

- 1) a)  $312\text{cm}^2$                       b)  $520\text{m}^2$                       c)  $15\text{m}^2$



- 2) *Answers will vary but may include rectangles with the following measurements:  
 $1\text{cm} \times 30\text{cm}$ ,  $2\text{cm} \times 15\text{cm}$ ,  $3\text{cm} \times 10\text{cm}$ ,  $5\text{cm} \times 6\text{cm}$*

- 1)  If a square and a rectangle whose sides are not all equal have the same area, they will have the same perimeter.  
*They could have different perimeters.*
- A square can never have an area greater than  $9\text{cm}^2$  but less than  $16\text{cm}^2$ .  
*They could have sides of between  $3\text{cm}$  and  $4\text{cm}$  in length.*
- If I cut an  $80\text{cm}^2$  rectangle into 2 new rectangles, they will have a combined area of  $80\text{cm}^2$ .



- 2)  *$6\text{cm}$  and  $18\text{cm}$*

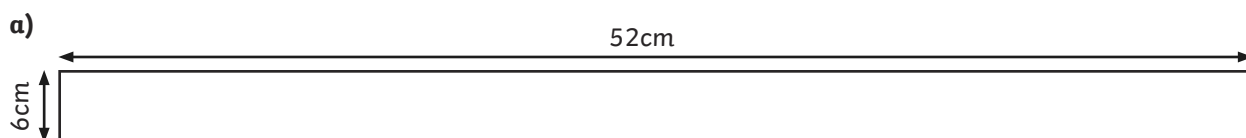
- 1) Garage:  $60\text{m}^2$   
 Living Room:  $144\text{m}^2$   
 Hallway:  $36\text{m}^2$   
 Kitchen:  $60\text{m}^2$   
 Total Area:  $300\text{m}^2$



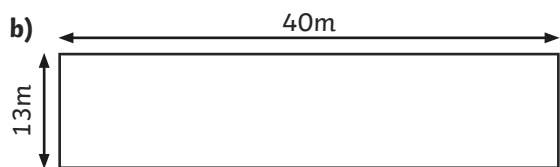
- 2) *Children will find different solutions to this problem. The total area of the four rooms should be  $300\text{m}^2$ .*



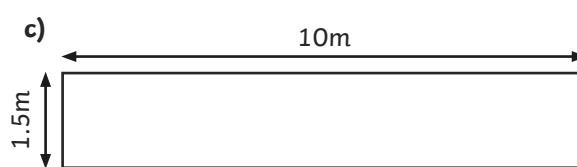
1) Calculate the area of the following rectangles:



area = \_\_\_\_\_

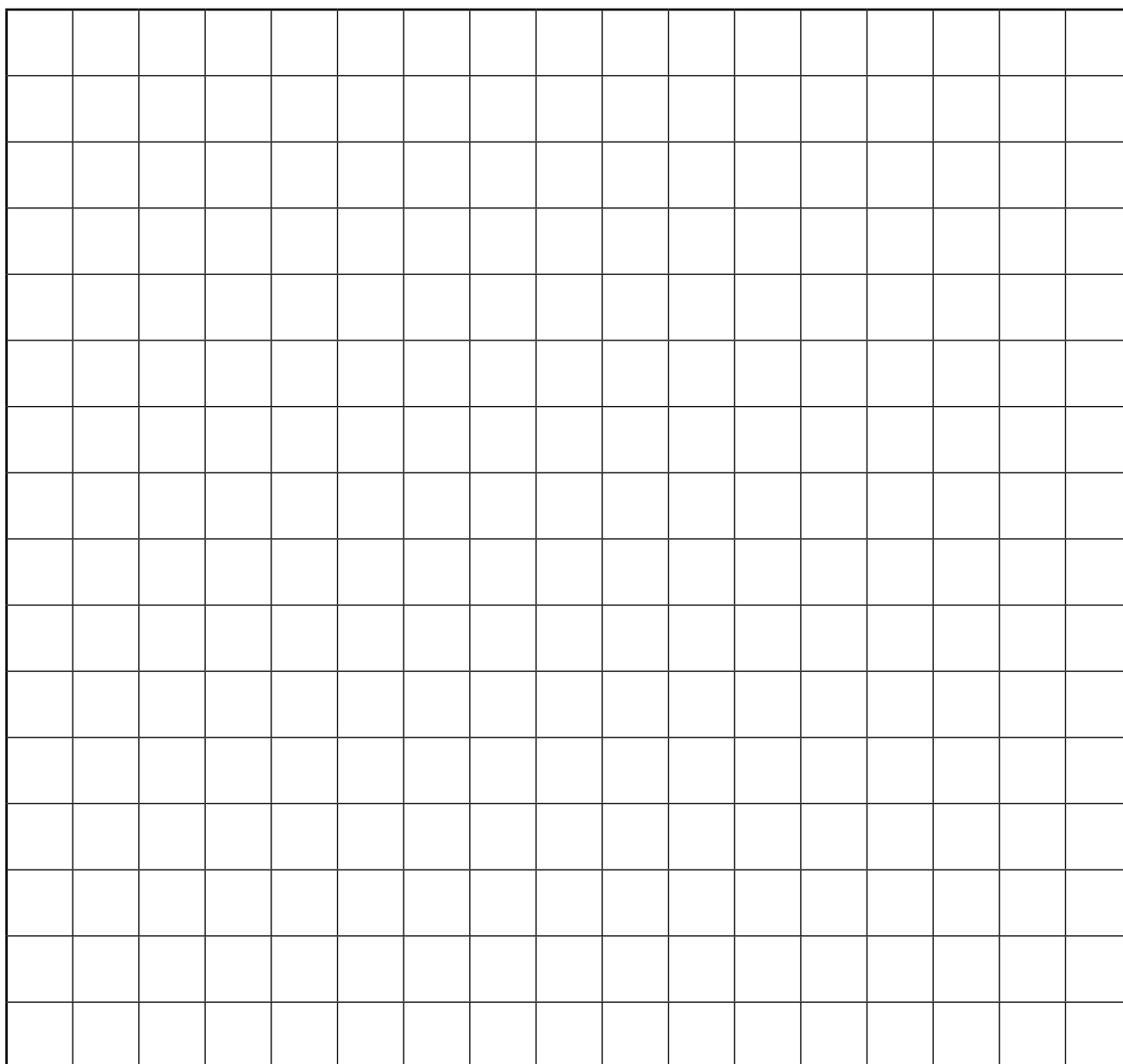


area = \_\_\_\_\_



area = \_\_\_\_\_

2) Draw 3 different rectangles with an area of  $30\text{cm}^2$  on squared paper and label the lengths of their sides.

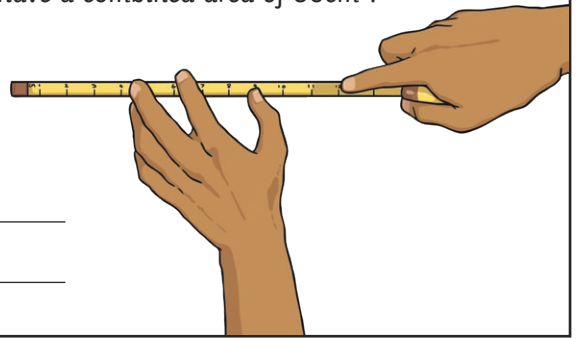


1) Tick the correct statements. Correct the incorrect statements.

- If a square and a rectangle whose sides are not all equal have the same area, they will have the same perimeter.
- A square can never have an area greater than  $9\text{cm}^2$  but less than  $16\text{cm}^2$ .
- If I cut an  $80\text{cm}^2$  rectangle into 2 new rectangles, they will have a combined area of  $80\text{cm}^2$ .



2) A rectangle has an area of  $108\text{cm}^2$ .  
The long sides are three times longer than the short sides.  
Find the lengths of the sides.



\_\_\_\_\_

\_\_\_\_\_

1) Here is the layout of one floor of a house not drawn to scale.



Use the clues below to work out the area of each room and the total area of this floor of the house.

- The garage and the kitchen are identical rectangles.
- The whole house is 20m long and 15m wide.
- The garage has walls of 15m and 4m.
- The living room is a square.

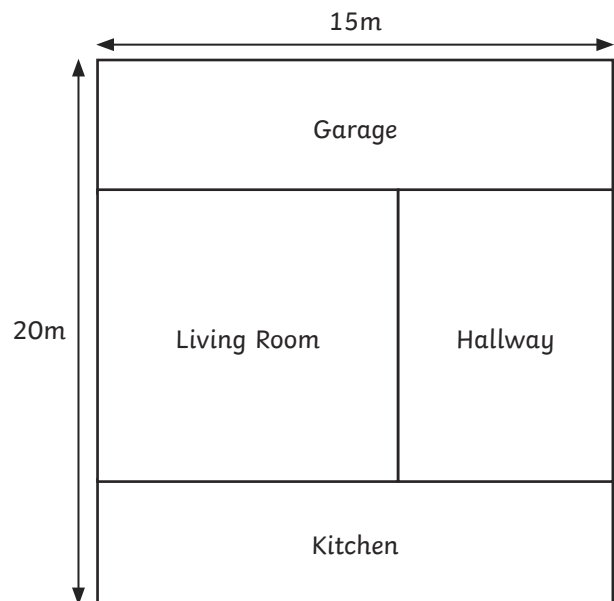
Garage: \_\_\_\_\_

Living Room: \_\_\_\_\_

Hallway: \_\_\_\_\_

Kitchen: \_\_\_\_\_

Total Area: \_\_\_\_\_



2) Investigate a different way of dividing up the house into four rooms. The length and width of the whole house and its total area should be the same as in question 1. Write some clues for a friend to solve.

\_\_\_\_\_

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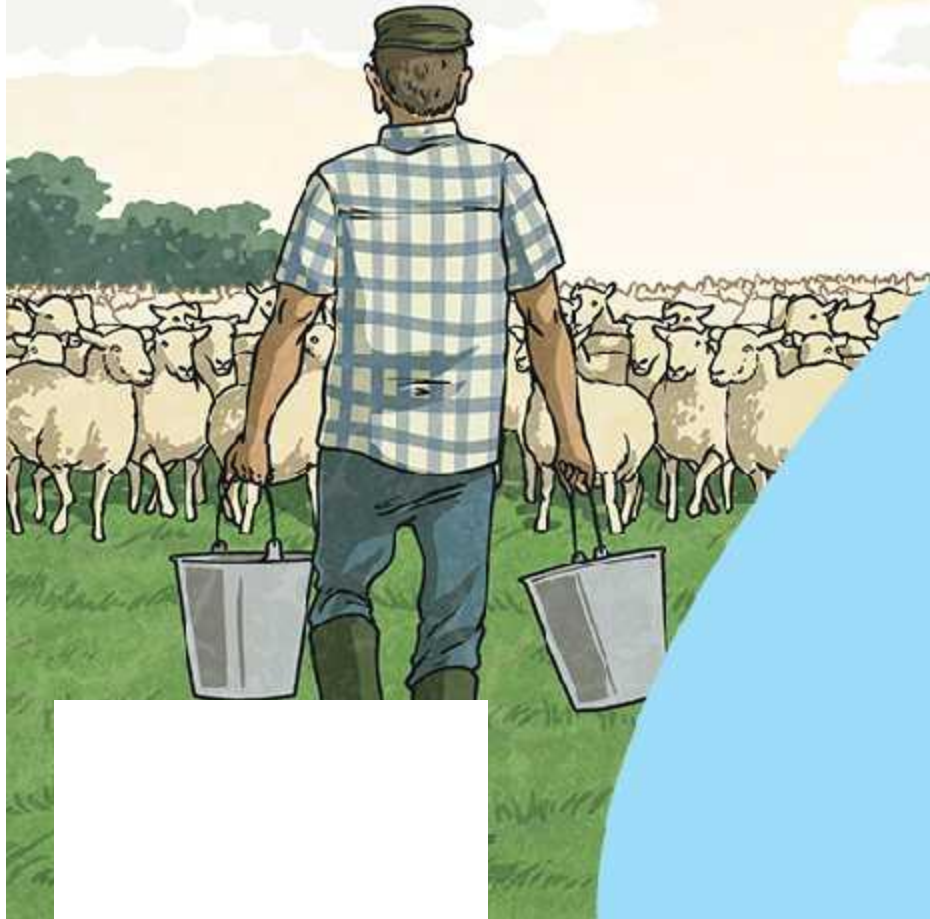
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Diving into Mastery



# Area of Rectangles

# Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:



**Diving**



**Deeper**



**Deepest**

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.



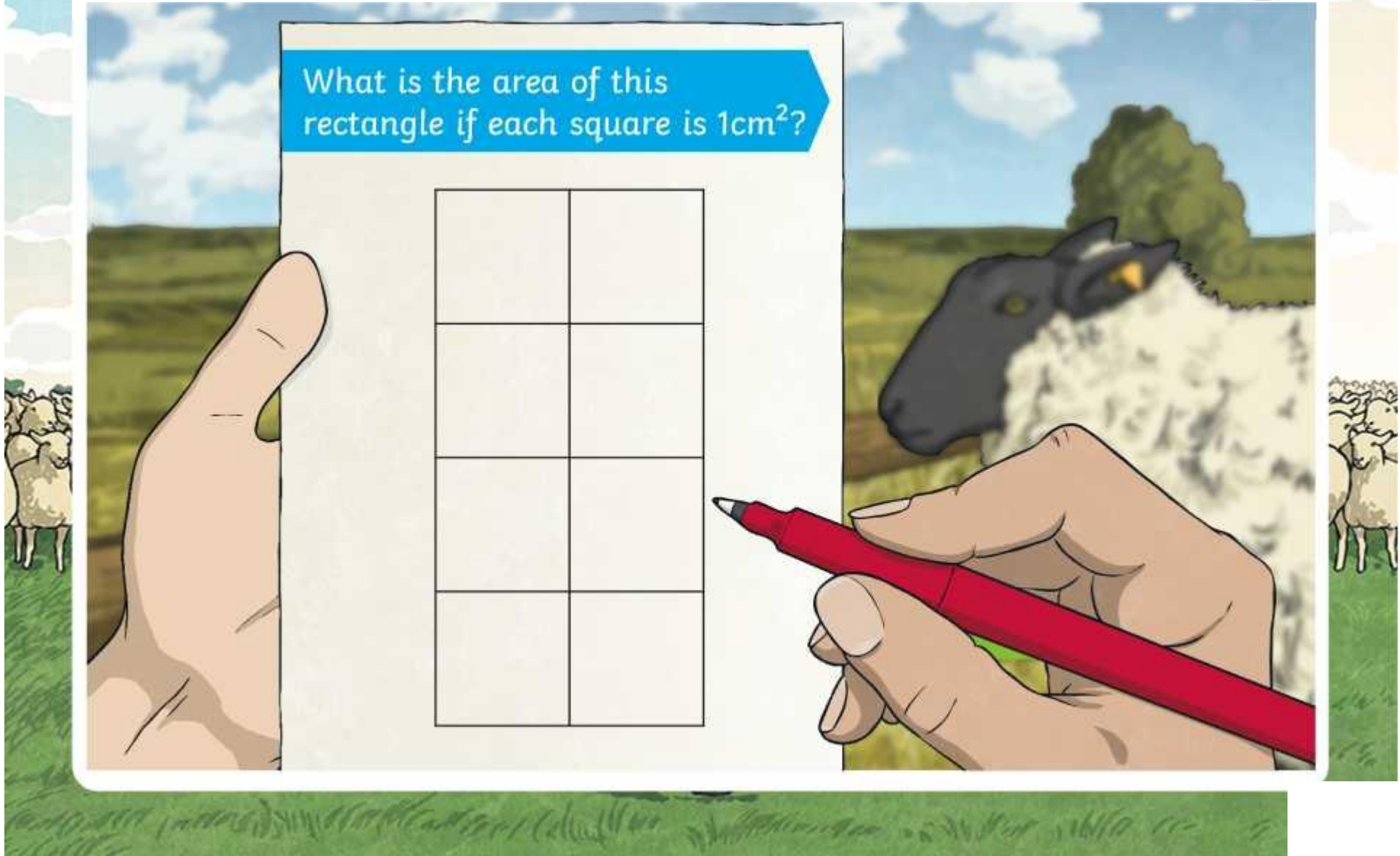
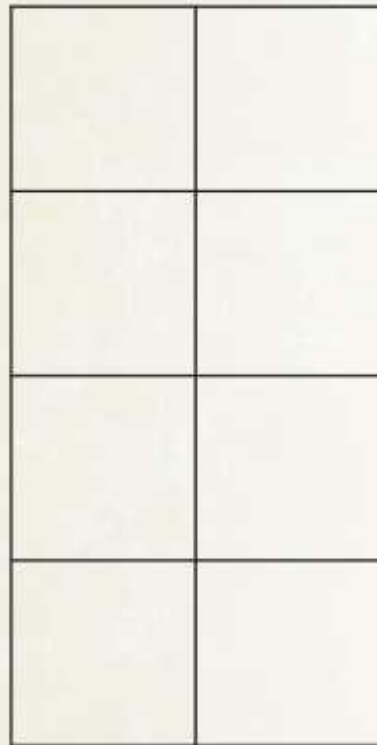
# Aim

- Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres and square metres and estimate the area of irregular shapes.





What is the area of this rectangle if each square is  $1\text{cm}^2$ ?

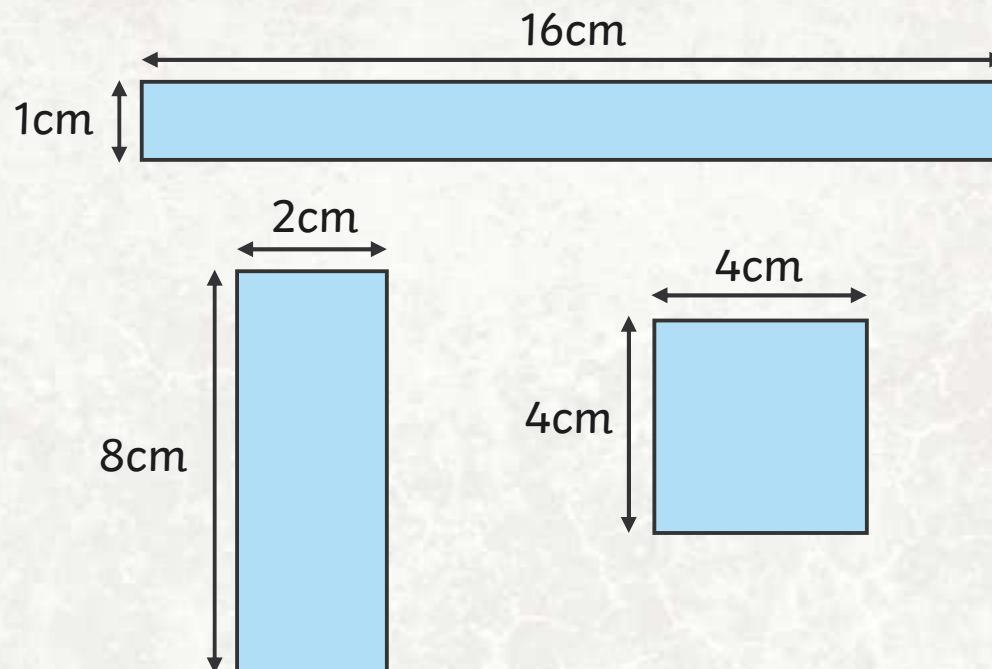






What do these rectangles (including the square) have in common?

They all have an area of  $16\text{cm}^2$ .







Which statements are false?

**True.**

**False.** Squares (rectangles with four equal sides) can have greater areas than other rectangles.

**False.** A  $1\text{cm} \times 20\text{cm}$  rectangle has the same area as a  $4\text{cm} \times 5\text{cm}$  rectangle.

If the side lengths of a rectangle are not whole numbers, but decimal numbers, then we can still use the multiplication rule to find the area.

If a rectangle's sides are not all the same length, it will always have a greater area than a rectangle which has all sides equal.

A rectangle with a  $1\text{cm}$  side will always have a smaller area than a rectangle whose shortest side is  $4\text{cm}$ .



A rectangle has an area of  $72\text{cm}^2$ .

Its longest side is double the length of its shortest side.

What do its sides measure?



12cm

6cm

## Area of rectangles

## Deepest



The pigs' field is a square with sides 60m long.

The cows' and sheep's fields are identical rectangles.

The sheep's field is 80m along its longest side.

Can you use this information to work out the area of each field and the total area of the fields together?

Pigs:  
 $60\text{m} \times 60\text{m}$   
 $= 3600\text{m}^2$

Sheep:  
 $80\text{m} \times 30\text{m}$   
 $= 2400\text{m}^2$

Cows:  
same size as  
sheep's field  
 $= 2400\text{m}^2$

Total  
 $= 8400\text{m}^2$

Look at the view of these fields from above:



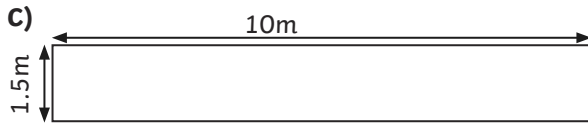
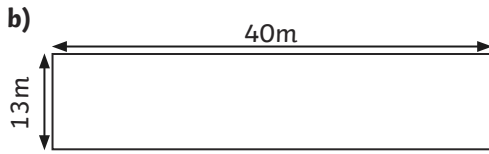
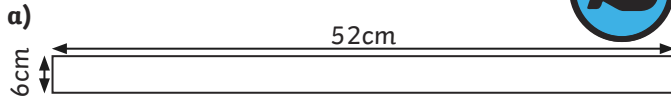






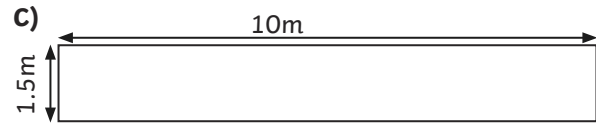
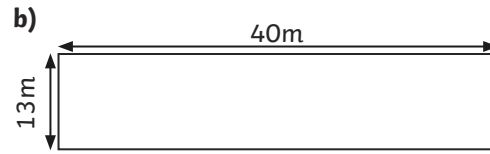
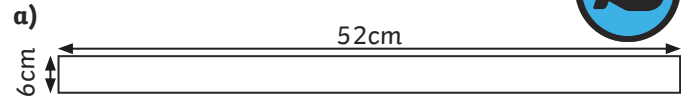


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Correct the incorrect statements.



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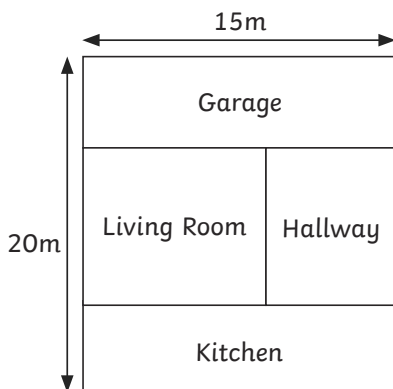
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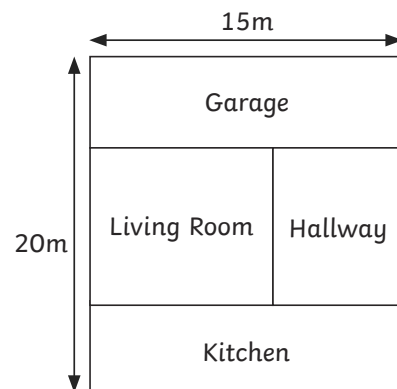
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