

# Chapter 13b

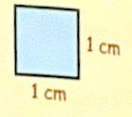
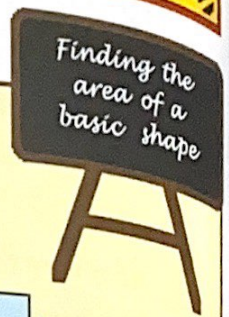
## Area

### Area Revision

The **AREA** of a flat shape is simply defined as  
 "the amount of space it takes up".

If you think of a square 1 cm by 1 cm, we say it has an area of  
**1 square centimetre** (or  $1 \text{ cm}^2$  for short).

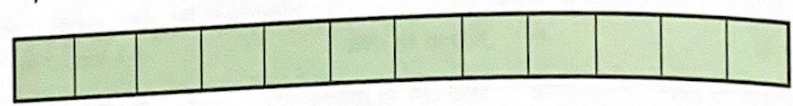
note - ( $1 \text{ cm}^2$  reads as "1 square centimetre").



### Exercise 1

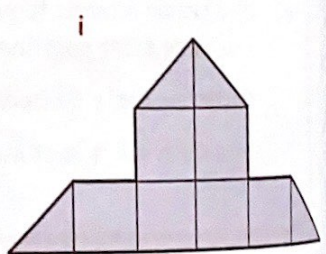
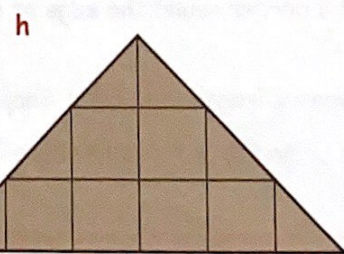
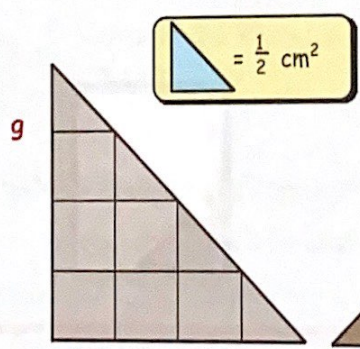
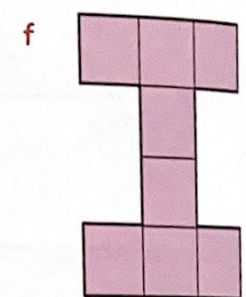
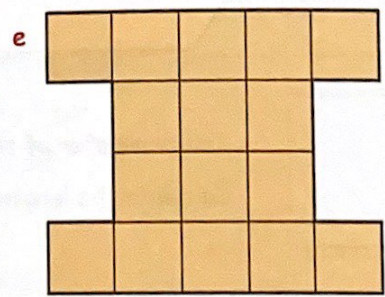
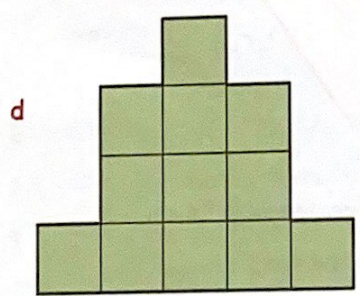
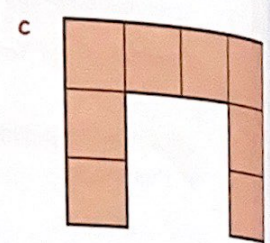
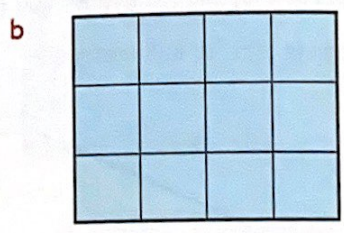
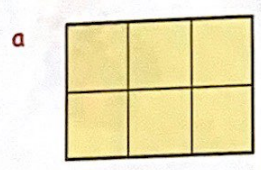
Each box in this exercise represents  $1 \text{ cm}^2$ .

1. a How many boxes ( $1 \text{ cm}$  by  $1 \text{ cm}$ ) are shown here ?



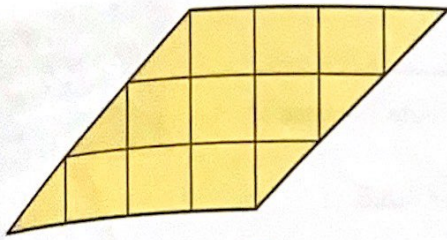
b Write down the **area** of the shape in square centimetres :- Area = .....  $\text{cm}^2$ .

2. Write down the **areas** (use  $\text{cm}^2$ ) of each of the following shapes :-

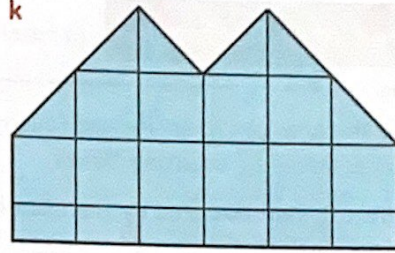




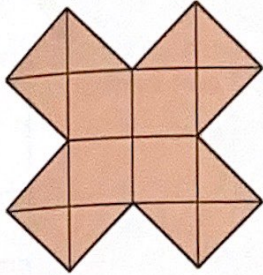
2. j



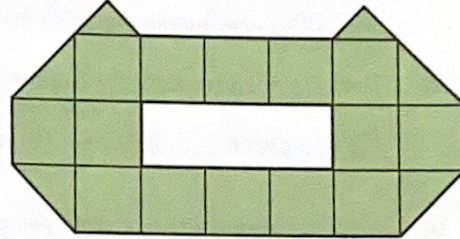
k



l



m careful!



3. Estimate the **areas** of these shapes as follows :-

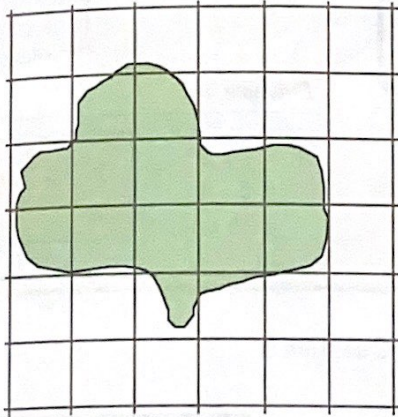
If **more** than  $\frac{1}{2}$  a box is covered  $\rightarrow$

**count it as 1 cm<sup>2</sup>**

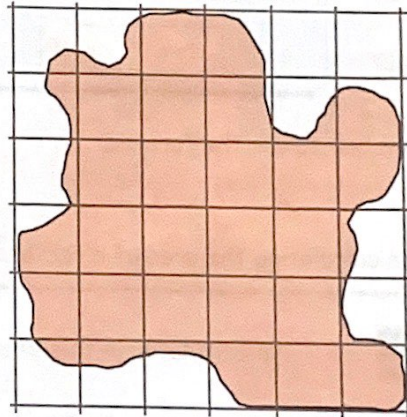
If **less** than  $\frac{1}{2}$  a box is covered  $\rightarrow$

**do not count it at all**

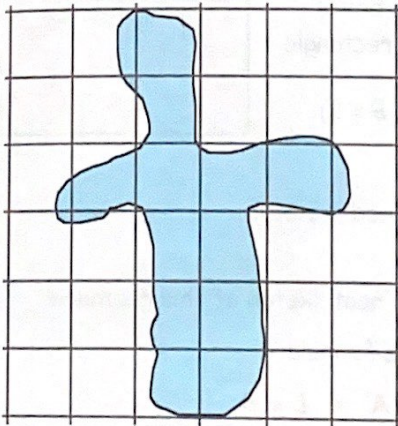
a



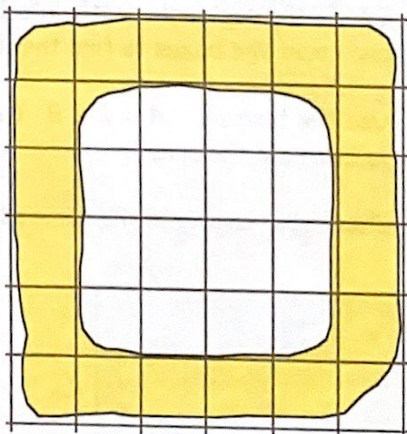
b



c



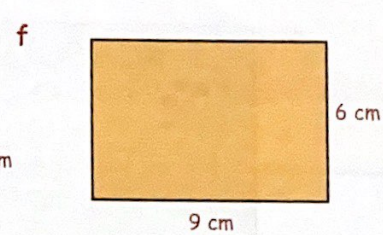
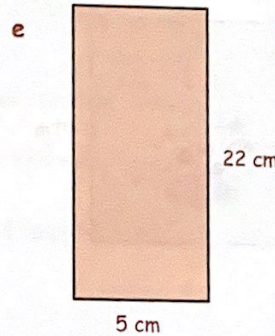
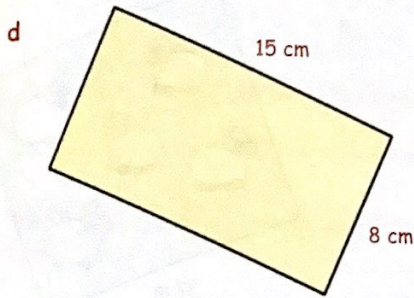
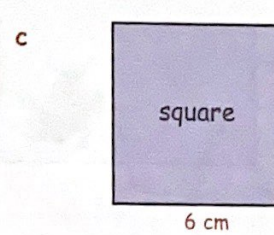
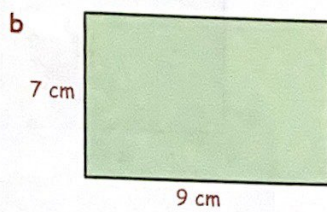
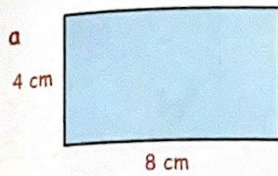
d





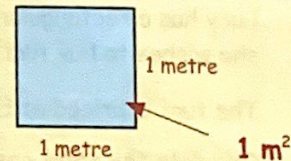
3. Calculate the area of each of the following rectangles.  
In each case, make a small "sketch" of the rectangle first.

Write down and use the rule " $A = L \times B$ " to calculate the area in  $\text{cm}^2$ .



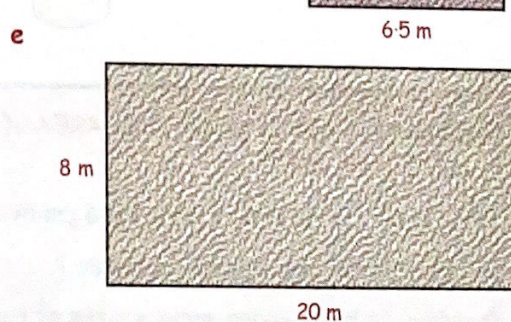
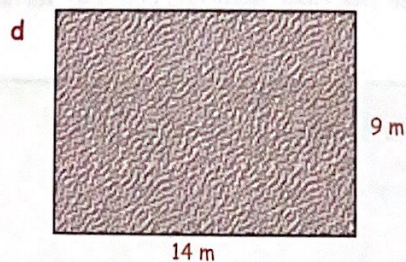
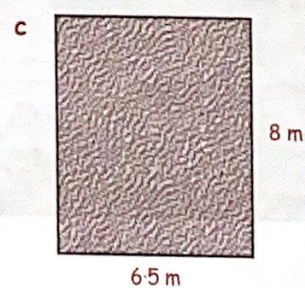
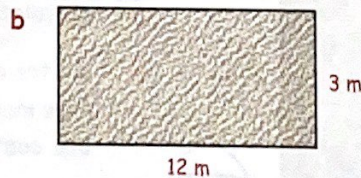
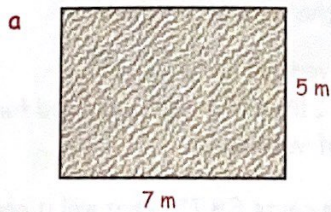
If the length and breadth of the shape are given in metres, then the area will be in **square metres**.

=> The **area** of a box 1 metre by 1 metre would be  $1 \text{ m}^2$



4. A carpet fitter has to lay carpets in 5 rooms in a hotel.

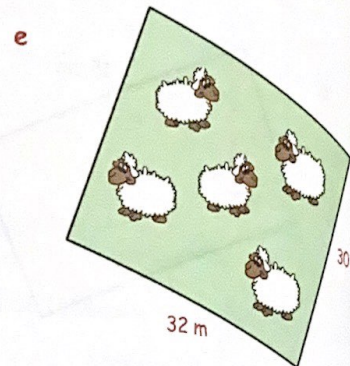
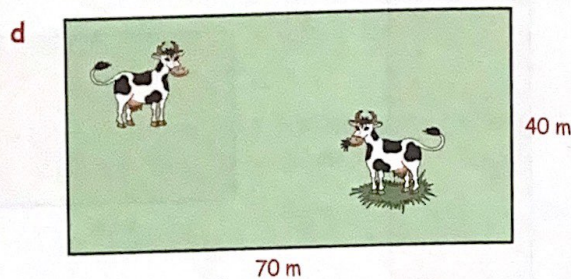
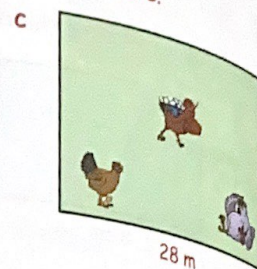
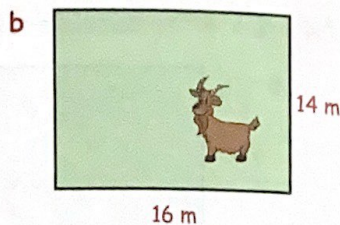
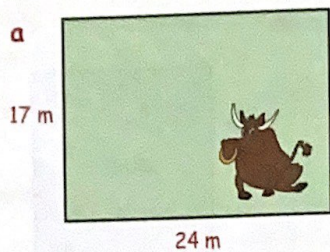
Use the formula ( $A = L \times B$ ) to help him calculate the **area** of each of the rooms (in  $\text{m}^2$ ).



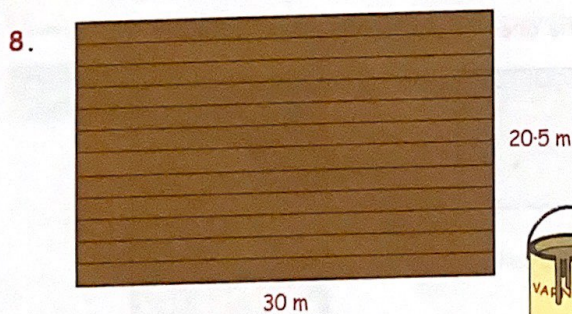
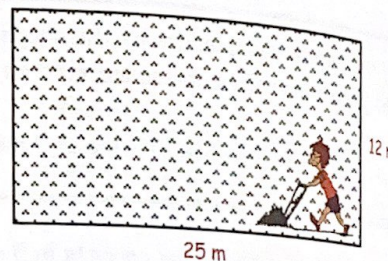
5. He charges £10 per  $\text{m}^2$  for the carpet, including fitting.  
How much must the hotel owner pay him **altogether** for his work?



6. A farmer needs to spread manure on his field. He must work out the area of each field. Calculate the **area** of each of his fields, in  $m^2$  :- *You may use a calculator here.*



7. Lucy has a rectangular plot of land for which she wishes to buy turf to create a new lawn. The turf is priced at £1.35 per  $m^2$ . Calculate the **total cost** of turf required.



- Davie decides to varnish the Scout Hall floor.
- Calculate the **area** of the floor.
  - A litre of varnish covers  $15 m^2$ . How many 1 litre tins will be needed for one coat of varnish?
  - If each tin costs £8.75, what will it cost to cover the floor with **two** coats of varnish?

- 9.
- Numerically, which is bigger - the **AREA** of a rectangle measuring 3 cm by 5 cm, or its **PERIMETER**?
  - What about a rectangle measuring 6 cm by 2 cm?
  - Is this true for any size of rectangle?  
**Investigate** by studying various sizes of rectangles.
  - What about squares? - Investigate.