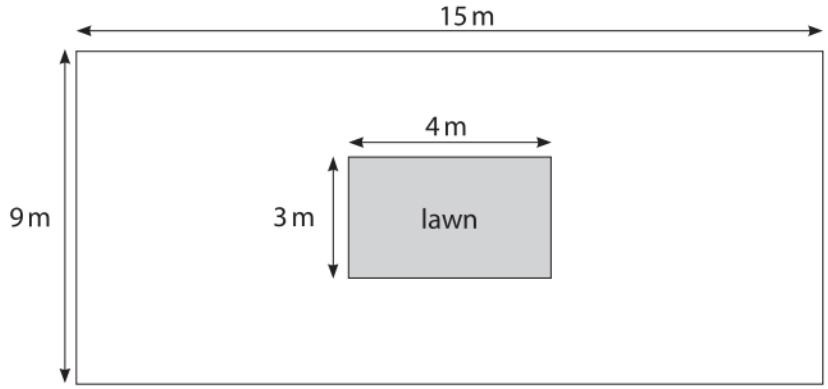
How many tins of blue paint does Luke need to buy?

(5)

tins

2.

Alfie sells flooring for playgrounds.
He has this diagram of a playground.



The playground is rectangular 9 m by 15 m.
The lawn is rectangular 3 m by 4 m.

Alfie will put flooring on all the space inside the playground but not on the lawn.
The flooring costs £36 per square metre.

Work out the total cost of the flooring.

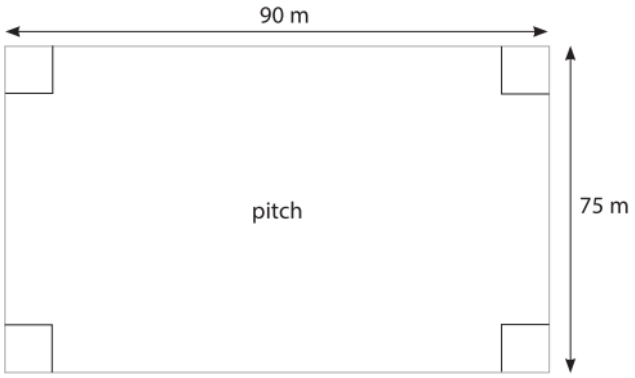
(5)

£

3.

Ali is preparing for a race.
He runs laps around a football pitch to prepare for the race.

The length of each lap is the total distance along the four edges of the pitch.



Ali needs to run at least 10 km.

(a) What is the minimum number of complete laps Ali should run?

(4)

☑

(b) Show a check of your answer.

(1)

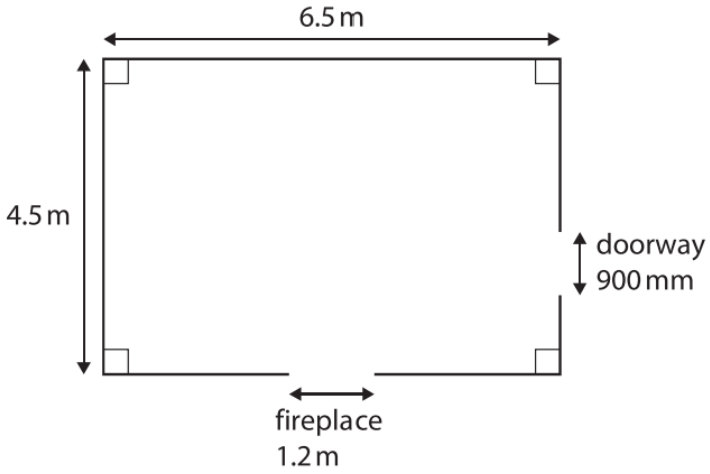
4.

Amy wants new skirting boards in her living room.

The skirting boards will

- go along the bottom of each wall
- not go across the doorway
- not go across the fireplace.

Amy has this sketch of her living room.



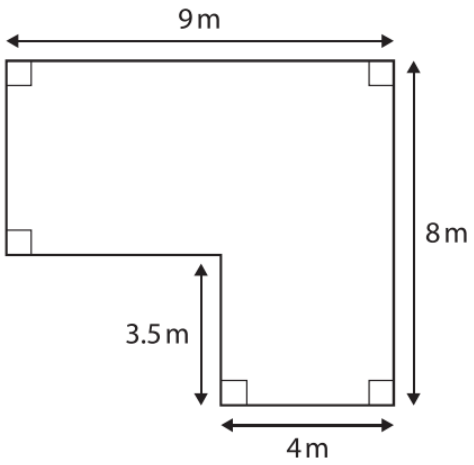
Skirting boards come in lengths of 2.4 m
The lengths of skirting board can be cut and joined.

How many lengths of skirting board does Amy need?
You **must** show your working.

(5)

5.

Lanza is a gardener.
She has this plan of a garden.



Lanza needs to put grass turf to cover this garden.
She charges £16 a square metre to put grass turf in a garden.

Lanza thinks she will need to charge more than £800 to put grass turf in this garden.

Is she correct?
Show why you think this.

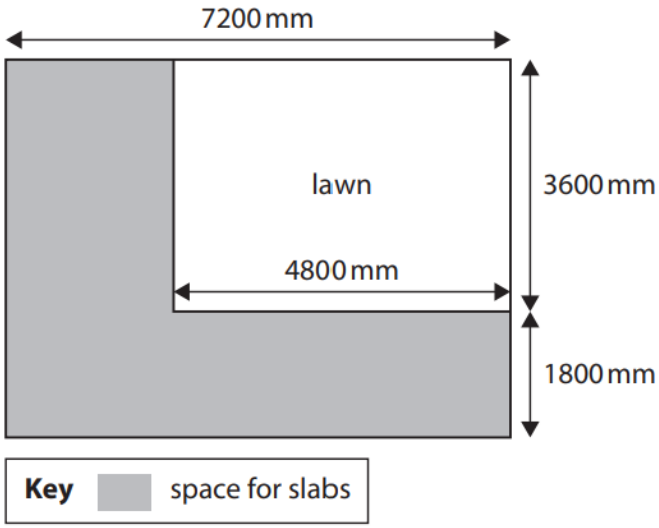
(5)

6.

Maninder wants to put slabs in part of her garden.

She has this sketch.

All corners are right angles.



Each slab is in the shape of a square with sides of length 600 mm.

Maninder thinks she needs 65 slabs for this part of the garden.

Are 65 slabs enough for this part of the garden?
Show why you think this.

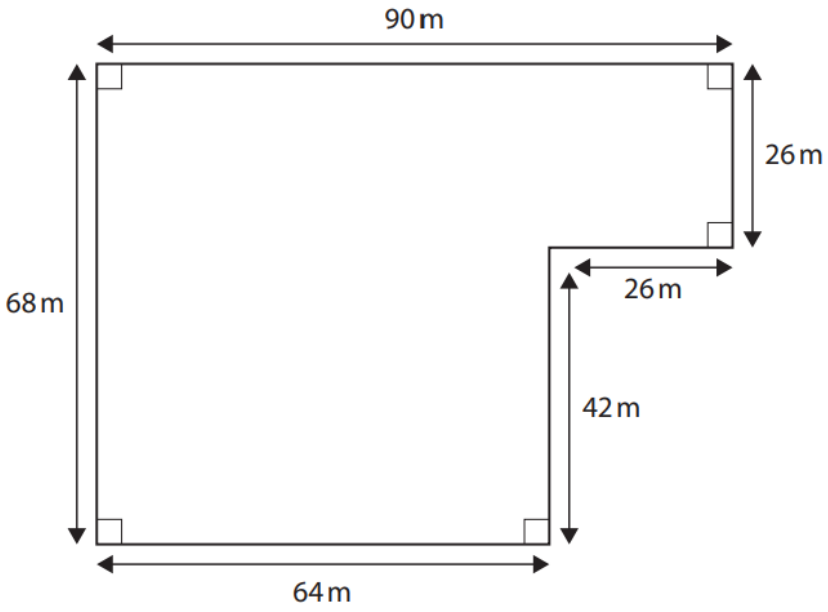
(6)

7.

George is a farmer.

He is going to put water piping along all the edges of a field.

George draws this sketch of the field



Water piping costs £0.59 per metre.

Calculate the total cost of the water piping George needs for this field.

(3)

£

NCFE

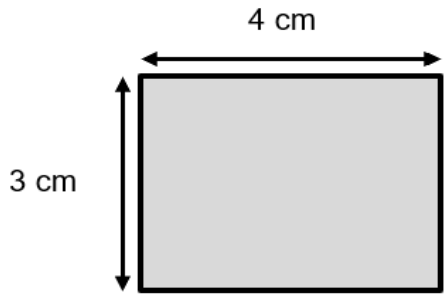
8.

John is opening a healthy-eating café.

He looks for a property with a seating area for 20 customers.

This is a scale plan of the seating area in one property he finds.

The drawing has a scale of 1 centimetre (cm) : 150 cm



The recommended maximum number of customers in a café is the seating area (m^2) divided by 1.5

Is this property suitable for 20 customers?
Show how you decide.

[5 marks]

Your answer:

past paper

9.

Sadie wants to put fencing around an area of grass where the hens can run about safely.

She has 22 m of fencing.

She reads that the minimum area for each hen to run about safely is 1.5 m^2

Sadie decides to make a square area of grass.

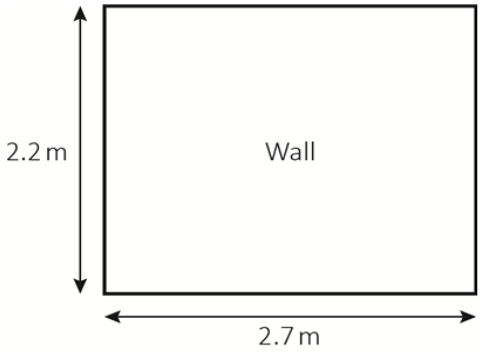
What is the greatest number of hens she could keep?

[4 marks]

Your answer: **hens**

10.

In a different room, one of the walls is 2.7 m long and 2.2 m high.



Not drawn accurately

Chester wants to put wallpaper on this wall.

He uses wallpaper that is 0.5 m wide and 12.1 m long.

Chester will hang the wallpaper vertically with no overlaps.
Each piece will go from ceiling to floor with no joins.

How many rolls of wallpaper will Chester need to buy?

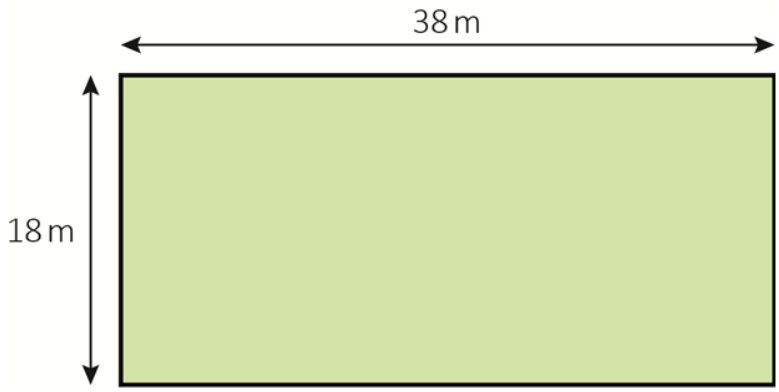
You **must** show your working.

[3 marks]

Your answer: **rolls**

11.

Before the first match starts, the perimeter of the football pitch needs to be marked out.



Not drawn accurately

Calculate the perimeter of the pitch.

[1 mark]

Your answer:	**m**

12.

A customer needs to buy a tank for his snake.

Zac has this information about the sizes of tanks:

Length of snake (to nearest cm)	Minimum floor area for one snake (cm^2)
0 to 30	300
31 to 40	400
41 to 50	600
51 to 75	1200
over 75	2500

The reptile centre sells these five sizes of tanks.

Size of tank	Length (cm)	Width (cm)	Price
Mini	18	11	£3.15
Small	23	15.5	£6.22
Medium	31	19.5	£9.95
Large	37	22	£13.99
Extra large	45	30	£18.99

Which is the cheapest tank the customer should buy for one snake which is 45 cm long? Show your working.

[3 marks]

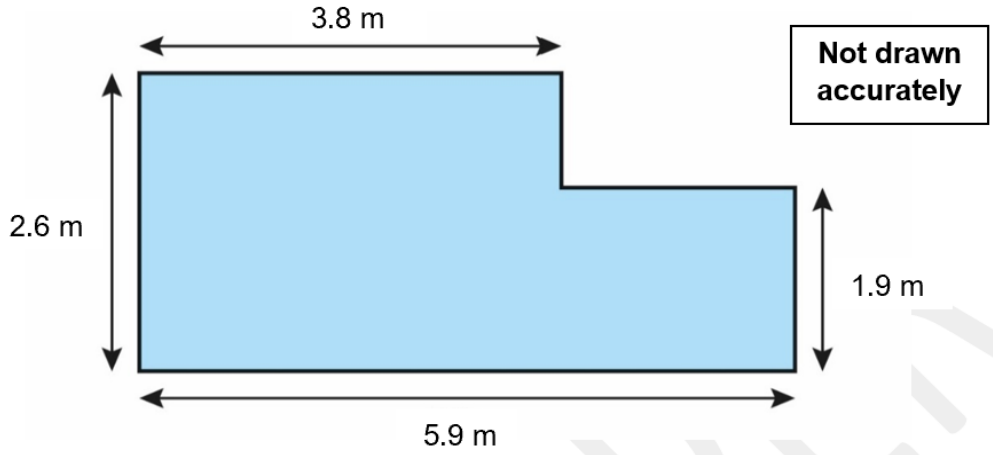
Your answer:

past paper

13.

Andy paints a wall in his kitchen.

He rounds all wall dimensions to the nearest whole number then uses the rounded numbers to estimate the area of the wall.



What value should Andy get for the total area of the wall using this method?

[4 marks]

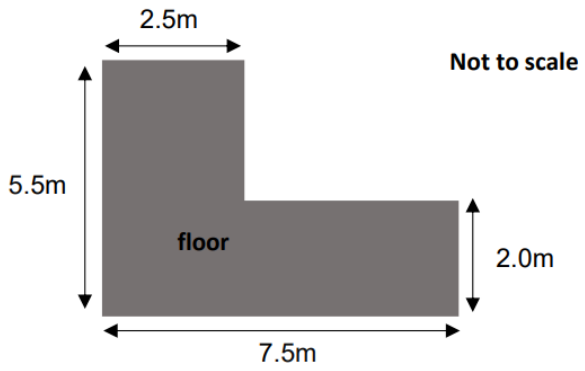
Your answer: **m^2**

PAST PAPERS

City & Guilds

14.

A carpet fitter needs to order some fixing strips to hold the carpet all around the edges of this floor.



He can cut and join fixing strips.

An online shop has packs of fixing strips on offer

Carpet Supplies Direct

Fixing strips: 6-metre packs
£7.99 per pack

*** Buy one get one free ***

Work out the total cost for the packs of fixing strips the carpet fitter needs to order.

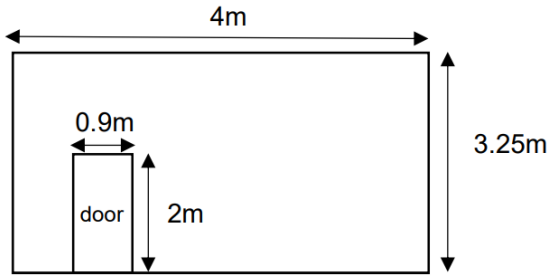
Show all your working.

Total cost £_____

(5 marks)

15.

A decorator is painting a room and has one wall left to paint.
They have enough paint to cover 12m². The dimensions of the wall are shown below:



Sketch not to scale

She will not paint over the door.

Do they have enough paint for the wall?

Explain your answer. Use figures in your answer.

Show your working

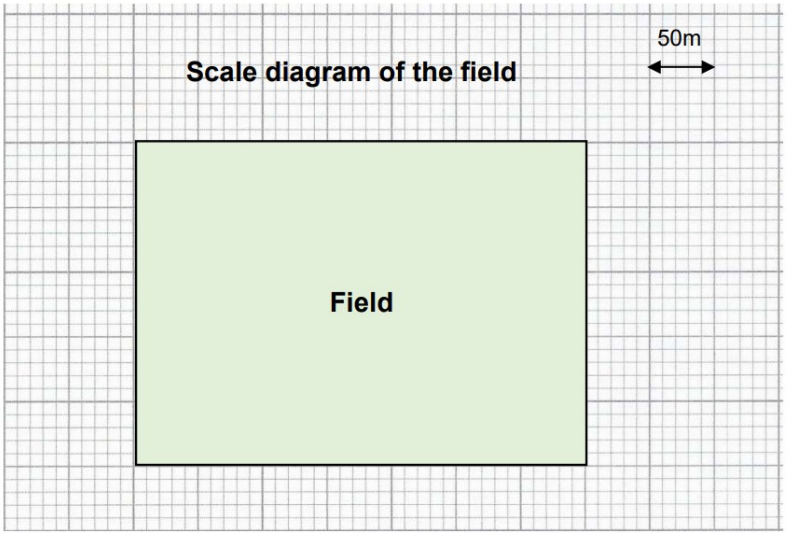
Do they have enough paint? *(tick one box)* **Yes** ☐ **No** ☐

Explanation

(4 marks)

16.

A local sports club organises a sponsored walk around the edge of a field.



Each person will walk round the field 5 times.

How far will each person walk in kilometres?

Show your working

_____ km

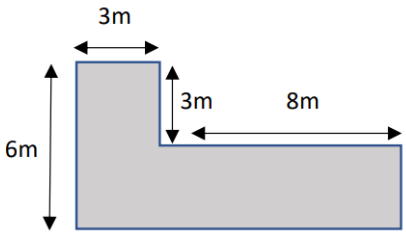
(4 marks)

17.

A man wants to buy bags of gravel to cover his driveway.

He decides to work out the area of his driveway.

1 bag of gravel covers $14m^2$



Sketch of driveway

Not to scale

What is the area of his driveway?

How many bags of gravel must he buy?

Show your working

Area of driveway _____ **m^2**

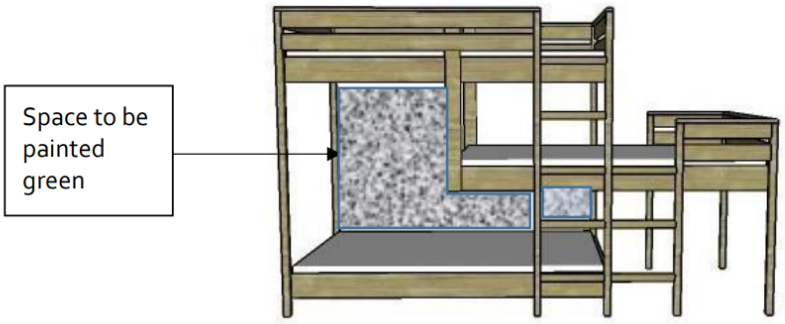
Number of bags of gravel _____

(4 marks)

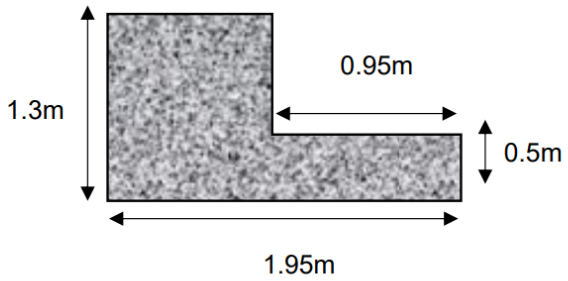
18.

A man needs to paint the wall behind the bunk bed with a different colour next to each level of the bed.

The lower level will be painted green.



He needs to work out the area of this space.



Sketch of wall area
Not to scale

What is the area that he will paint green?

Show your working

Area painted green _____ **m²**

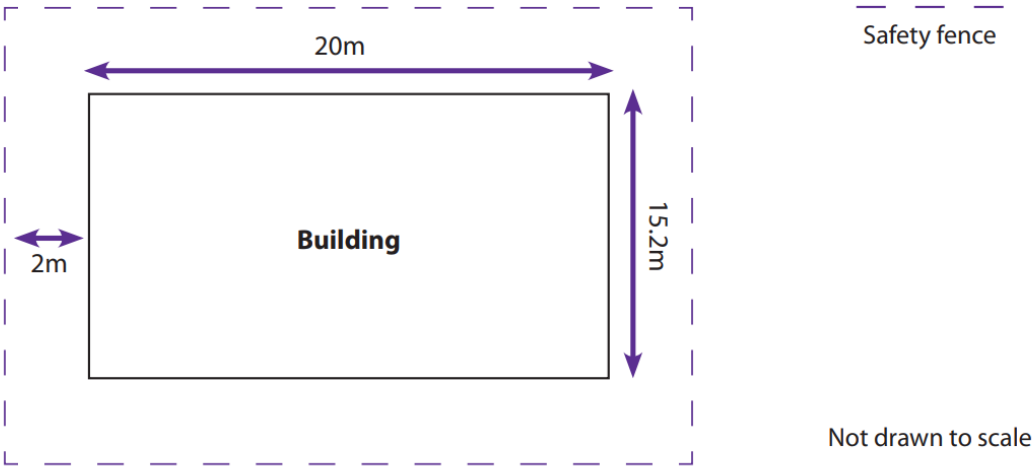
(3 marks)

Highfield

19.

The site manager has asked you to put a safety fence around the outside of a building.

You have this plan:



The safety fence must be 2 metres away from **each side** of the building.

The safety fence is made up of panels which are each 2.4 metres long.

How many panels will you need for the whole fence?

Show your working out and write your answer in the box below. ***(4 marks)***

Panels: _____

20.

You work at Highfield Castle.

As part of your job, you walk round the perimeter of the castle to perform security checks.

Below is a diagram of the castle. The main section and each of the turrets are squares.

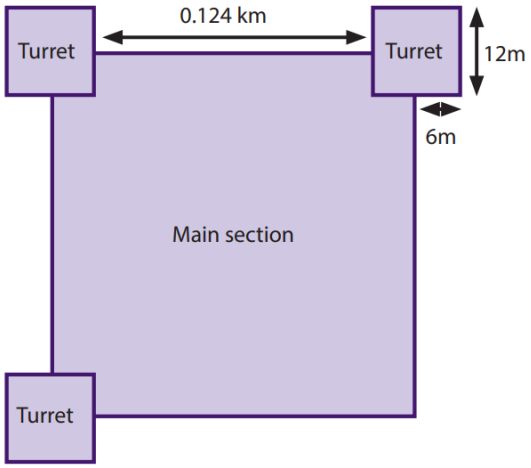


Diagram not to scale

How far do you walk on each security check? Give your answer in metres.

Show your working out and write the answer in the box below. ***(5 marks)***

Answer:_____ **m**

21.

You are hired for another job to build the roof on a new football stadium.

They give you this plan of the stadium.

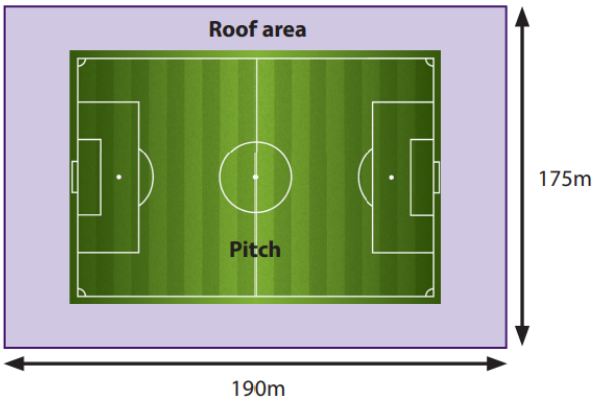


Diagram not to scale

The pitch dimensions are 105m x 70m.

The roof will be made up of panels that are 50cm x 50cm.

How many panels will be needed for the entire roof?

Show your working out and write the answer in the box below. ***(6 marks)***

Answer: _____ panels

22.

You are helping at the Highfield Country Show.

The showground needs a fence to be put up around an animal pen.

The animal pen is made up of a square, with a rectangle added on with gates.

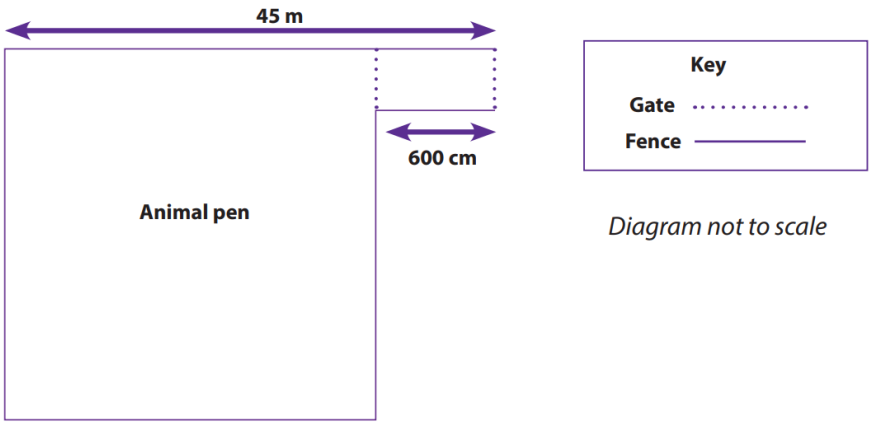


Diagram not to scale

The gates are 300 cm wide.

Each fence panel is 1.5m long.

How many fence panels will you need?

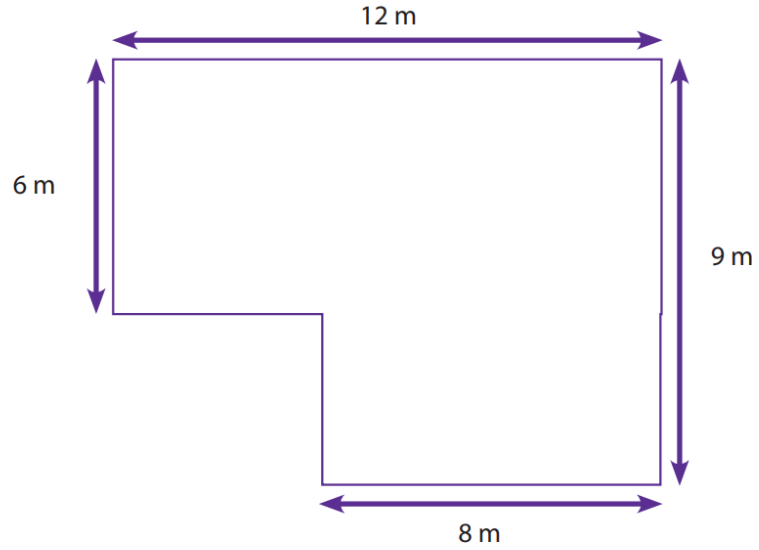
Show your working out and write the answer in the box below. ***(5 marks)***

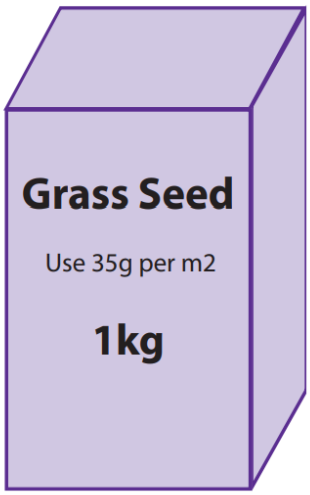
Answer: _____

23.

A customer wants their garden planted with grass seed.

They give you this plan of the garden.





How many boxes of grass seed will you need to buy?

Show your working out and write the answer in the box below. ***(6 marks)***

Answer: _____

24.

Calculate the perimeter of this square.

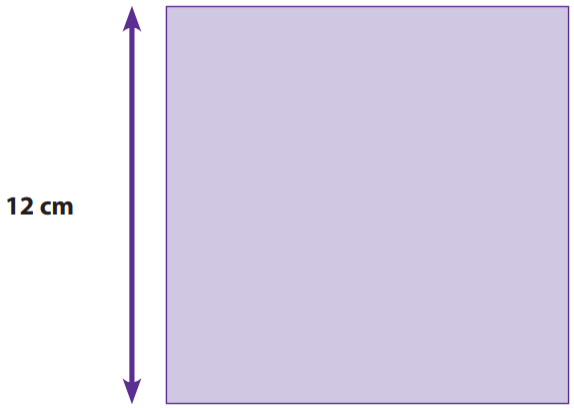


Diagram not to scale

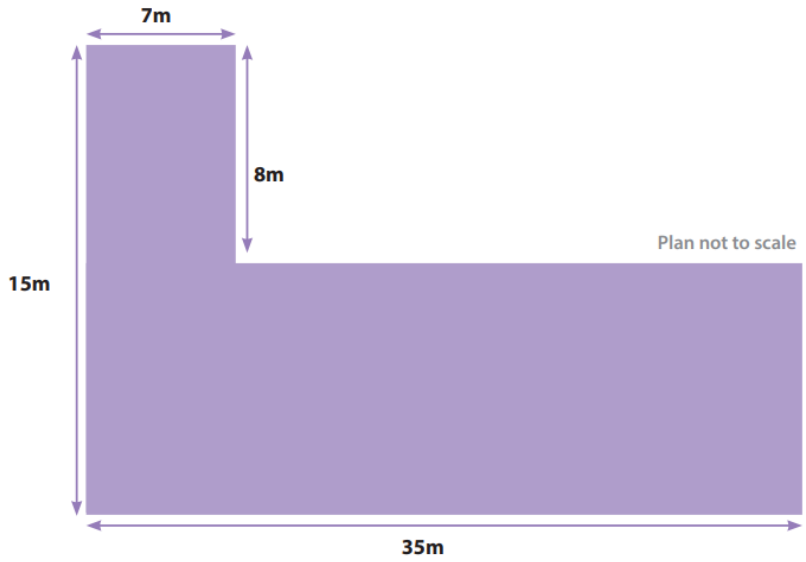
Show your working out and write the answer in the box below. ***(2 marks)***

Answer: _____cm

25.

Shops that have a floor area greater than $280m^2$ can only open for a maximum of 6 hours on a Sunday.

This is a floorplan of the shop called Townsman:



Can Townsman open for more than 6 hours on a Sunday?

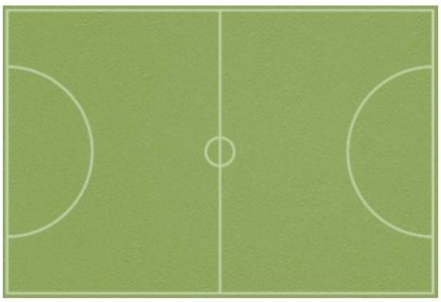
Show your working out and write the answer in the box below. ***(3 marks)***

Answer: _____

Open Awards

26.

The players in Ryan's team warm up before the charity match by running at least 1km around the edge of the pitch. How many full laps of the pitch will they need to run?
(3 marks)



18m

36m

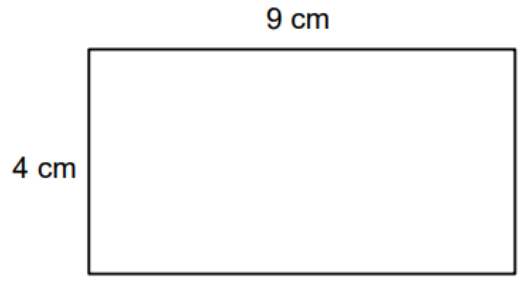
Show your calculations and/or workings out here:

Write your answer in this box.

AQA

27.

Here is a rectangle.



Not drawn accurately

Work out the perimeter.

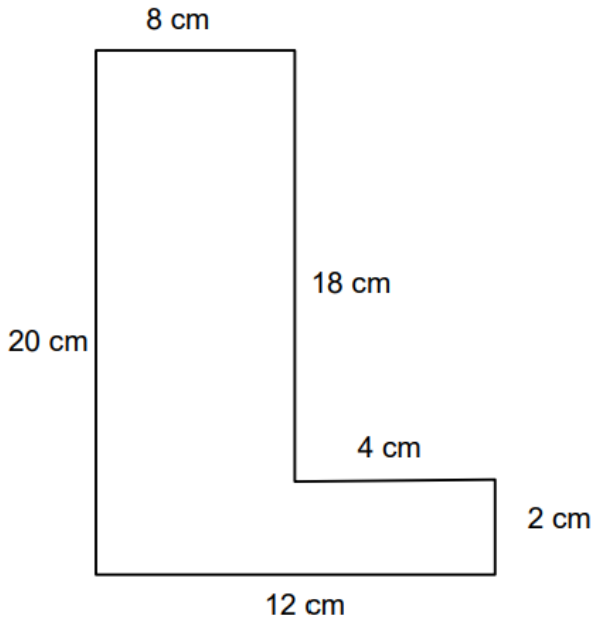
Circle your answer.

[1 mark]

13 cm 26 cm 36 cm 72 cm

28.

Here is an L-shape.



Work out the area of the L-shape.
State the units of your answer.

[3 marks]

Answer _____

29.

Beth is a gardener.

Here is a sketch of a rectangular garden she is designing.

Not drawn accurately

Beth wants to cover one third of the area of the garden with lawn turf.

Lawn turf costs £2.75 per square metre.

It can be cut to fit any area.

Work out the cost of the lawn turf she will need.

[4 marks]

Answer £ _____

30.

Megan is starting a new dance class.

The floor space available for the dancers is a rectangle measuring 13.8 m by 7.1 m

Each dancer needs 4 m^2 of floor space.

Work out the maximum number of dancers that can be in the dance class.

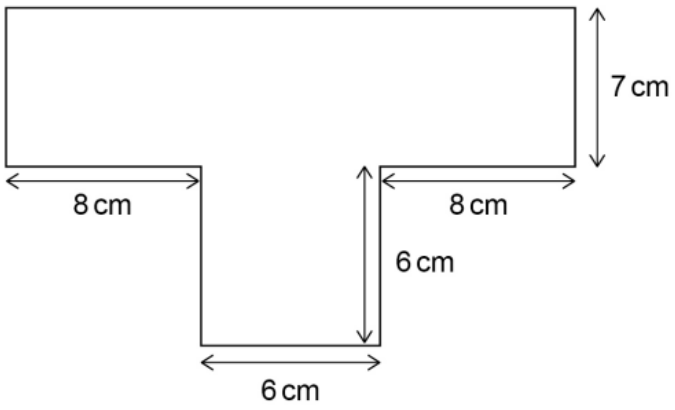
[4 marks]

Answer _____

31.

Brandon is making a birthday cake in a T shape.

Here is a plan view of the cake.



Not drawn accurately

Brandon has enough icing for an area of 200 cm^2

Does he have enough icing for the top of the cake?

You **must** show your working.

[4 marks]