S2 Home Learning

Area

Remember :-

If the length and breadth are in cm => Area is in cm^2.

If the length and breadth are in mm => Area is in mm^2.

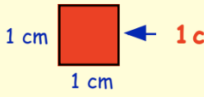
If the length and breadth are in m => Area is in m^2.

Counting Squares

https://youtu.be/p8gblx7QY24 – video notes

The **AREA** of a shape can be defined as :-

"the amount of space it takes up"

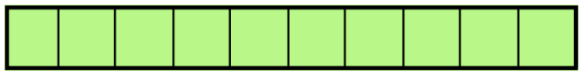


If you think of a box 1 cm by 1 cm, we say it has an area of :- **1 square centimetre**

(or **1 cm^2** for short).

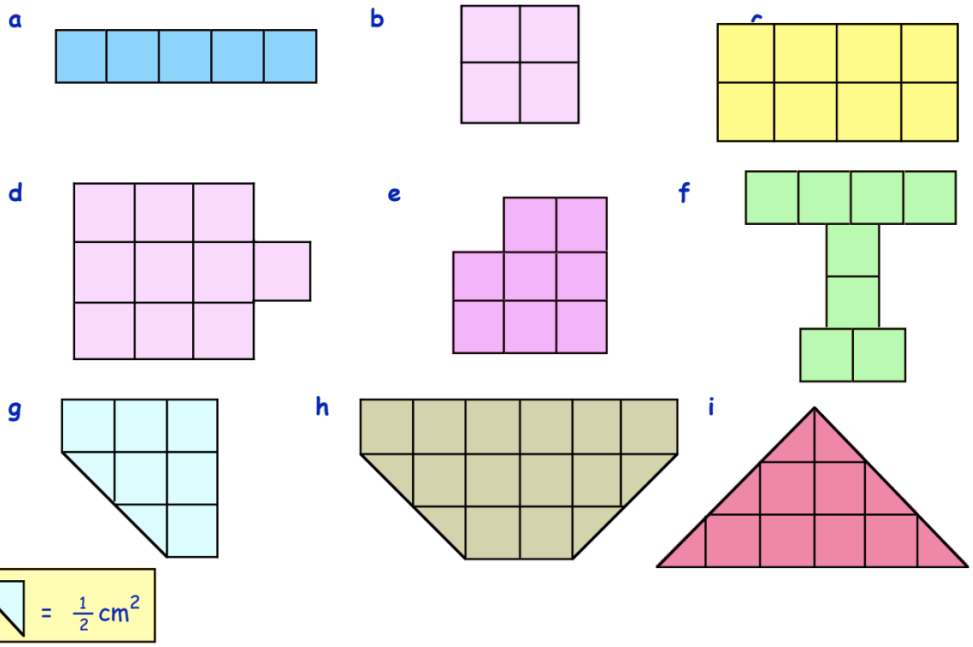
(**Note :-** 1 cm^2 reads as "1 square centimetre")

1. a How many boxes (1 centimetre by 1 centimetre) are shown here ?



b Write down the area as :- Area = ? cm^2.

2. Write down the areas (using cm^2) of each of the following shapes :-



https://corbettmaths.com/wp-content/uploads/2013/02/area-of-shapes-on-a-grid-pdf1.pdf – additional practice

Rectangle and Square

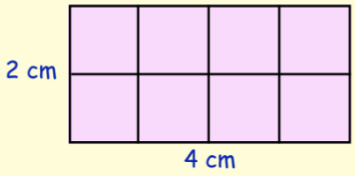
https://youtu.be/Qv3EGzRmCYc – video notes

In the previous exercise, we found out how to calculate the area of a rectangle by counting boxes. We now find the area of this shape by the use of a **FORMULA**.

The rectangle shown measures 4 centimetres by 2 centimetres.

a Calculate its area (**in cm²**) by counting all the boxes.

Do you agree..... 8 boxes, (**cm²**) ?



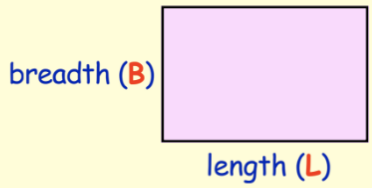
b Now write down the answer you get when you multiply its length by its breadth :-

=> 4 cm x 2 cm (do you get the same answer ?)

Another way to calculate the AREA of a RECTANGLE is as follows :-

Area = Length x Breadth

or **A = L x B** for short.



It is VERY important that you learn how to use the formula,

A = L x B

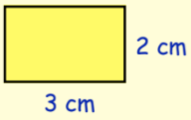
when calculating the area of a rectangle.

Example :-

A = L x B

= 3 x 2

= 6 cm²



1. **a** Draw a rectangle 4 centimetres long by 3 centimetres wide.

b Divide the rectangle neatly into 1 cm square boxes and count the boxes to find the area of the rectangle.

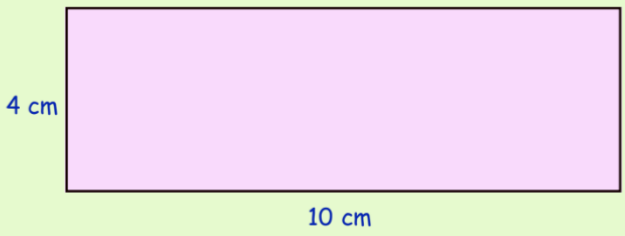
c Use the formula **A = L x B** (with L = 4, B = 3) to calculate the area and check your answer is the same as that obtained in part **b**.

2. Here is a sketch of a rectangle.

Use the formula

A = L x B

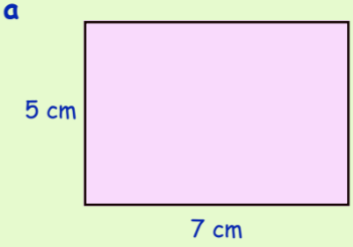
to calculate its area (in cm²).



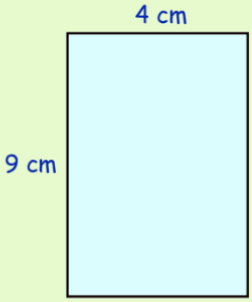
3. Calculate the area of each of the following rectangles.

(In each case, make a small "sketch" of the rectangle, write down the rule **A = L × B** and calculate the area in cm^2).

a

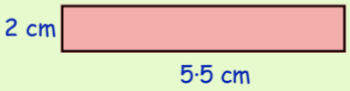


b



c

d



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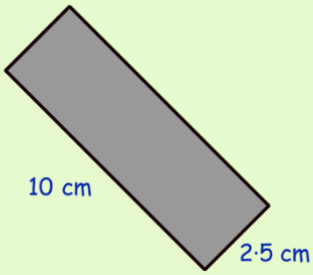
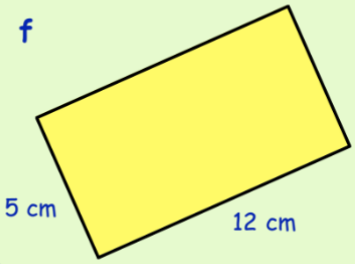


f



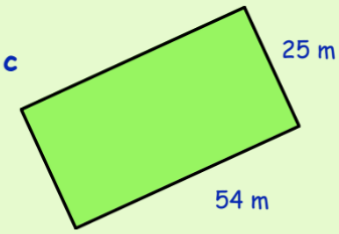
4. Larger rectangles such as floors, playgrounds & fields have their areas measured in **square metres** (m^2).

Calculate the area of each of Farmer Giles' 3 fields in m^2.

a

b

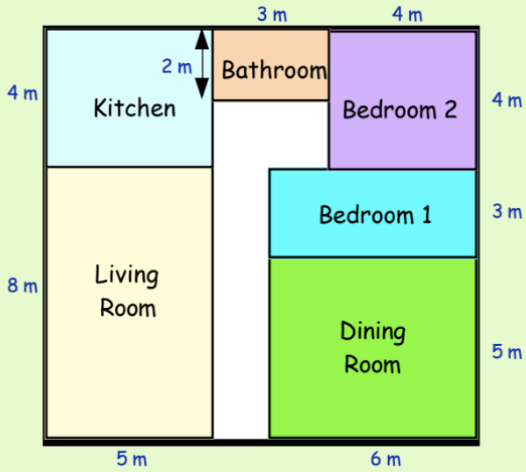
c



5. This plan shows the ground floor of a bungalow.

Calculate the area of each of the 6 rooms in m^2.

Area (living room) = L × B
= 5 m × 8 m
= ..... m^2.



https://corbettmaths.com/wp-content/uploads/2013/02/area-of-a-rectangle-pdf1.pdf – additional notes

Triangle

https://youtu.be/6WsQH1cAYMM – video notes

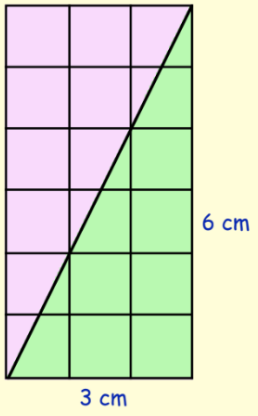
To calculate the area of a Right Angled Triangle :-

Step 1 – Look at the surrounding rectangle

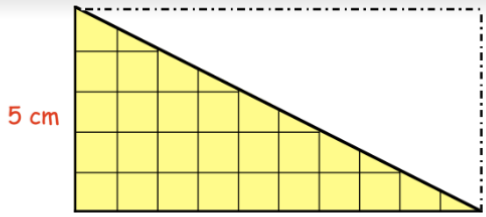
=> Area = $3 \times 6 = 18$ cm^2.

Step 2 – Halve your answer =>

=> Area = $\frac{1}{2}$ of $18 = 9$ cm^2.



a

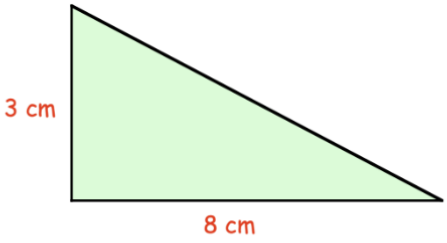


Area (rectangle) = $\ell \times b$ = 10×5

= 50 cm^2

Area (triangle) = $\frac{1}{2}$ of 50 = ? cm^2

b



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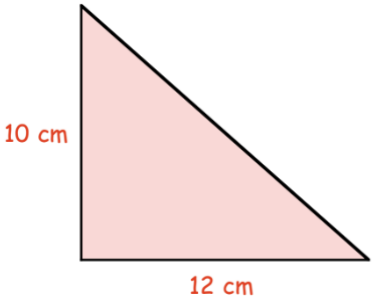

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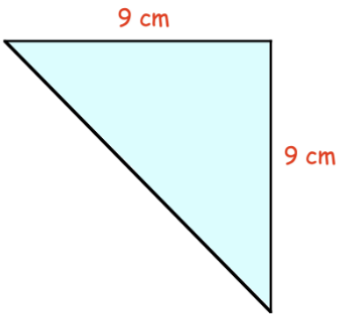

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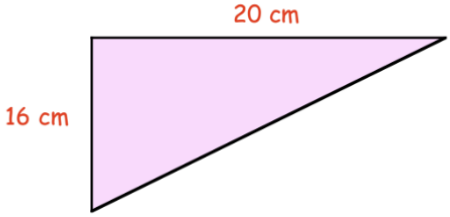
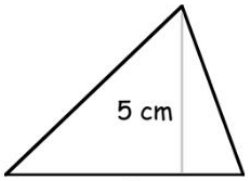


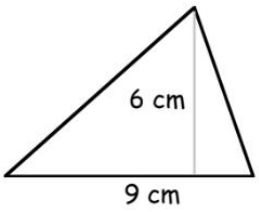
g

Use the formula Area = $\frac{1}{2} \times B \times H$ each time to calculate the areas of the following triangles :-

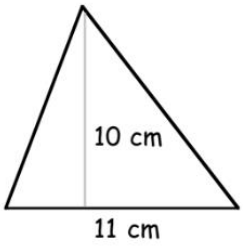
(a)



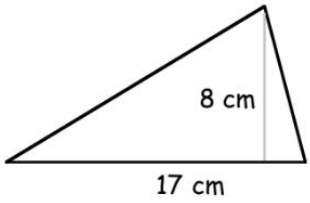
(b)



(c)



(d)



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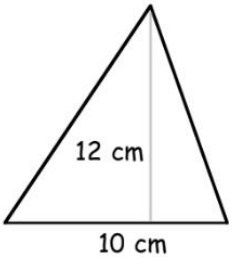
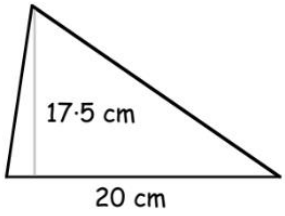
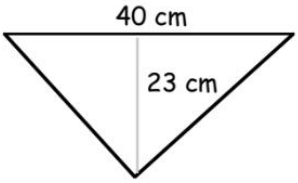


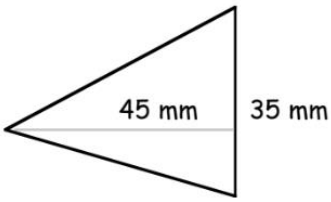
(f)



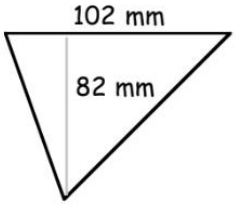
(g)



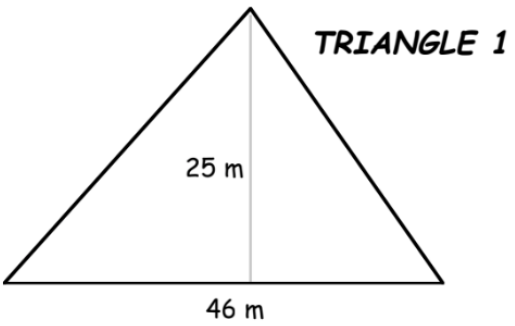
(h)

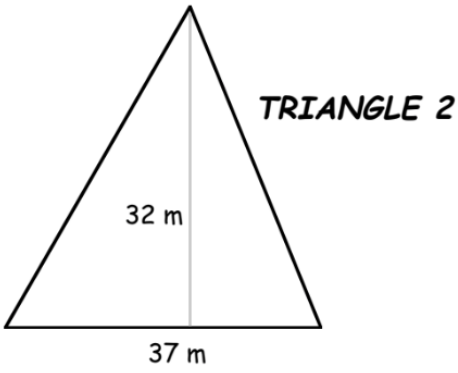


(i)



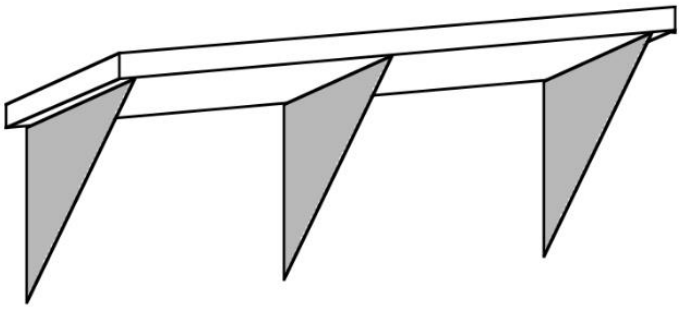
(a) Which of these triangles has the bigger area ?

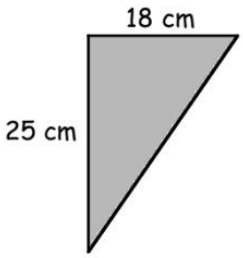




(b) By how many square metres is one bigger than the other ?

Three identical wooden brackets are used to support a shelf.



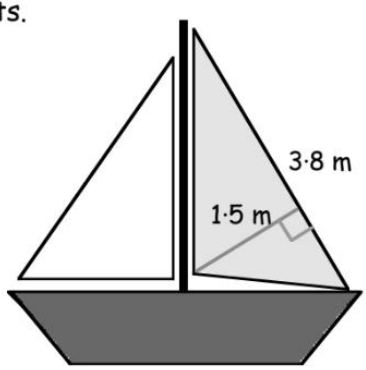


Each bracket is a right-angled triangle, as shown opposite.

Calculate the total area of wood needed to make ALL 3 brackets.

The coloured sail of this yacht is in the shape of an obtuse angled triangle with base 3·8 metres and height 1·5 metres.

Calculate its area in m^2.

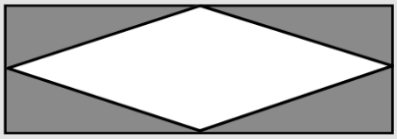


https://corbettmaths.com/wp-content/uploads/2018/02/area-of-a-triangle-pdf.pdf – additional practice

Rhombus & Kites

Area of a Rhombus

Draw (or imagine) the rectangle that just surrounds the rhombus.



The rhombus shown above has length 10 cm and height 3 cm.

Its AREA is calculated by finding the area of the surrounding rectangle and **halving** the answer found.

Area Rect. = $L \times B$ = 10×3 = $30\ cm^2$.

Area Rhombus = $\frac{1}{2}$ of $30\ cm^2$ = $\underline{\underline{15\ cm^2}}$.

Note that the length and breadth of a rhombus are actually the measurements of its **diagonals**.

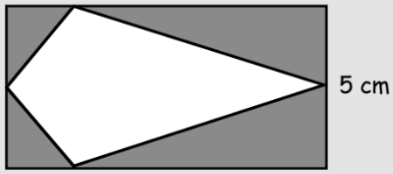
So Area of Rhombus = $\frac{1}{2}$ diagonal $\times$ diagonal

or Area = $\frac{1}{2}(D \times d)$

(where D and d are lengths of big and small diagonals)

Area of a Kite

Found in the same way as the Rhombus.



Area Rect = $L \times B$ = 8×5 = $40\ cm^2$.

Area Kite = $\frac{1}{2}$ of $40\ cm^2$ = $\underline{\underline{20\ cm^2}}$.

OR

Area Kite = $\frac{1}{2}$ diagonal $\times$ diagonal

= $\frac{1}{2} \times 8 \times 5$

= $\underline{\underline{20\ cm^2}}$.

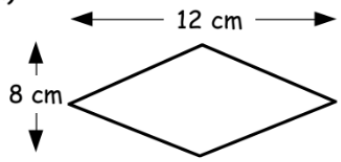
So Area of Kite = $\frac{1}{2}$ diagonal $\times$ diagonal

or Area = $\frac{1}{2}(D \times d)$

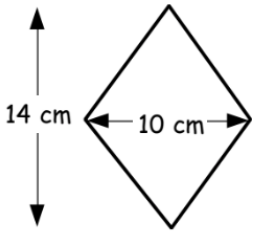
(where D and d are lengths of big and small diagonals)

Use the formula "Area of Rhombus = $\frac{1}{2}(D \times d)$" to find the areas of these rhombi :-

(a)



(b)



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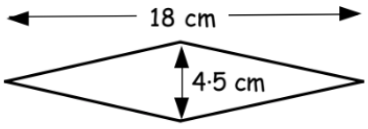
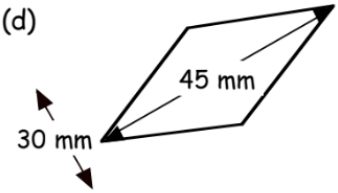


(d)



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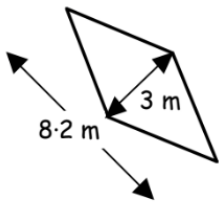

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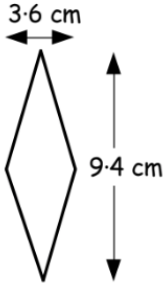
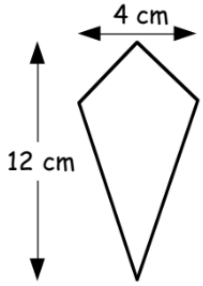
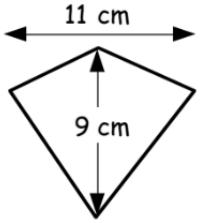


Use the formula "Area of Kite = $\frac{1}{2}(D \times d)$" to find the areas of these kites :-

(a)



(b)



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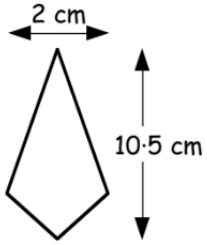

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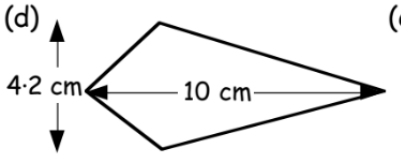

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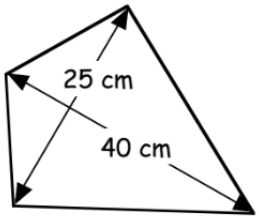

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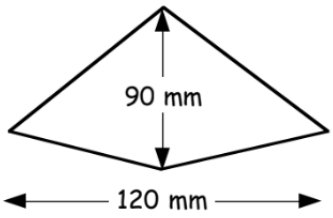
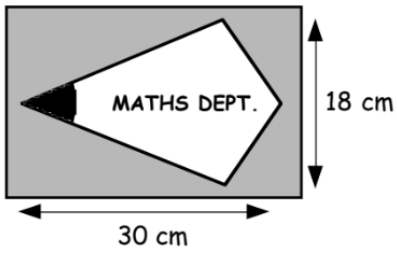


On parents' evenings, the maths department put up this wooden sign on the first floor of the school to direct parents to their rooms.

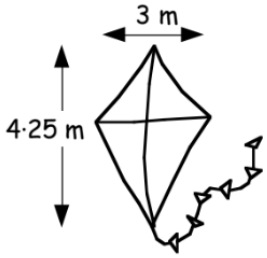
Calculate the area of the wooden kite-shape.



A giant polythene kite flew above the marquee at the wedding reception of the managing director of "Kites-R-4-U".

The kite was strengthened by 2 plastic poles measuring 4·2 metres and 3 metres which were fitted as diagonals of the feature.

Calculate the area of the giant kite.

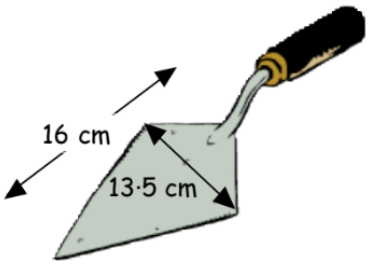


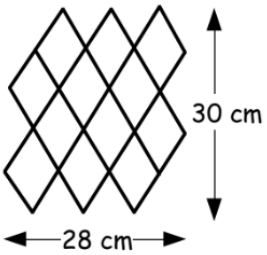
Local fishermen used to nickname this fish "The Rhombus".

Find the approximate area of its body if its measurements are 25 cm long and 9 cm in height.

The base of the trowel shown is in the shape of a kite.

Find its area.





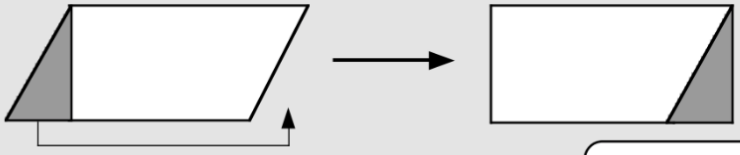
A tiling company glued 12 similar rhombus-shaped tiles onto a plywood board and used this to illustrate how their tiles gelled together to make ideal designs.

Calculate the area covered by ALL the tiles.
(*Hint - calculate the dimensions of one of the rhombi first*)

Parallelograms

https://youtu.be/qz0EGYO4Yl0 – video notes

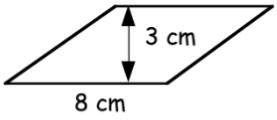
It is easy to see why **the area of a parallelogram = the area of a rectangle.**



A difference in **notation**:-
(Area of Rectangle = Length x Breadth)

AREA of Parallelogram = Base x Height

Example



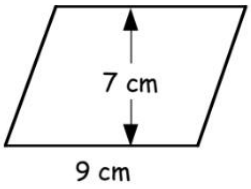
Area = $B \times H$

= 8×3

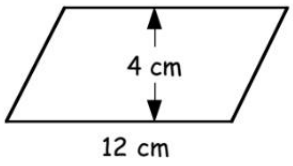
= $24\ cm^2$

Calculate the areas of these parallelograms :-

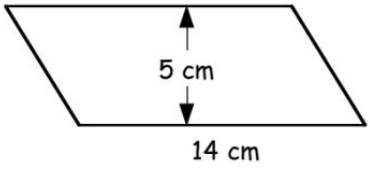
(a)



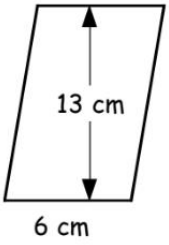
(b)



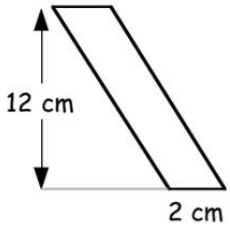
(c)



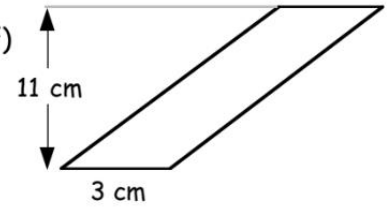
(d)



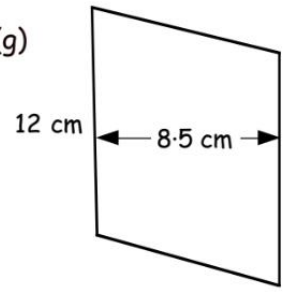
(e)



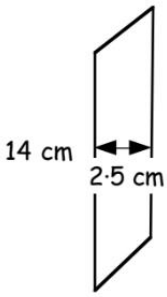
(f)



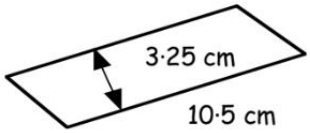
(g)



(h)

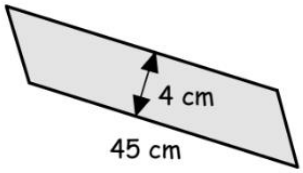


(i)



Fraser, an architect, often uses parts of parallelograms when drawing up plans.

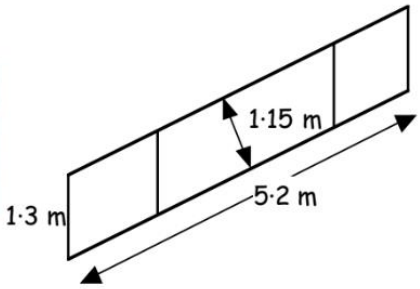
Calculate the area of this part.



The movable stairway is used at many older airports to allow passengers to disembark from aircraft.

Again, a parallelogram shape is noticeable.

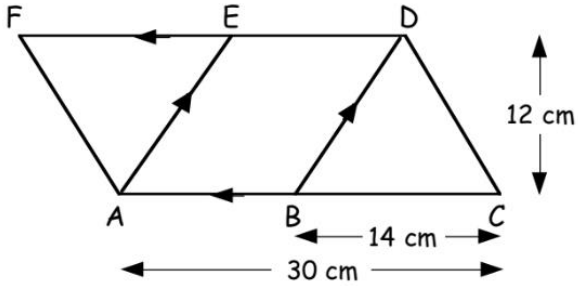
Find the area of the large parallelogram.



Look at the diagram shown and :-

(a) name 2 parallelograms.

(b) calculate the area of each one.



https://corbettmaths.com/wp-content/uploads/2013/02/area-of-a-parallelogram-pdf2.pdf – additional practice

L Shape and compound shapes

Compound shapes - https://youtu.be/qiTmz3UtUiY – video notes

L shape - https://youtu.be/a16UJE8WEN8 – video notes

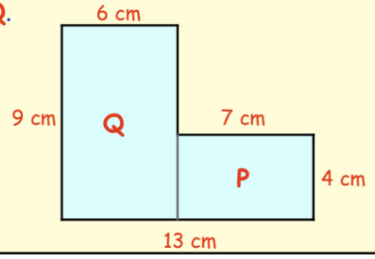
A **composite** shape is one made up of (or composed of) more than one shape.

The shape shown below consists of 2 rectangles, **P** and **Q**.

Area of **P** = $L \times B = 7 \times 4 =$ **28 cm²**

Area of **Q** = $L \times B = 6 \times 9 =$ **54 cm²**

Total Area = 28 + 54 = **82 cm²**

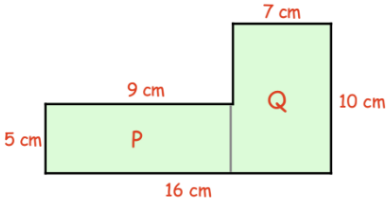


1. This L-shaped figure consists of 2 rectangles.

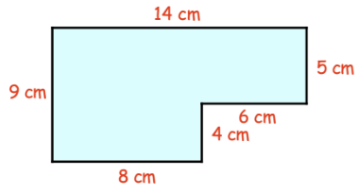
a Calculate the area of rectangle P.

b Calculate the area of rectangle Q.

c Now calculate the **total area** of the shape.



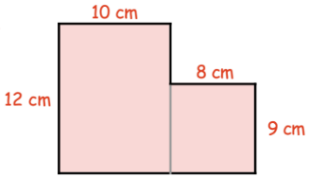
2.



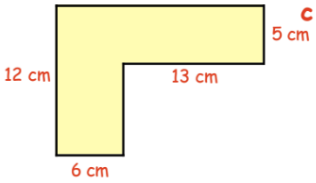
Calculate the **area** of this shape by dividing it into 2 rectangles.
(*make a sketch showing how you split it up*)

3. Calculate the total **area** of each of the following shapes :- (*make sketches each time*)

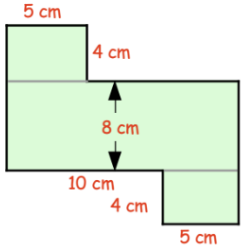
a



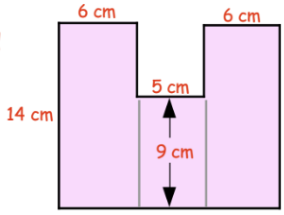
b



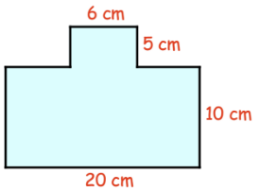
c



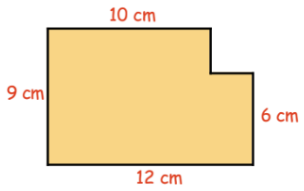
d



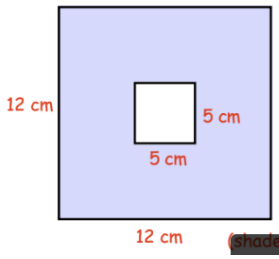
e



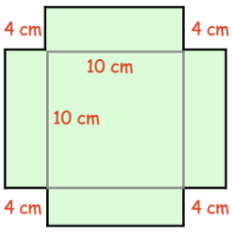
f



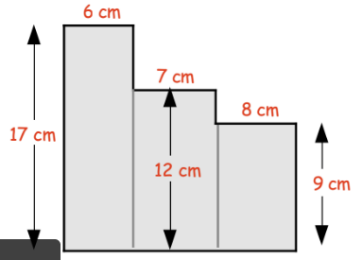
g



h



(i)

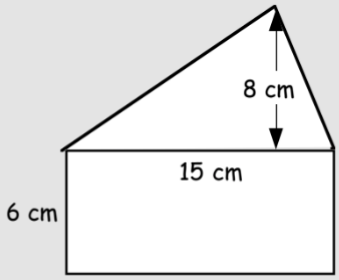


(shaded area)

In this chapter, we have studied the area of a Rectangle, Square, Triangle, Kite, Rhombus Parallelogram and Trapezium. We now look at examples where we will combine these areas.

Example

Find the area of the shape below, consisting of a triangle on top of a rectangle.



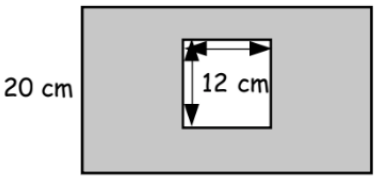
Area Rectangle = $L \times B$
$= 15 \times 6$
$= \underline{90\ cm^2}$

Area Triangle = $\frac{1}{2}\ B \times H$
$= \frac{1}{2}$ of 15×8
$= \underline{60\ cm^2}$

TOTAL = $\underline{150\ cm^2}$

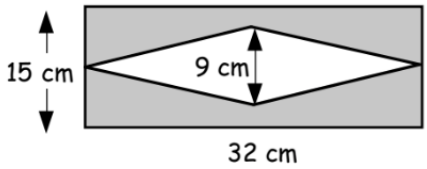
Calculate the shaded areas :-

(a) Rectangle & Square

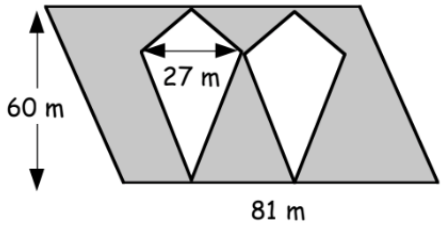


(b) Square & Triangle

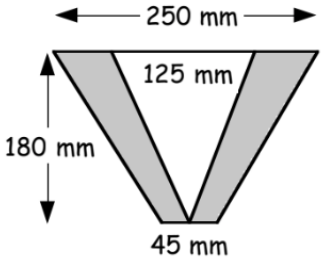
(c) Rectangle & Rhombus



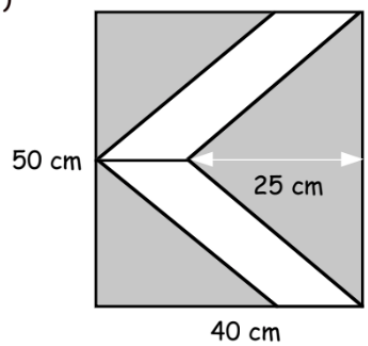
(d) Parallelogram & Identical Kites



(e) Trapezium & Triangle



(f) Rectangle & Identical Parallelograms



https://corbettmaths.com/wp-content/uploads/2018/01/area-of-an-l-shape-pdf.pdf – L shapes additional practice

https://corbettmaths.com/wp-content/uploads/2018/09/Area-of-Compound-Shapes-pdf.pdf – Compound shapes additional practice

Volume

Cuboid

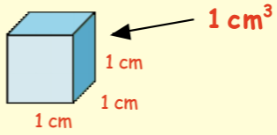
https://youtu.be/M2g3KQ_Uaag Video Notes

Volume by Counting Cubes

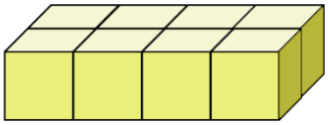
The volume of a shape is the "**amount of space**" it takes up.

The basic unit of volume is the **cubic centimetre**.

A small cube which measures 1 cm by 1 cm by 1 cm is said to have a **volume** of **1 cubic centimetre** and is written as **1 cm^3**.



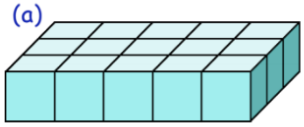
1. (a) How many "centimetre cubes" does this shape contain ?



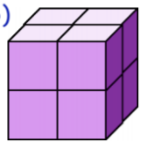
(b) **Copy** and complete :- "It's volume is .... cm^3".

2. Write down the volumes of each of these shapes. Each small cube has a volume of 1 cm^3.

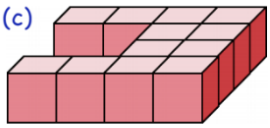
(a)



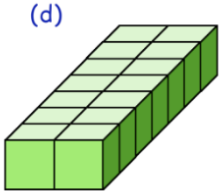
(b)



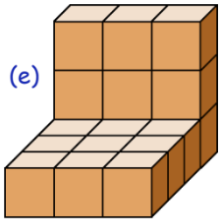
(c)



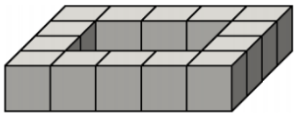
(d)



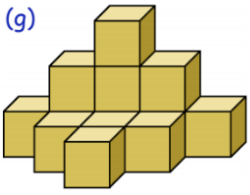
(e)



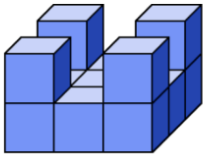
(f)



(g)

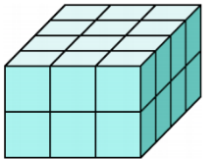


(h)

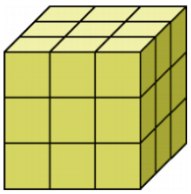


3. By counting the number of cubes on the top face, calculate and write down the volume of each of the shapes in cubic centimetres (cm^3).

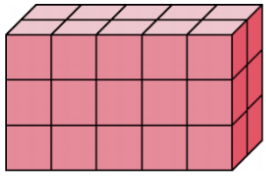
(a)



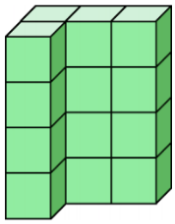
(b)



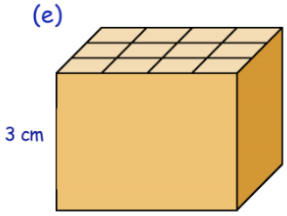
(c)



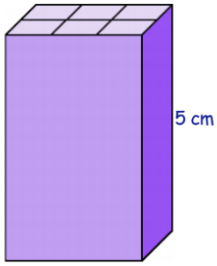
(d)



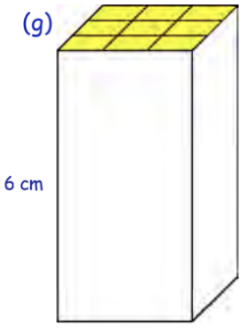
(e)



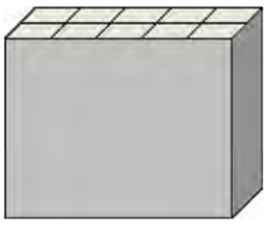
(f)



(g)

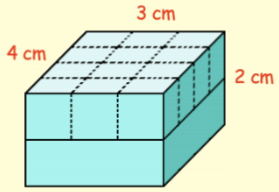


(h)



Volume - Cubes & Cuboids - a Formula

Look at the cuboid on the right and find out if we can determine its **volume** without having to count it cube by cube.



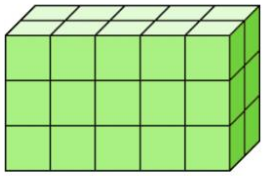
- The top layer consists of 4 rows of 3 cubes => 4 x 3 (= 12 cm^3)
- There are 2 identical layers => Volume = 2 x (4 x 3) (= 24 cm^3)

This means a simple process to determine the volume of a cuboid (or cube) is to multiply the 3 dimensions.

Volume = length x breadth x height or in symbols $V = L \times B \times H$

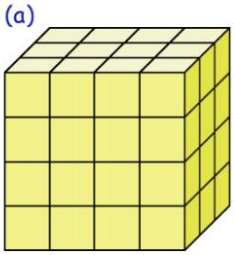
1. **Copy** and complete :-

Vol = $L \times B \times H$
$V = 6 \times 2 \times 3$
$V =$ ..... cm^3

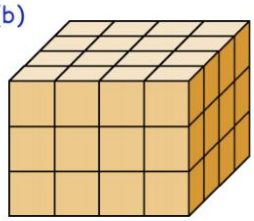


2. Use the above formula to calculate the volumes of these cuboids :- (*Show 3 steps each time*).

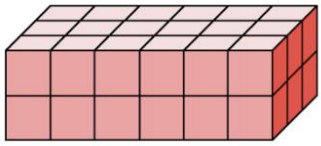
(a)



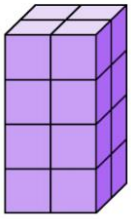
(b)



(c)



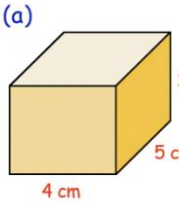
(d)



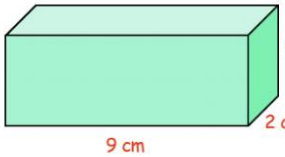
(*Check each answer by counting cubes*).

3. Use the above formula to calculate the volume of each of these cuboids :-

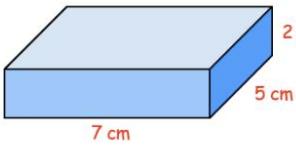
(a)



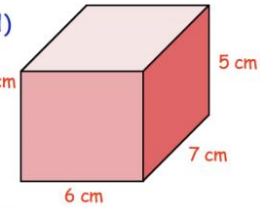
(b)



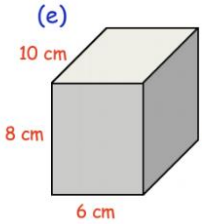
3. (c)



(d)



(e)

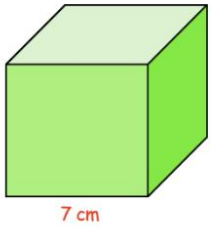


(f)

4. The same formula can be used to calculate the volume of a **cube**.
In a cube, all of the edges are the same length.

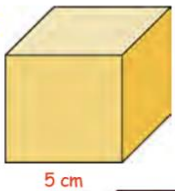
Copy and complete :-

Vol = $L \times B \times H$
$V = 7 \times 7 \times 7$
$V =$ ..... cm^3

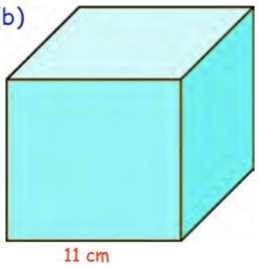


5. Calculate the volume of each of these **cubes** :-

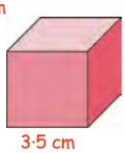
(a)



(b)



(c)



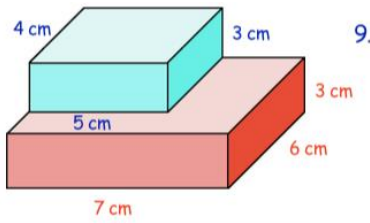
https://corbettmaths.com/wp-content/uploads/2013/02/volume-of-a-cuboid-pdf1.pdf
Additional practice

L Shaped Prism

https://youtu.be/C8WH68qQSyE Video Notes

6. This shape consists of a blue cuboid on top of a pink one.

Copy and complete :-



Volume (blue) = $L \times B \times H$

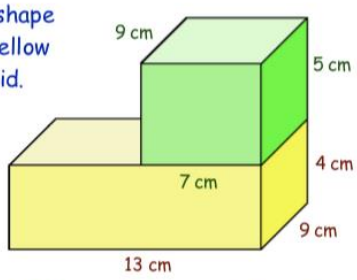
= $5 \times 4 \times 3$ = ... cm^3

Volume (red) = $L \times B \times H$

= $7 \times 6 \times 3$ = ... cm^3

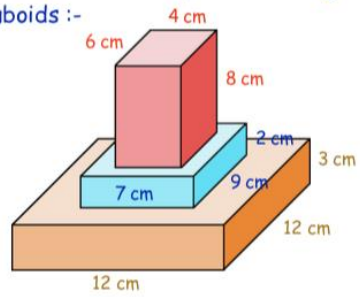
Total Volume = ... + ... = ... cm^3

7. Repeat for this shape consisting of a yellow and a green cuboid.

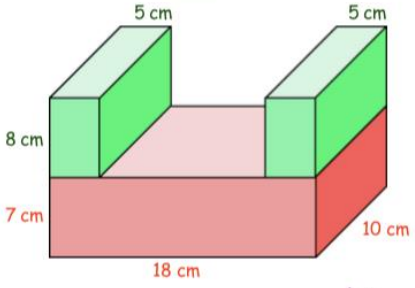


8. Find the volumes of these shapes consisting of 2 or more cuboids :-

(a)

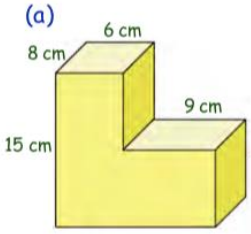


(b)

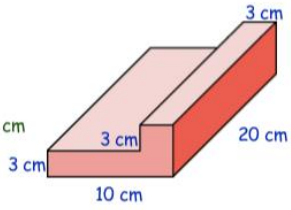


9. Find the volumes of these shapes :-

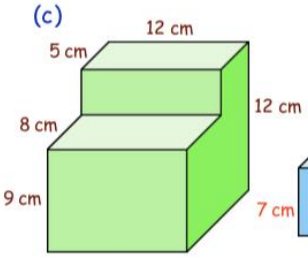
(a)



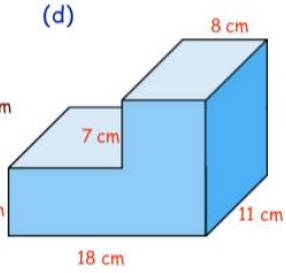
(b)



(c)

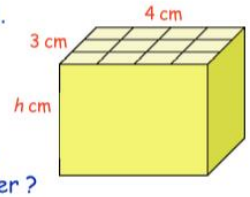


(d)



10. Look at the yellow cuboid.

It's volume is known to be 36 cm^3.

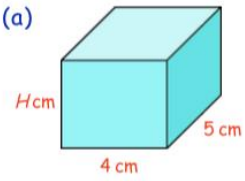


(a) How many cubes are there on the **top** layer ?

(b) Calculate what the **height** (*h* cm) of the cuboid must be.

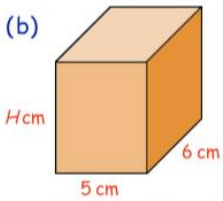
11. Calculate the **H**, **L** or **B** in these cuboids :-

(a)



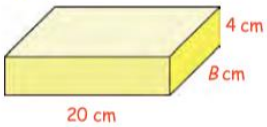
Volume = 80 cm^3.

(b)



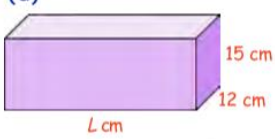
Volume = 210 cm^3.

(c)



Volume = 960 cm^3.

(d)



Volume = 3600 cm^3.

https://corbettmaths.com/wp-content/uploads/2013/02/volume-of-an-l-shape-prism-pdf.pdf Additional Practice

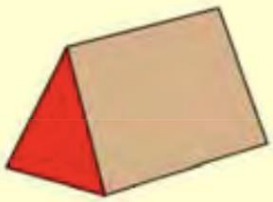
Prism

https://youtu.be/rGc00WJaqV0 Video Notes

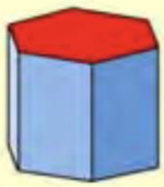
A **PRISM** is a 3-D shape with two parallel **congruent** faces, usually in the shape of polygons.

Examples :-

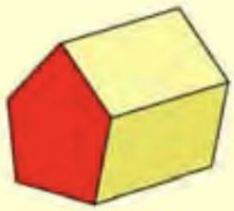
square based prism



triangular prism



hexagonal based prism



pentagonal prism

The **RED** face is the one that runs right through the shape,
(top to bottom, left to right or front to back).

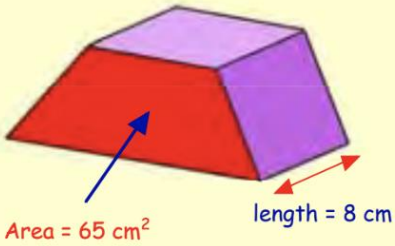
Volume of a Prism

It is fairly easy to calculate the volume of a prism, as long as you know the **area** of the **congruent** face.

Volume (prism) = **Area** (of end face) x **length**

or

Volume (prism) = **Area** (of base) x **height**



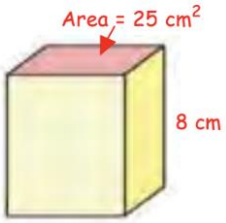
For this trapezoidal prism :-

Volume = Area x length
= 65 cm² x 8 cm
= **520 cm³**

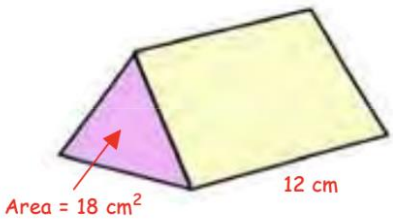
* The usual formula is :- $V = A \times h$

Exercise 2

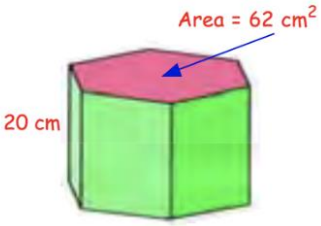
1. The area of the top of this square based prism is 25 cm².
Its height is 8 cm.
Calculate its volume.



2. Calculate the volume of this triangular prism.

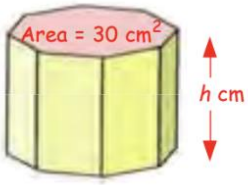


3. Calculate the volume of the hexagonal based prism shown.

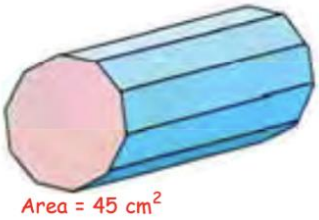


4. The volume of this prism is 210 cm^3.

Calculate its height.



5.

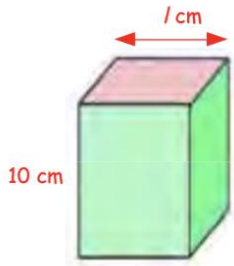


The volume of this prism is 675 cm^3.

Calculate its length.

6. The volume of this cuboid with a square top is 250 cm^3.

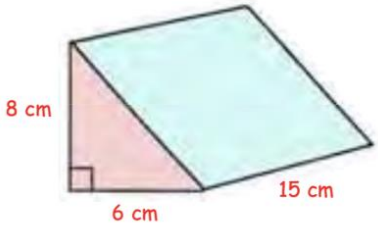
Calculate the length of one of the sides of the square.



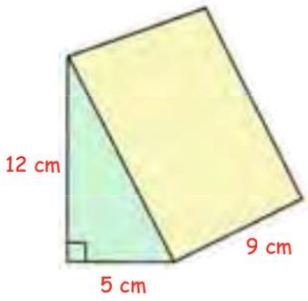
7. This is a (right angled) triangular prism.

a Use the formula for finding the area of a triangle to calculate the **area** of the pink triangular face.

b Now calculate the **volume** of the prism.



8.



Calculate the volume of this prism in a similar way.

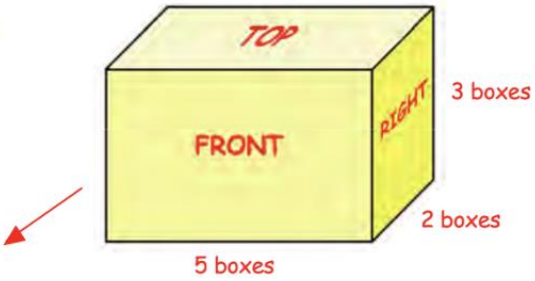
https://corbettmaths.com/wp-content/uploads/2013/02/volume-of-a-prism-pdf1.pdf
Additional practice

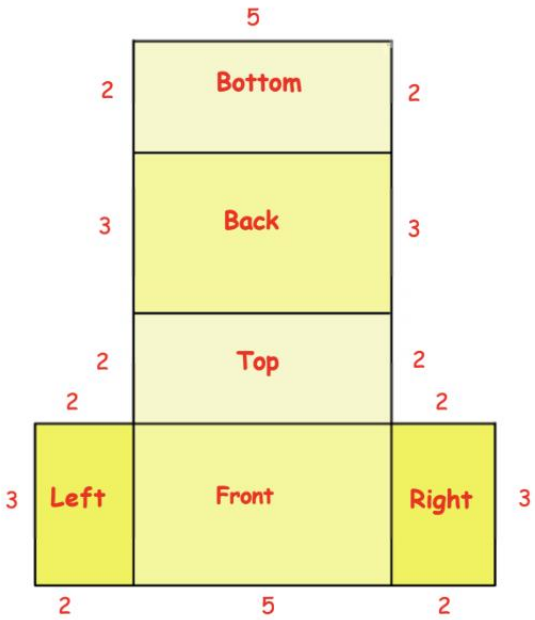
Surface Area

Nets

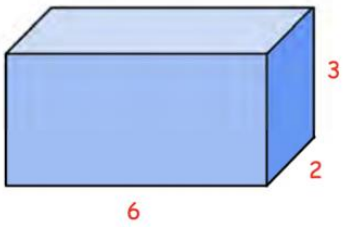
https://youtu.be/hQG5kd3Q28g - Video Notes

The NET of a solid shape is simply what you get when the shape is "flattened out".

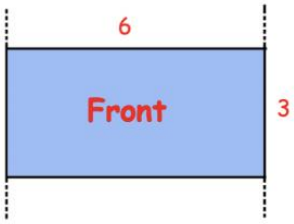




This box measures 6 boxes by 2 boxes by 3 boxes.



a Use a ruler to draw a net.
(It helps to do it on $\frac{1}{2}$ cm squared paper).
Start with :-

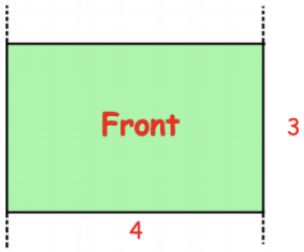


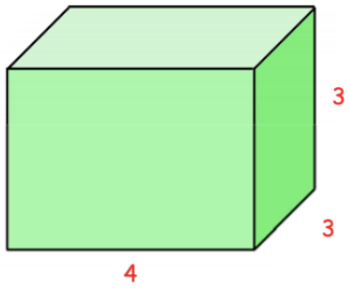
b Calculate the **area** of each of the 6 rectangular faces (in boxes).

c Calculate the total **surface area** of the cuboid (the net).

a Draw a net of this cuboid.

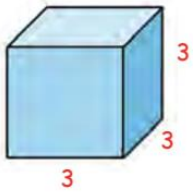
Start with :-





b Calculate the **area** of each face and the total **surface area** of the cuboid.

The net of this cube consists of 6 identical squares.



a Draw its net.

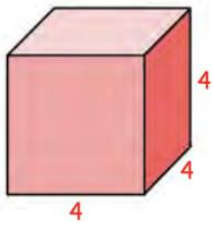
b Calculate the total surface area of the cube by using the net to help.

For each of the following cuboids :-

(i) Draw its net.

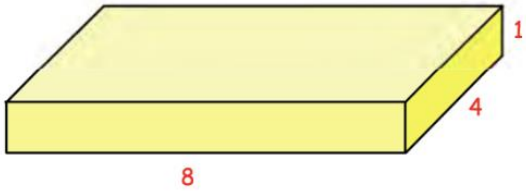
(ii) Calculate the **total surface area** of the cube by using the net to help.

a

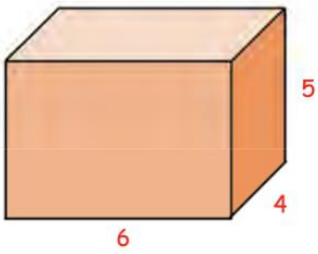


b

c



d



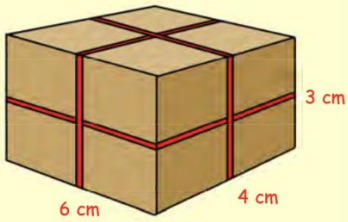
https://corbettmaths.com/wp-content/uploads/2013/02/nets-pdf1.pdf - additional practice

Cubes/Cuboids

https://youtu.be/hi2QMbROemk – Video notes

Surface Area – This is the total area of all of the faces added together.

Example :- Find the **Surface Area** of this box.

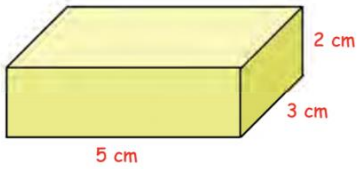


Set down like this :-

Area of **front**	= $l \times b$	= 6 x 3	= 18 cm^2
Area of **back**		= (same)	= 18 cm^2
Area of **top**	= $l \times b$	= 6 x 4	= 24 cm^2
Area of **bottom**		= (same)	= 24 cm^2
Area **right** side	= $l \times b$	= 3 x 4	= 12 cm^2
Area **left** side		= (same)	= 12 cm^2
	Total Surface Area		= **108 cm^2**

Can you think of a way of cutting down the work here by half ?

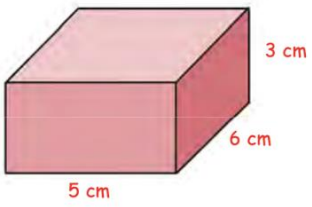
Copy each step here and calculate the **Total Surface Area** (T.S.A.) of this cuboid.



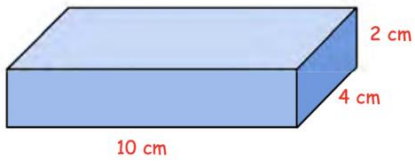
Area of front	= $l \times b$	= 5 × 2 =	... cm^2
Area of back		= same =	....
Area of top	= $l \times b$	= 5 ×	
Area of bottom			
Area			
Area			
=>	**Total Surface Area**	=	.... **cm^2**

Use the same method to calculate the total surface area of each of the following :-

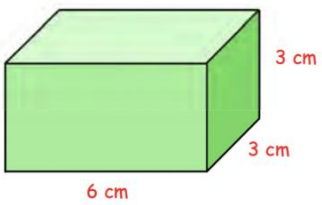
a



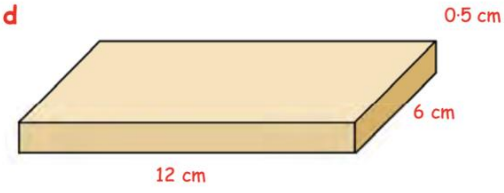
b



c



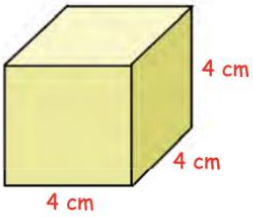
d



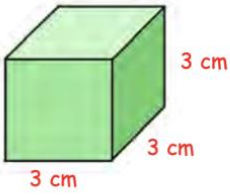
Calculate :- (i) the area of one face.

(ii) the total surface area of each cube.

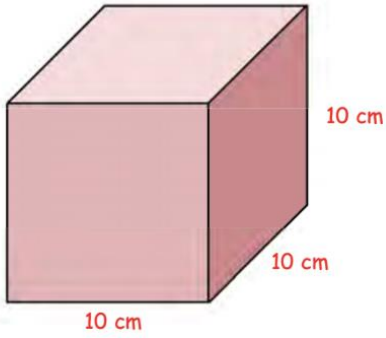
a



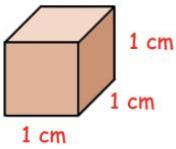
b



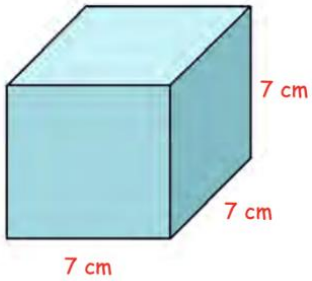
c



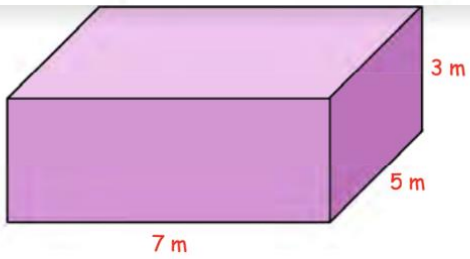
d

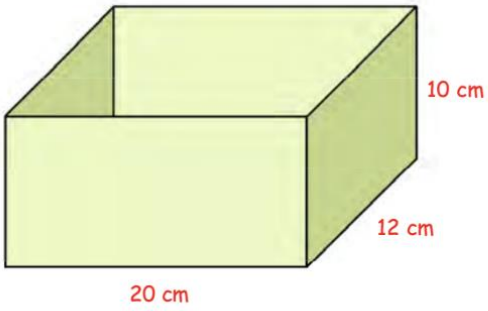


e



The surface area does not need to be in cm^2.
Calculate the total surface area of this concrete block (in m^2).





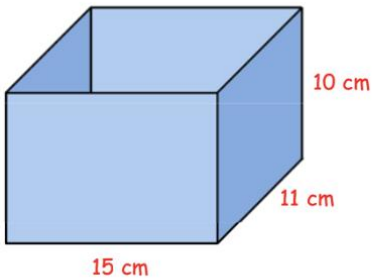
This cardboard box has no top.

It is made up of **5** faces.

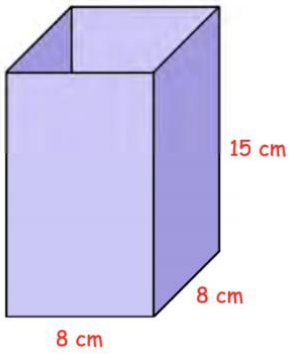
Calculate the total area of cardboard needed to make this box.

Calculate the area of card needed to make these **open top** boxes :-

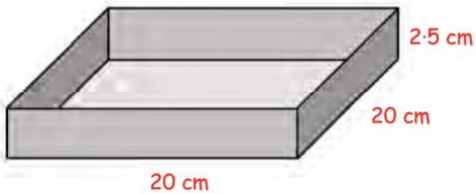
a



b



c



https://corbettmaths.com/wp-content/uploads/2013/02/surface-area-cuboids-pdf.pdf – further practice

L Shaped Prism

https://youtu.be/o5_SORiOi6s - video notes

https://corbettmaths.com/wp-content/uploads/2018/12/Surface-Area-L-shaped-prism-pdf.pdf - practice questions

Other prisms

https://youtu.be/VwdMbDpMab4

In the previous exercise you touched on finding the surface area of a triangular prism.

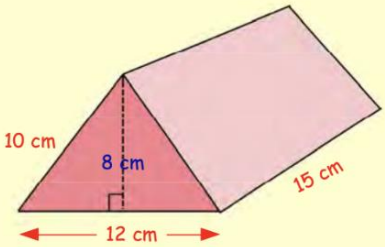
The following exercise gives you more examples on this topic.

Remember :-

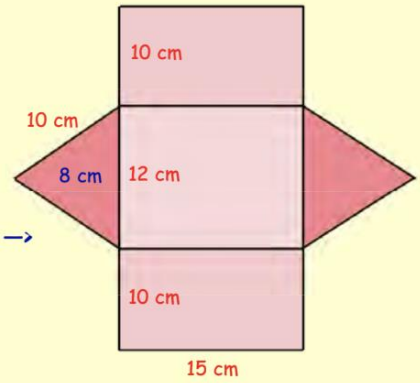
$\text{Area}_{\text{rect}} = L \times B$

$\text{Area}_{\text{triangle}} = \frac{1}{2}(L \times B)$

Method :-



Becomes —>



To calculate the **TOTAL SURFACE AREA**, you should follow these steps :-

Step 1 find the area of each rectangle – 1 large and 2 smaller

Step 2 find the area of each triangle (both the same)

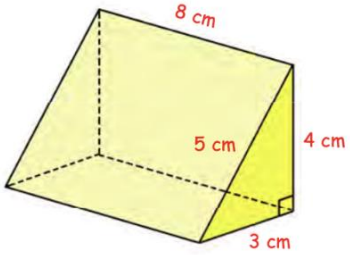
Step 3 add your answers to get total surface area (in cm^2)

Extension Question

The surface area of a triangular prism.

A triangular prism consists of

3 rectangular faces and
2 (identical) triangular faces.

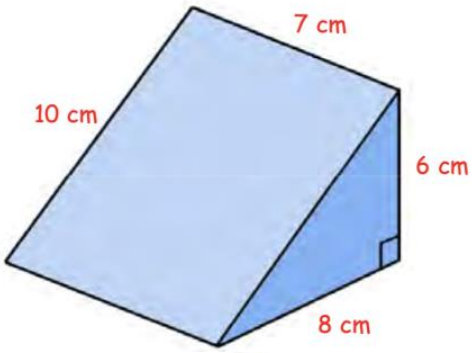


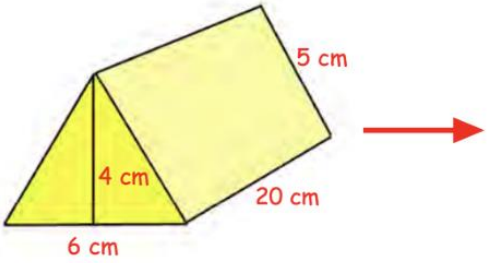
Copy and complete :-

Area of bottom rectangle	$= l \times b$	$= 3 \times 8$	$=$	.... cm^2
Area of back rectangle	$= l \times b$	$= 4 \times 8$	$=$	.... cm^2
Area of big front rectangle	$= l \times b$	$= 5 \times$	$=$	.... cm^2
Area of (right) triangular face	$= \frac{1}{2}$ of $b \times h$	$= \frac{1}{2}$ of 3×4	$=$	.... cm^2
Area of (left) triangular face	$=$	(same)	$=$	.... cm^2
		Total Surface Area	$=$	.... cm^2

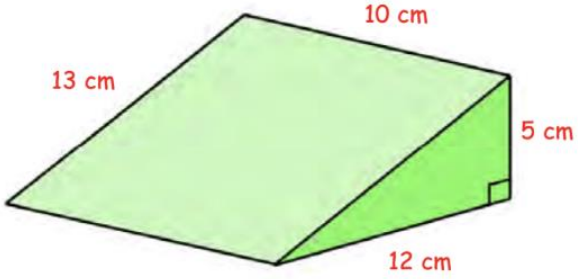
Do the same here. Calculate the **total surface area** :-

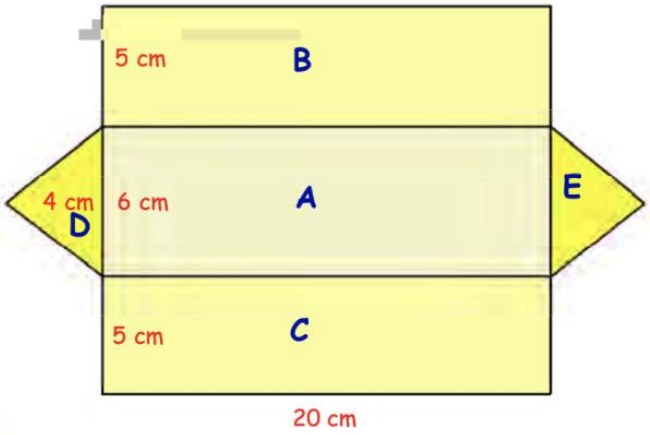
a





b





Calculate :-

a **(i)** the area of the rectangle A.

(ii) the areas of rectangles B and C.

b the areas of triangles D and E (the same).

c the **total surface area**.

Calculate :-

a **(i)** the area of the rectangular floor.

(ii) the area of the rectangular "back".

(iii) the area of the rectangular "sloping side".

b the area of the 2 right angled triangles.

c the **total surface area**.