LEGIT EDUCATION CONSULTANT

P.6 MATHEMATICS

LESSON NOTES AND ACTIVITIES

LENGTH, MASS AND CAPACITY

NAME:----------

LESSON 1

Subtopic: Conversion of metric units

Content: Expressing centimetres as millimetres.

Km	Hm	Dm	M	Dm	Cm	Mm
					1	0

1. How many mm are 8cm?

2. Change 4.5 cm to mm.

3. Convert 0.6 cm to mm.

4. Convert $2\frac{1}{2}$ Cm to metres

ACTIVITY

1. How many millimetres are in;

a) 2cm

b) 20cm

c) 0.9cm

d) 3.8cm

e) $4\frac{1}{2}$ Cm

f) $9\frac{1}{2}$ Cm

LESSON 2

Content: Expressing millimetres as centimetres

1. Convert 120mm to cm

Method I

10mm = 1cm

$1mm = \left(\frac{1}{10}\right) cm$

$120mm = \left(\frac{1}{10} x 120\right) cm$

$120mm = 12cm$

Method II

10 mm = 1cm

120 mm = $\left(\frac{120}{10}\right)$ cm

120 mm = 12cm

2. Change 50 mm to cm.

3. How many centimetres are in 39 millimetres?

ACTIVITY

1. How many centimetres are in;

a) 40mm

b) 18mm

e) 600mm

c) 8mm

d) 37mm

f) 280mm

LESSON 3

Sub topic: Conversion of metres to centimetres

Km	Hm	Dm	M	Dm	Cm	Mm
			1	0	0	

Examples

1. **Change 5m to cm**

   5m = 100cm

   5m = (5 x 100)cm

   5m = 500cm

2. **Express 1.5m to cm**

   1m = 100cm

   $1.5m = \left(\frac{15}{10} x100\right) cm$

   $1.5m = 150cm$

3. **Change $5\frac{1}{4}$ Metres to cm.**

Method I

1m = 100 cm

$5\frac{1}{4}$ m = $5\frac{1}{4}$ X 100cm

$5\frac{1}{4}$ m = $\frac{21}{4}$ X 100cm

$5\frac{1}{4}$ m = $\frac{(21\ X\ 100)}{4}$ Cm (25)

$5\frac{1}{4}$ m = 525cm

Method II

1m = 100cm

$\frac{1}{4}$ m = 25cm

5m = 5 X100cmm

5cm = 500cm

$5\frac{1}{4}$ m = 500cm + 25cm

$5\frac{1}{4}$ m = 525cm

ACTIVITY

1. How many centimetres are in;
   a) 2m
   b) 92m

c) 0.25m

d) 3.8m

f) $9\frac{3}{5}$ m

e) $7\frac{1}{2}$ m

g) $4\ \frac{3}{4}$m

LESSON 4

Sub topic: Expressing centimetres to metres

Examples

1. **Change 200cm to m**

100cm = 1m

$1cm = \left(\frac{1}{100}\right)m$

$200cm = \left(\frac{1}{100}x200\right)m$

200cm = 2m

Method II

100cm = 1m

200 cm = $\left(\frac{2\cancel{00}}{1\cancel{00}}\right)$ m

200 cm = 2m

2. Express 350cm to m

100cm = 1m

$1cm = \left(\frac{1}{100}\right)$M

$350cm = \left(\frac{1}{100} x350\right) m$

= 3.5m

Method II

100cm = 1m

350 cm = $\left(\frac{350}{100}\right)$ m

350 cm = 3.5m

3. John's garden is 2450cm. What is the length of the garden in metres?

100cm = 1m

$1cm = \left(\frac{1}{100}\right)$

$2450cm = \left(\frac{1}{100} x2450\right) m$

= 24.5m

Method II

100cm = 1m

2450cm = $\left(\frac{2450}{100}\right)$ m

2450 cm = 24.5m

ACTIVITY

1. Express these centimetres as metres.
   a) 600cm
   b) 750cm
   c) 4800cm

2. A rectangular room has its perimeter measuring 1340cm. Convert this to metres.

3. James has a rope measuring 240cm. What is the length of the rope in metres?

4. The school is 45000cm away from the main road. How far is this in metres?

LESSON 5

Sub topic: Changing square meters (m^2) to square centimeters (cm^2)

Examples

1. Change $2m^2$ to cm^2.

2. Express $1.2m^2$ to cm^2

3. Change $3\frac{1}{4}m^2$ to cm^2.

ACTIVITY

1. Change the following to square centimetres.

a) $3m^2$

b) $5m^2$

c) $4.5m^2$

d) $6.8m^2$

e) $0.45m^2$

f) $4\frac{1}{2}\ m^2$

g) $8\frac{9}{10}\ m^2$

LESSON 6

Sub topic: Expressing kilometres to metres

Examples

1. **Change 15km to m**

1km = 1000m

15km = (15 x 1000)m

15km = 15000m

2. **Convert 0.5km to m**

1km = 1000m

$0.5km = \left(\frac{5}{1\cancel{0}} x 100\cancel{0}\right) m$

= 5 x 100m

= 500m

3. **Convert 2.6km to m**

1km = 1000m

$2.6km = \left(\frac{26}{1\cancel{0}} x 100\cancel{0}\right) m$

= 26 x 100m

= 2600m

4. **How many metres are in 8.45km?**

1km = 1000m

$8.45km = \left(\frac{845}{1\cancel{00}} x 10\cancel{00}\right) m$

= 845 x 10m

= 8450m

5. **Change 0.453 km to metres.**

1km = 1000m

$0.453km = \left(\frac{453}{1\cancel{000}} x 1\cancel{000}\right) m$

= 453 x 1m

= 453m

6. **A cyclist covered a distance of $6\frac{3}{5}$ Km. Find this distance in metres.**

1km = 1000m

$6\frac{3}{5}$ Km = $6\frac{3}{5}$ X 1000m

$6\frac{3}{5}$ Km. $= \left(\frac{33}{\cancel{5}} x \cancel{10}00\right) m$

= 33 x 200m

= 6600m

ACTIVITY

1. How many metres are in;
   a) 2km

   b) 3.8km

   c) $7\frac{1}{2}$ Km

2. Our village is 92km away from the town. How far is our village in metres?

3. A driver covered a journey of $9\frac{3}{5}$ Km. How many metres did he cover?

4. I walk 0.25km from home to school every day. How many metres do i walk every day?

5. The perimeter of our garden is $4\frac{3}{4}k$m. What distance in metres will I cover if i run around the garden?

LESSON 7

Sub topic: Converting metres to km

Examples

1. **Change 5000m to km**

1000m = 1km

$1m = \frac{1}{1000}km$

$5000m = (\frac{1}{1000}x5\cancel{000})$ km

$5000m = 5km$

2. **Change 16500m to km**

$1m = \frac{1}{1000}km$

$16500m = \left(\frac{1}{1000}x165\cancel{00}\right)km$

$16500m = \left(\frac{165}{10}\right)km$

$16500m = 16.5km$

ACTIVITY

1. Express these metres as kilometres.
   a) 6000m

   b) 7500m

   c) 480000m

2. A rectangular garden has its perimeter measuring 13400m. Convert this to kilometres.

3. John has a rope measuring 2400m. What is the length of the rope in kilometres?

4. The school is 45000m away from the market. How far is this in kilometres?

LESSON 8

Sub topic: Changing square kilometers (km^2) to square meters (m^2)

Examples

1. Change $4km^2$ to cm^2.

2. Express $5.2km^2$ to m^2

3. Change $3\frac{1}{4}km^2$ to m^2.

ACTIVITY

Change the following to square centimetres.

a) $7km^2$

b) $12km^2$

c) $5.8km^2$

d) $9.2km^2$

e) $0.45km^2$

f) $6\frac{1}{2}\ km^2$

g) $3\frac{9}{10}\ m^2$

LESSON 9

Sub topic: comparing units of measures

Content: using>, < or =

1km = 1000m, 1m =100cm and 1cm = 10mm

Examples

1. **60mm____20cm**

   1cm = 10mm

   20cm = (20 x 10)mm

   20cm = 200mm

   60mm < 200mm

   ∴ 60mm < 20cm

2. **2m _____80cm**

   1m = 100cm

   2m =2x 100cm

   2m = 200cm

   200cm > 80cm

   ∴2m > 80cm

3. $\frac{1}{2}$ **Km _____500m**

1 km = 1000m

$\frac{1}{2}$ Km = $\frac{1}{2}$ X 1000m

$\frac{1}{2}$ Km = $\frac{1000}{2}$M

$\frac{1}{2}$ Km = 500m

500m = 500m

$\therefore \frac{1}{2}$ Km = 500m

4. 0.8km _____80m

1km =1000m

0.8km = 0.8 x 1000m

= $\frac{8}{10}$ X 1000m

= 8 x 100m

= 800m

800m > 80m

$\therefore$ 0.8km > 80m

ACTIVITY

Compare the following using **>,<** or **=**.

1. 5cm……..40mm
2. 70cm ……1m
3. 1km……..40m
4. $\frac{1}{4}$ M…….25cm
5. 420mm …..3.2cm
6. 880m ……..8.8km
7. 0.99m ……..99cm

LESSON 10

Sub topic: Expressing kilograms to grams

Example

1. Change 15kg to g

1kg = 1000g

15kg = (15 x 1000)g

15kg = 15,000

2. Convert 0.5kg to g

1kg = 1000g

$0.5kg = \left(\frac{5}{1\cancel{0}} x 100\cancel{0}\right) g$

= 5 x 100g

= 500g

3. Convert 2.6kg to g

1kg = 1000g

$2.6kg = \left(\frac{26}{1\cancel{0}} x 100\cancel{0}\right) g$

= 26 x 100g

= 2600g

4. How many grams are in 8.45kg?

1kg = 1000g

$8.45kg = \left(\frac{845}{1\cancel{00}} x 10\cancel{00}\right) g$

= 845 x 10g

= 8450g

5. Change 0.453 kg to metres.

1kg = 1000m

$0.453kg = \left(\frac{453}{1\cancel{000}} x 1\cancel{000}\right) g$

= 453 x 1g

= 453g

6. **A boy carried $6\frac{3}{5}$ Kg of maize flour. Find this weight in grams.**

1kg = 1000g

$6\frac{3}{5}$ Kg = $6\frac{3}{5}$ X 1000g

2

$6\frac{3}{5}$ Kg. $= \left(\frac{33}{\cancel{5}} x \cancel{10}00\right) g$

= 33 x 200g

= 6600g

ACTIVITY

1. How many grams are in;
   a) 2kg
   b) 3.8kg

c) $7\frac{1}{2}$ Kg

2. Our cow weighs 92kg. Change this into grams.

3. Grace's toy weighs $9\frac{3}{5}$ Kg. How many grams does it weigh?

4. I buy 0.25kg of maize flour everyday from home to school. How many grams do I carry every day?

5. The weight of my school bag is $4\ \frac{3}{4}k$g. What is the weight of my bag in grams?

LESSON 11

Sub topic: converting grams to kg

Examples

1. **Change 5000g to kg**

1000g = 1kg

$1g = \frac{1}{1000} kg$

$5000g = (\frac{1}{1000} x 5000)$ kg

$5000g = 5kg$

2. **Change 16500g to kg**

$1g = \frac{1}{1000} kg$

$16500g = \left(\frac{1}{1000} x 16500\right) kg$

$16500g = \left(\frac{165}{10}\right) kg$

$16500g = 16.5k$g

ACTIVITY

1. Express these grams as kilograms.
   a) 6000g
   b) 7500g
   c) 480000g
2. A man bought 13400g of meat for christmas. Convert this to kilograms.

3. John has a stone weighing 2400g. What is the weight of the stone in kilograms?

4. The school cook measures 45000g of beans for lunch. How many kilograms does he cook?

LESSON 12

Sub topic: ADDITION OF DIFFERENT MEASURES

Example 1: Add 4km + 800m

Example 2: add 9kg + 500g

Example 3: add 15 litres + 600ml

Activity

Add the following.

1. 5km + 700m

2. 6km + 200m

3. 3 litres + 140ml

4. 5 litres + 80ml

5. 8kg + 200g

6. 20kg + 490ml

LESSON 13

Sub topic: SUBTRACTION OF DIFFERENT MEASURES

Example 1: Subtract 4km - 800m

Example 2: add 8kg - 820g

Example 3: add 9 litres - 850ml

Example 4: subtract 85cm from 4m

Activity

Subtract the following.

1. 4kg – 300g
2. 6kg – 150g
3. 5km – 200m
4. 47m – 23cm
5. 8 litres – 360ml
6. 15 litres – 990ml

LESSON 14

Sub topic: DIVISION OF DIFFERENT MEASURES AND APPLICATION

Examples:

1. Divide 36kg by 4

2. Share 360kg equally among 6 people

3. How many 60m pieces of wire are in a 2.4km piece of wire?

ACTIVITY

1. Divide 808 kg of beans equally among 4 people. How many kg does each get?

2. Share 2100 litres of milk equally among 3 schools. How much milk will each school get?

3. A tank has 1200 litrees of paraffin. If 24 people share the paraffin equally, how many litrees will each get?

4. How many packets of 25g of soya can be got from 4 kg of soya?

5. A road is 2.7m wide. How many strides of 60cm will a boy take to cross the road?

6. How many $\frac{1}{4}kg$ packets of maize flour can be obtained from 15000g?

7. A bag of coffee weights 120kg. how many small packets of 25g can be obtained from the bag?

8. A container can carry 1000kg of beans. How many packets of 400g can be poured into the container?

9. How many pieces of 90cm can be got from a string of 27km?

LESSON 15

Topic :2 dimensional geometry

Sub topic: Perimeter

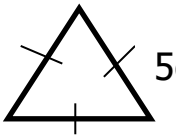
Content: Finding perimeter of polygons

Regular figures are polygons with all sides equal.

Perimeter is the distance round the figure.

Find the perimeter of the polygons below.

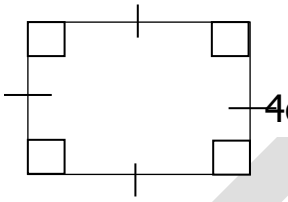
1. **Equilateral triangle**



P = S + S + S
P = 5cm + 5cm + 5cm
P = 15cm

Method II
P = 3S
P = 3 X 5cm

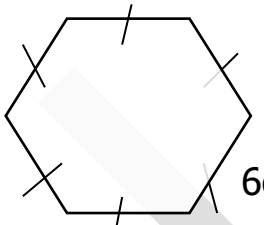
2. **Square**



P = S + S + S + S
P = 4cm + 4cm + 4cm + 4cm
P = 8cm + 8cm
P = 16cm

Method II
P = 4S
P = 4 X 4cm
P = 16cm

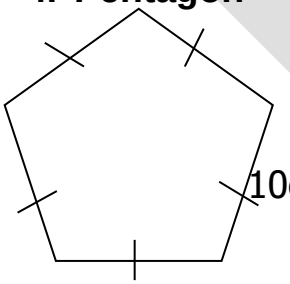
3. **Hexagon**



P = S + S+ S+S +S +S
P = 6cm +6cm +6cm +6cm +6cm +6cm
P = 12 cm + 12cm +12cm
P = 36cm

Method II
P = 6S
P = 6 X 6cm
P = 36cm

4. **Pentagon**



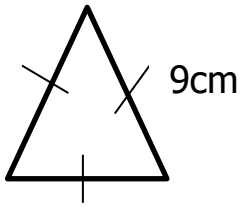
P = S + S+ S+S +S
P = 10cm +10cm +10cm +10cm +10cm
P = 20cm + 20cm +10cm
P = 50cm

Method II
P = 10S
P = 10X 5cm
P = 50cm

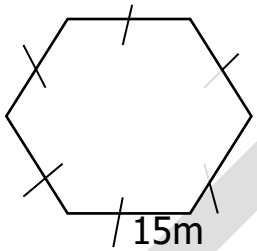
ACTIVITY

1. Find the perimeter of the following regular shapes.

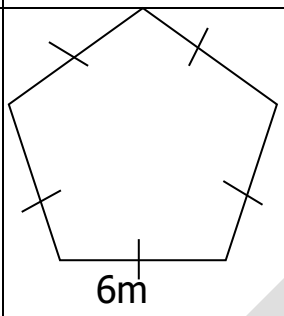
a)



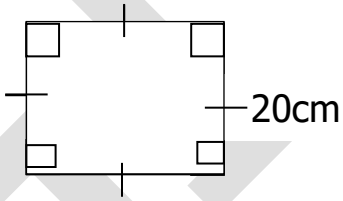
b)



c)



d)



2. Find the perimeter of an equilateral triangle whose side is 14cm.

3. Find the total distance around the square garden measuring 25m.

4. What is the perimeter of a regular pentagon whose side is 40cm?

5. Find the perimeter of a regular hexagon measuring 20cm.

LESSON 16

Topic: 2 DIMENSIONAL GEOMETRY

Sub topic: Finding sides of regular polygons using perimeter

Examples;

1. The perimeter of a square is 12cm. What is the length of each side?

   A square has 4sides

2. The perimeter of a regular triangle is 42cm. Find the length of each side

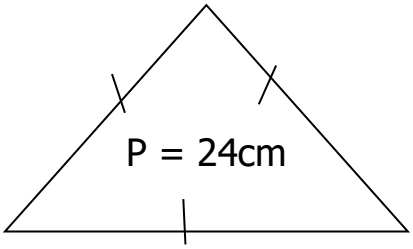
3. The perimeter of a regular pentagon is 20cm. How long is one of its sides?

   A pentagon has 5 sides

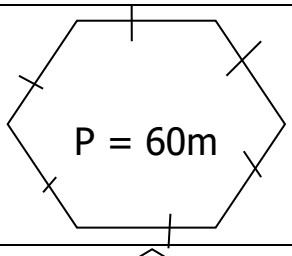
ACTIVITY

1. Find the sides of the figures below using the given perimeter.

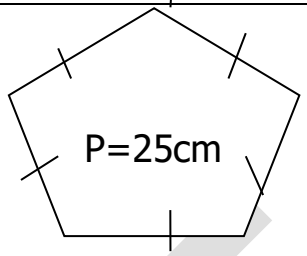
a)



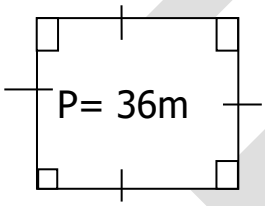
b)



c)



d)



2. The perimeter of an equilateral triangle is 30cm. Calculate its sides.

3. Find one side of a regular pentagon whose perimeter is 40metres.

4. The total distance round a regular hexagon is 72cm. Find one of its sides.

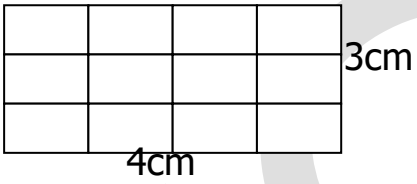
5. A square garden has a perimeter of 100metres. Find its sides.

LESSON 17

Topic: 2 Dimensional geometry

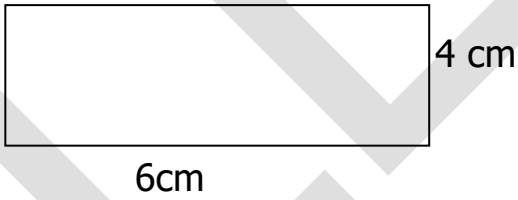
Subtopic : Finding perimeter of a rectangle.

1. Find the perimeter of the figure below.



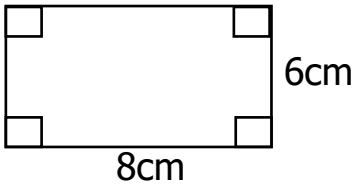
2. Find the perimeter of a rectangle whose length is 6cm and width 4cm.

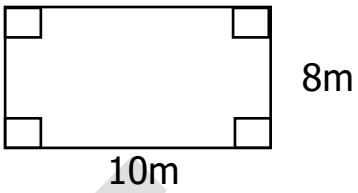
Sketch



ACTIVITY

1. Find the perimeter of these figures.





2. Find the perimeter of a rectangle whose length is 12cm and width 9cm.

3. The length of a rectangular mat is 20m and its width is 15m. Calculate its perimeter.

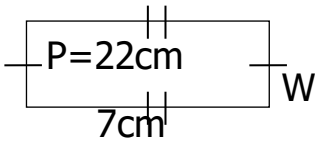
4. Our class room measures 25m by 22m. What is its perimeter?

LESSON 18

Sub topic: Finding one side of a rectangle using perimeter

Examples

1. The perimeter of a rectangle is 22cm and its length is 7cm find its width.

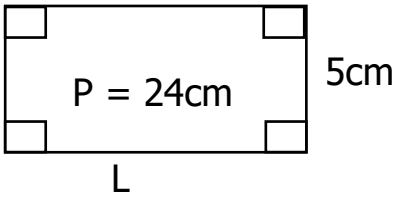


2. The perimeter of a rectangle is 40m if its width is 9m find its length

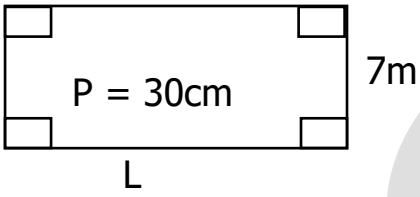
ACTIVITY

1. Find one side of the figures below using the given perimeter.

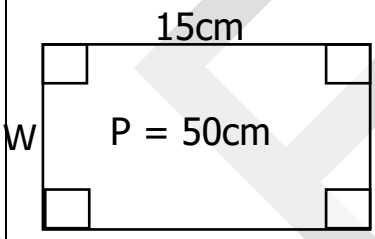
a)



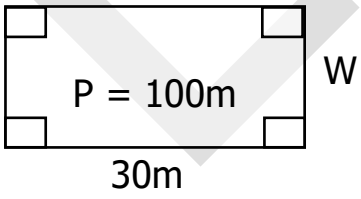
b)



c)



d)



2. The perimeter of a rectangle is 50cm. Calculate its length if the width is 12cm.

3. The length of a rectangular garden is 10m. If its perimeter is 60m, find its width.

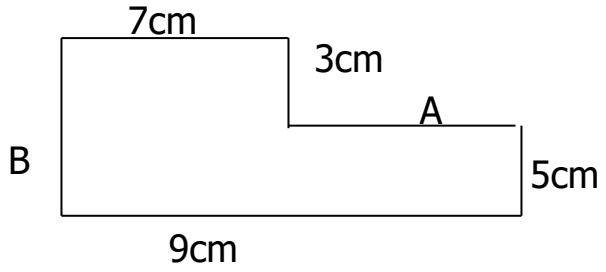
4. The total distance round a rectangular table is 72cm. Find its length if the width is 12cm.

5. A rectangular mat has a perimeter of 90metres. Find its width if the length is 25metres.

LESSON 19

Sub topic: Perimeter of irregular shapes

1. Study the figure below



a) Find the missing sides

Side A	side B
A = (9 – 7)cm	b = 5cm + 3cm
A = 2cm	b = 8cm

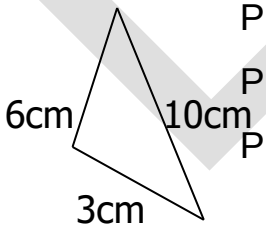
b) Find the perimeter of the figure

$P = S_1 + S_2 + S_3 + S_4 + S_5 + S_6$

P = 7cm + 3cm + 2cm + 5cm + 9cm + 8cm

P = 34cm

2. Find the perimeter of the scalene triangle below

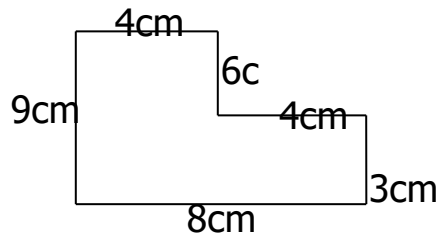


$P = s_1 + s_2 + s_3$

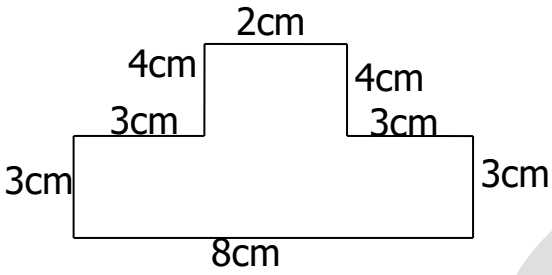
P = 6cm + 3cm + 10cm

P = 19cm

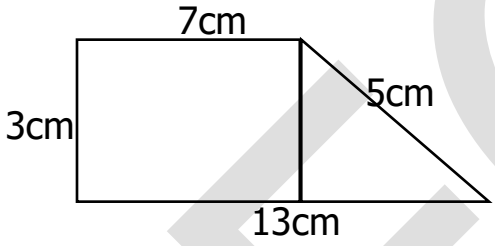
3. Find the perimeter of the following shapes.



Perimeter = $S_1 + S_2 + S_3 + S_4 + S_5 + S_6$
= 4cm + 9cm + 8cm + 3cm +4 cm+ 6cm
= 13cm + 11cm + 10cm
= 34cm.



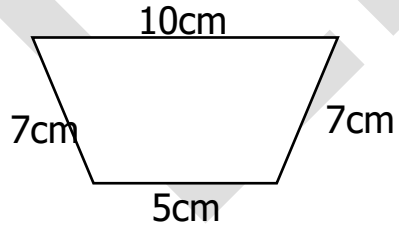
Perimeter = $S_1 + S_2 + S_3 + S_4 + S_5 + S_6 + S_7 + S_8$
= (8 + 3 + 3 + 4 + 2 + 4 + 3 + 3)cm
= 18cm + 12cm
= 30cm.
∴ Perimeter = 30cm



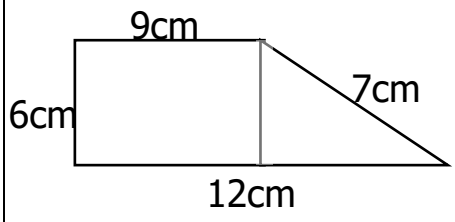
Perimeter = S1 + S2 + S3 + S4
Perimeter = 13cm +5cm +7cm +3cm
Perimeter = 28cm.

ACTIVITY:

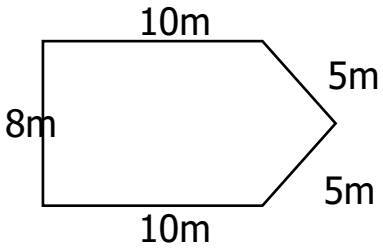
Find the perimeter of these figures.

a)	

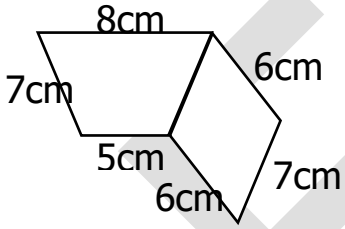
b)

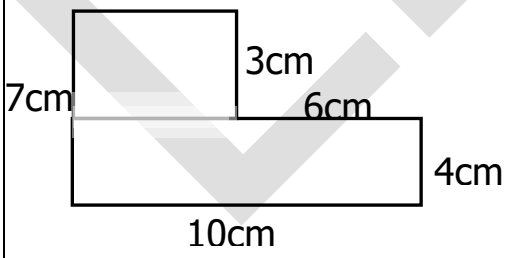

9cm
7cm
6cm
12cm

c)


10m
5m
8m
5m
10m

d)


8cm
6cm
7cm
5cm
7cm
6cm


3cm
7cm
6cm
4cm
10cm

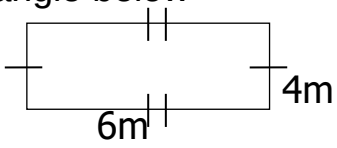
LESSON 20

Sub topic: area of a rectangle

Content

Example

1. Find the area of the rectangle below

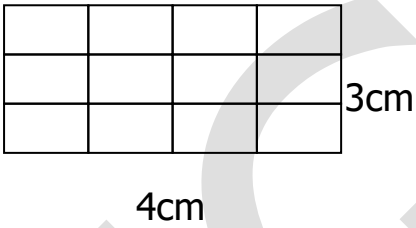


A = L x w

A = 6m x 4m

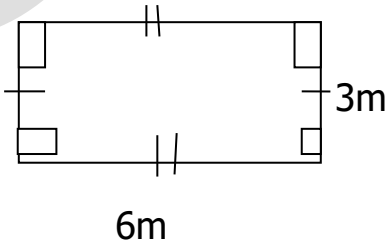
A = $24m^2$.

2. Find the area of a rectangle whose length is 4cm by 3cm.



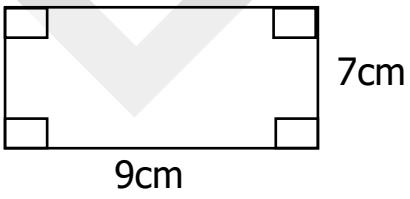
3. Find the area of a rectangle whose length is 6m and width 3m.

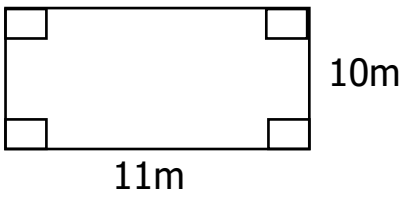
Sketch



ACTIVITY

1. Find the area of these figures.





2. Find the area of a rectangle whose length is 7dm and width 5dm.

3. The length of a rectangular mat is 12m and its width is 8m. Calculate its area.

4. Our school canteen measures 10m by 8m. What is its area?

5. Find the area of a rectangle whose length is 40mm and width 20mm.

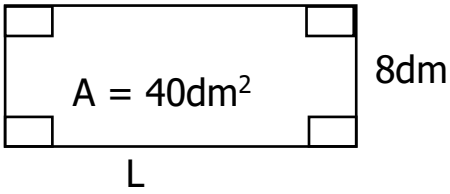
LESSON 21

Finding the unknown sides of a rectangle when given the area.

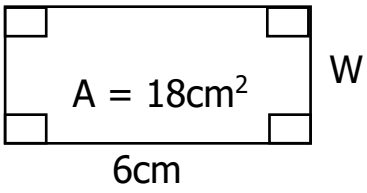
Examples

1. The area of a rectangle is $40dm^2$ and its width is 8dm. Find the length

Sketch



2. The area of a rectangle is $18cm^2$. Find its width if the length is 6cm.



ACTIVITY

1. The area of a rectangle is $24cm^2$. If its length is 6cm, find its width.

2. The area of a rectangle is $96cm^2$. Find its length if the width is 6cm.

3. The area of a rectangular room is $600m^2$ and its length is 30m. Determine its width.

4. Find the length of a rectangular garden whose area is $150m^2$ and width 10m.

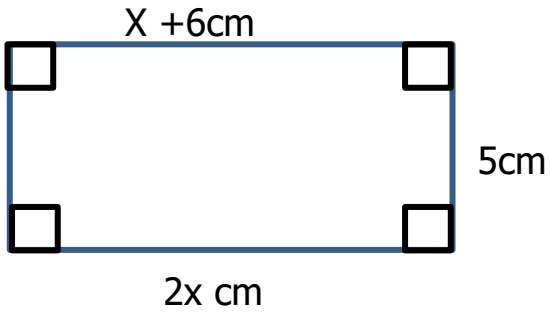
5. The area of a rectangular book is $105cm^2$. Its width is 7cm. Find its length.

LESSON 22

Sub topic: finding sides, area and perimeter

Examples

1. ABCD is a rectangle.



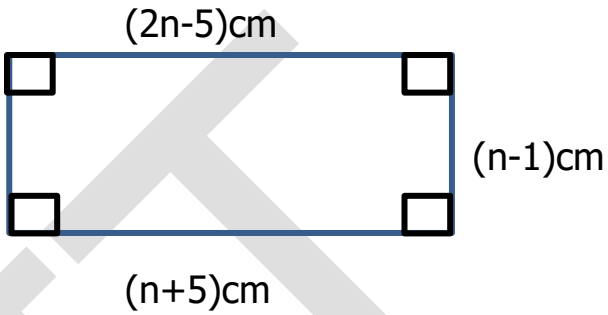
a) Find the value of x

b) Find the width and length.

c) Find the perimeter

d) Find the area

2. The diagram below is a rectangle.



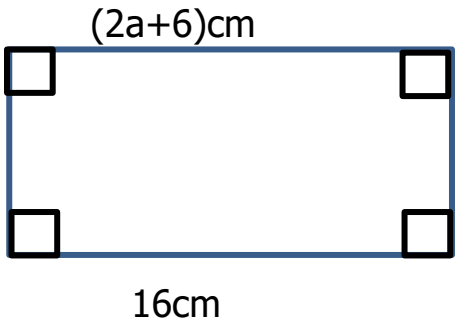
a) Find the value of n

b) Find the width and length.

c) Find the perimeter

d) Find the area

3. The area of the given rectangle is $160cm^2$.



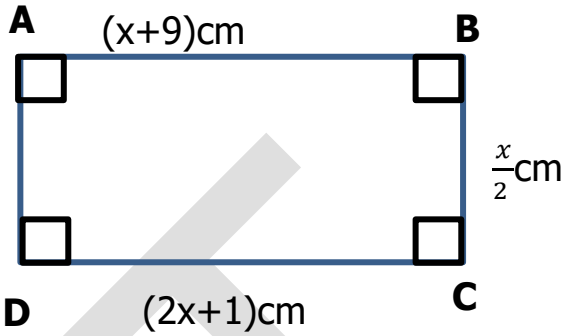
a) Find the value of a

b) Find its width.

c) Find its perimeter

ACTIVITY

1. ABCD is a rectangle



a) Find the value of x

b) Find the width and length.

c) Find the perimeter

d) Find the area

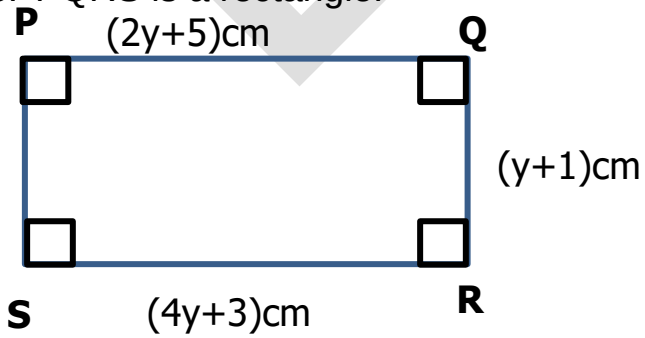
2. The three sides of a rectangle in order are 2p, (p+1)cm and (p+7)cm.

a) Find the value of p

b) Find the width and length.

c) Find the perimeter

3. PQRS is a rectangle.



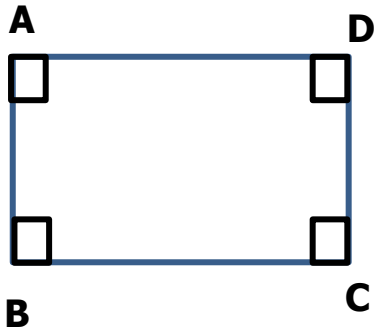
a) Find the value of y

b) Find the width and length.

c) Find the perimeter

d) Find the area

4. ABCD is a rectangle:
AD =(3x-6cm), AB = (3x-15)cm and BC = (2x+1)cm.



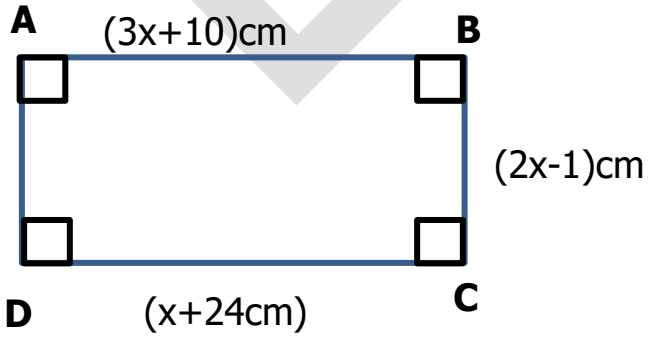
a) Find the value of x

b) Find the width and length.

c) Find the perimeter

d) Find the area

5. ABCD is a rectangle.

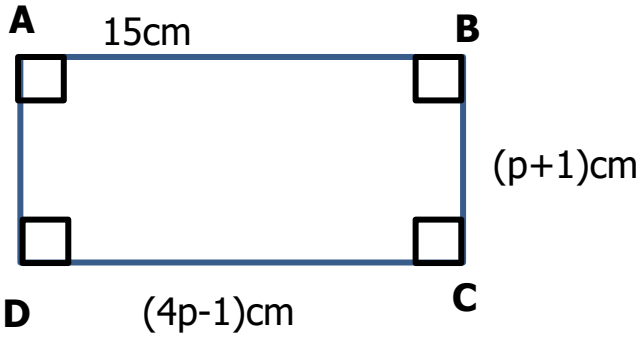


a) Find the value of x

b) Find the width and length.

c) Find the perimeter

6. ABCD is a rectangle.



a) Find the value of p

b) Find the width and length.

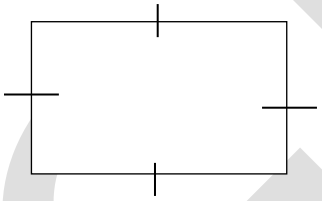
c) Find the area

LESSON 23

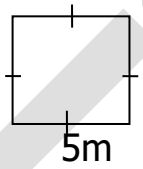
Sub topic: Area of a square

1. Find the area of a square

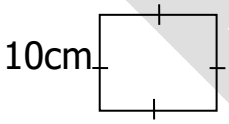
.



2. Find the area of a square whose side is 5cm.

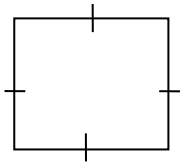


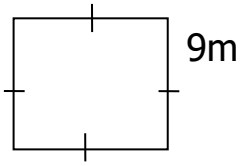
3. Find the area of:



ACTIVITY

1. Find the area of these squares.





2. The length of a square garden is 20m. Calculate its area.

3. Our school office measures 40cm by 40cm. What is its area?

4. Find the area of a square whose side is 15cm.

5. A square has a width measuring 8cm. Find its area.

LESSON 24

Finding the unknown sides of a square when given the area.

1. The area of a square is $36cm^2$ find its sides

S X S = A

$S^2 = A$

$S^2 = 36cm^2$

$\sqrt{S^2} = \sqrt{36cm^2}$

$S = 6cm$

∴ one side is 6cm

2	2	36
	2	18
3	3	9
	3	3

$\sqrt{36} = 2x3$

$= 6$

Find the square root of $36cm^2$

2. The area of a square is $100m^2$.

a) Find its sides

S x s = a

$S^2 = a$

$S^2 = 100m^2$

$\sqrt{S^2} = \sqrt{100m^2}$

$S = 10m$

∴ one side is 10m

2	2	100
	2	50
5	5	25
	5	5
		1

$\sqrt{100} = 2x5$

$= 10$

Find the square root of $100m^2$

b) What is its perimeter?

P = s+s+ s +s

P = 10m +10m +10m +10m

P = 20m + 20m

P = 40m

ACTIVITY

1. What is the side of a square whose area is $16cm^2$?

2. The area of a square is $25cm^2$. What is the size of one side?

3. Find one side of a square whose area is $81cm^2$.

4. A square room has an area of $64m^2$. How long are its sides?

5. The area of a square is $9cm^2$. Find its side and perimeter.

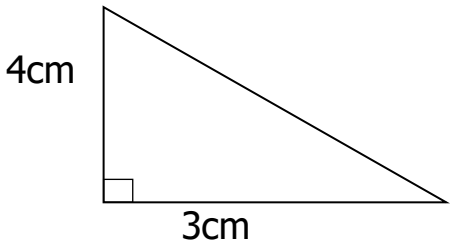
6. What is the perimeter of a square whose area is $144m^2$?

7. Find the sides and the perimeter of a square whose area is $49cm^2$.

LESSON 25

Sub topic: **Area of a triangle**

1. Find the area of the triangles below

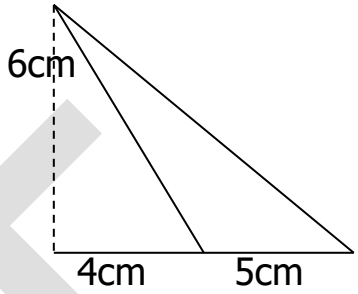


$A = \frac{1}{2} xbxh$

$A = \frac{1}{2} x3cmx4cm$

$A = 3cmx2cm$

$A = 6cm^2$



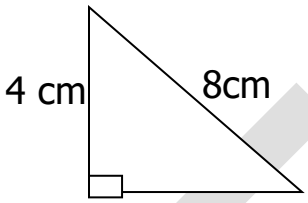
$A = \frac{1}{2} xbxh$

$A = \frac{1}{2} x5cmx6cm$

$A = 5cmx3cm$

$A = 15cm^2$

2. Find the area of the triangle below:-



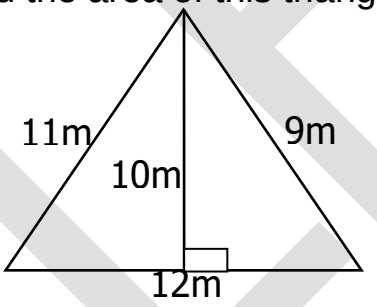
Area = $\frac{1}{2}$ x b x h

= $\frac{1}{2}$ x 6cm x 4cm

= 3cm x 4cm

= 12cm^2

3. Find the area of this triangle.



Area = $\frac{1}{2}$ x b x h

= $\frac{1}{2}$ x 12m x 10m

= 6m x 10m

= 60m^2

4. Find the area of a triangle whose base is 8cm and height 5cm.

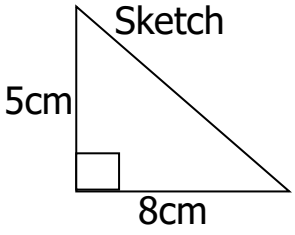
Area = $\frac{1}{2}$ x b x h

= $\frac{1}{2}$ x 8cm x 5cm

= 4cm x 5cm

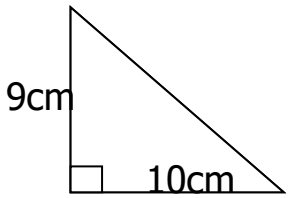
= 20cm^2

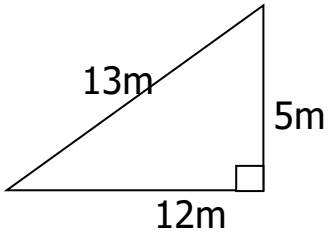
Sketch

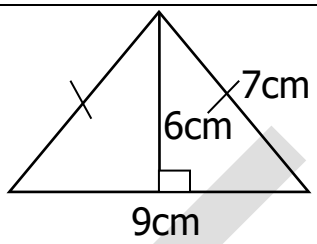


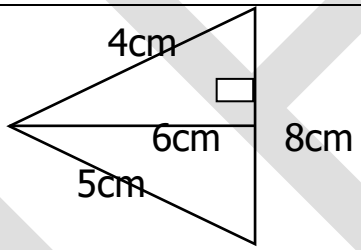
EXERCISE

1. Find the area of these triangles.

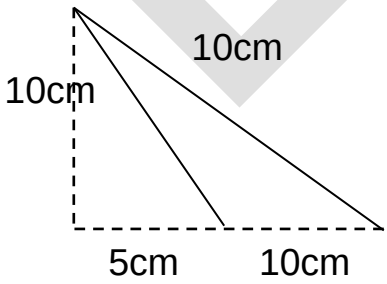








2. Find the area of the shaded part.



3. Find the area of a triangle whose height is 7cm and base 12cm.

4. The base area of a triangle is 5m and the height is 6cm. Calculate its area.

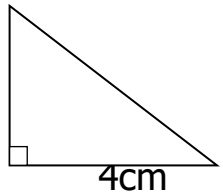
5. A triangular garden has a base of 18m and height of 10m. Calculate its area.

6. Determine the area of a triangular field whose height is 9km and base 6km.

LESSON 26

Sub topic: Word problems involving area of triangles
Content: Finding the base or the height of the triangle using the given area.
Examples

1. The base of a triangle is 4cm and its area is $28cm^2$. Find its height



2. The area of a triangle is $6cm^2$. What is its height if the base is3cm?

3. The height of a triangle is 5m. What is its base if the width is $30m^2$?

ACTIVITY

1. What is the height of a triangle whose area is $72cm^2$ and base 16cm?

2. Calculate the height of a triangle of base 10m and area $35m^2$?

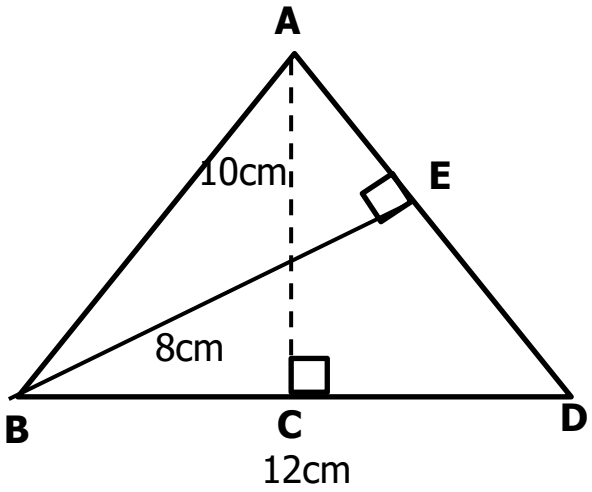
3. The area of a triangular garden is $63m^2$. Calculate its base if its height is 9m.

4. The area of a triangle is $24cm^2$. What is the height if its base is 6cm?

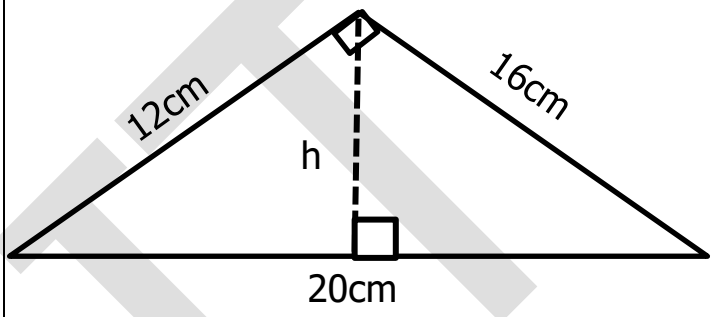
5. The area of a triangle is $180dm^2$. Find its base if its height is 18dm.

LESSON 27

Sub topic: Finding base or height by comparing area.

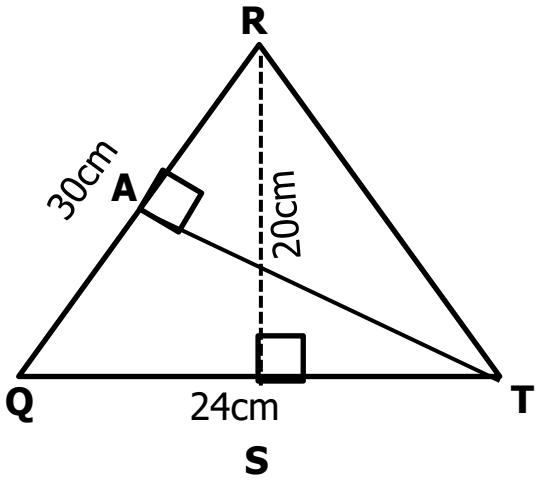


Find the value of h

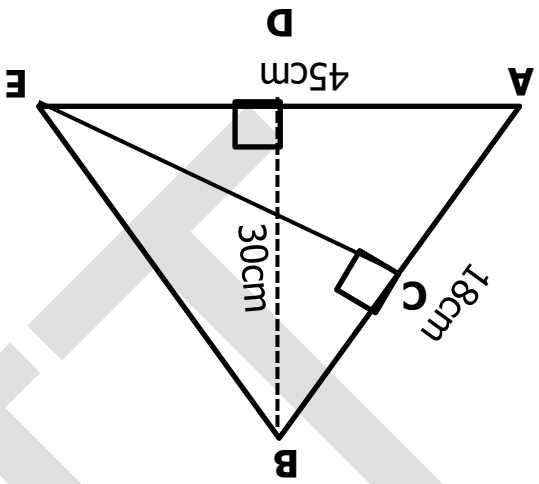


ACTIVITY

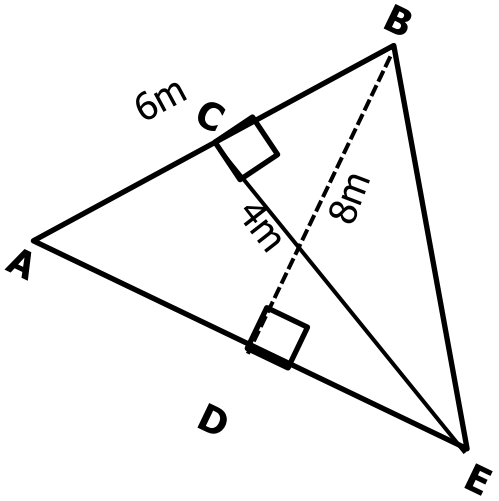
1. Find the length AT



2. Find the value of CE



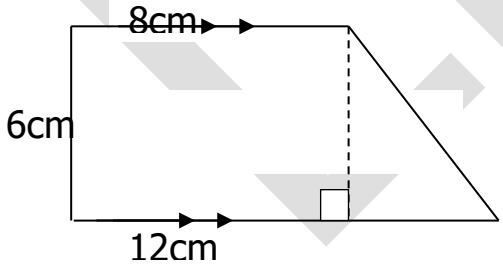
3. Find AE



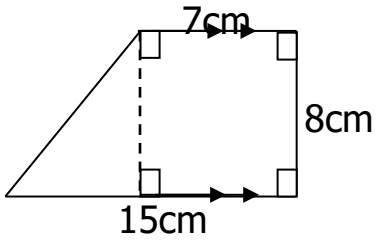
LESSON 28

Sub topic: Area of combined figures

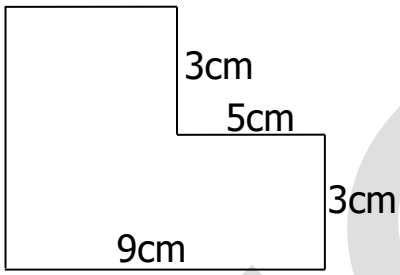
1. Find the area of the figures below



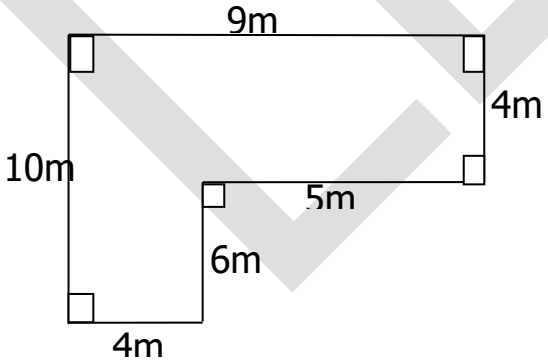
Find the area of the figure below.



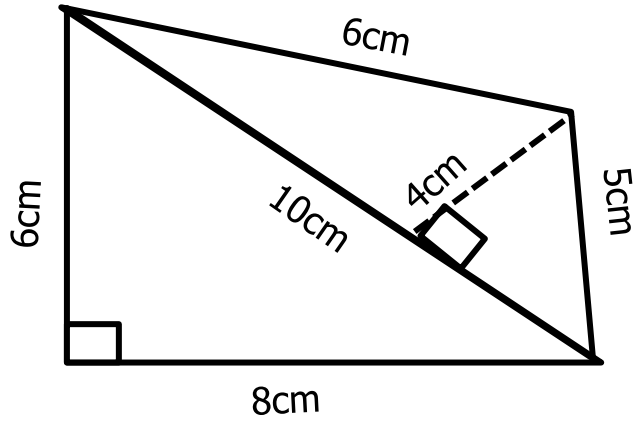
3. Find the area of the figure below.



4. What is the area of the figure below?



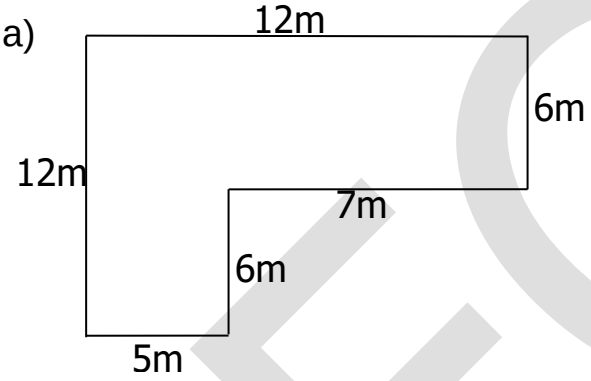
Find the area of the figure below



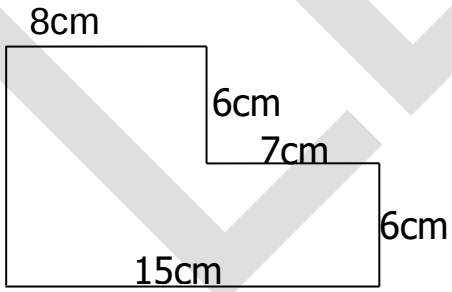
ACTIVITY

1. Find the area of the following figures.

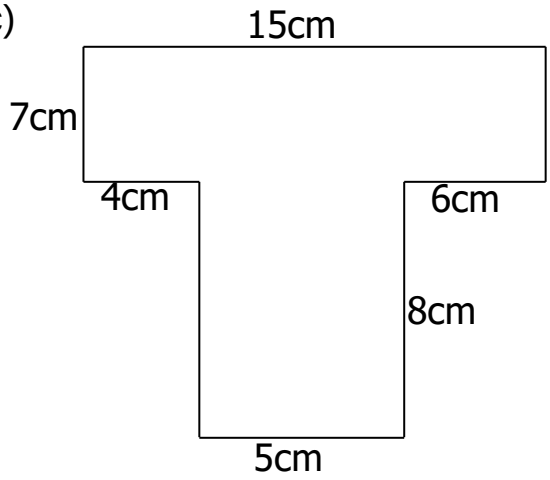
a)



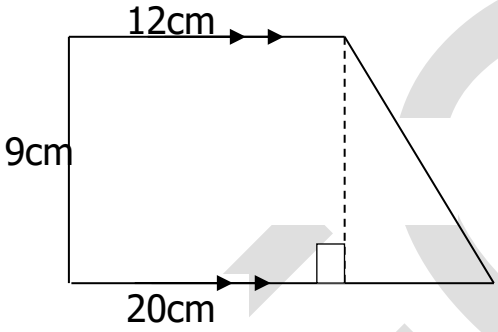
b)



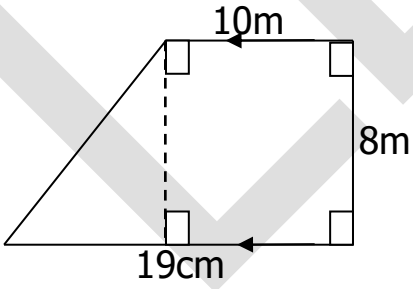
c)



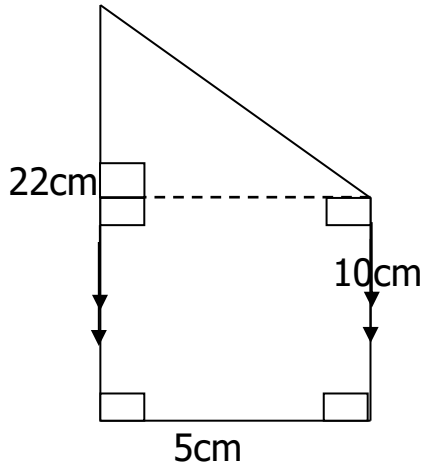
d)



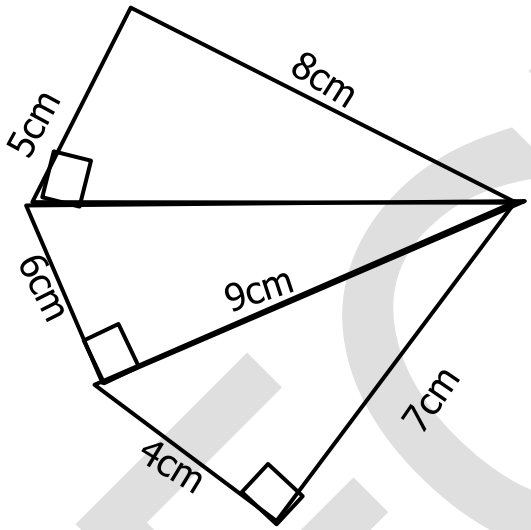
e)

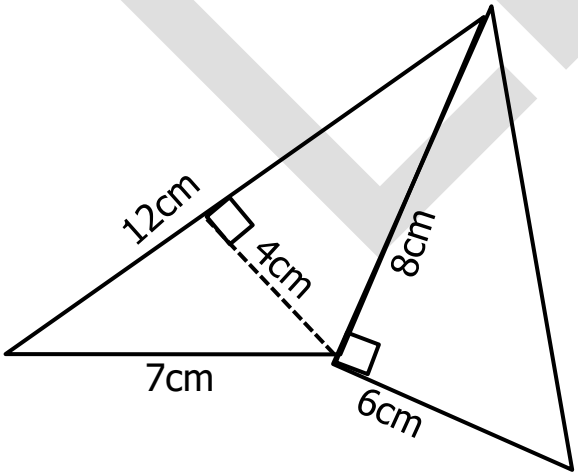


f)



g)



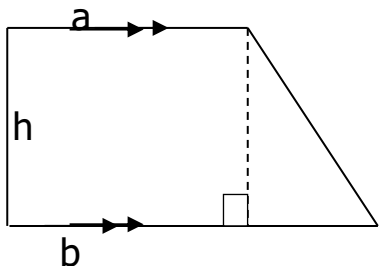


LESSON 29

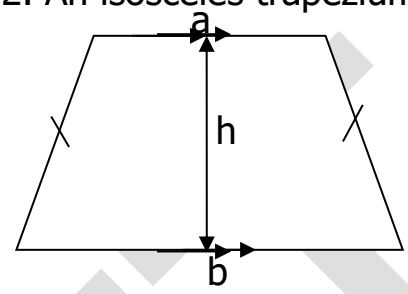
Sub topic: Area of Trapezium.

Content: Finding area of a trapezium using formula.

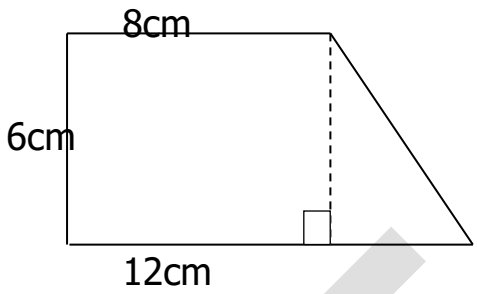
Right angled trapezium



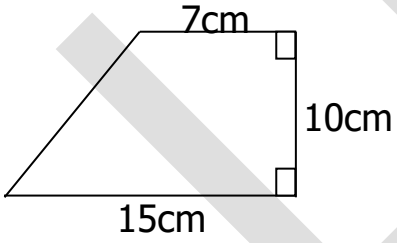
2. An isosceles trapezium



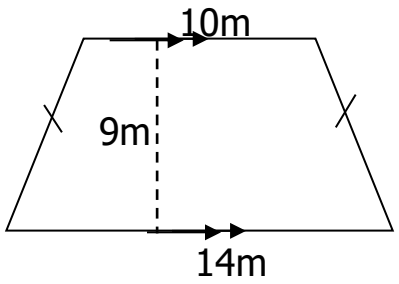
1. Find the area of the figures below



2. Find the area of the figure below.



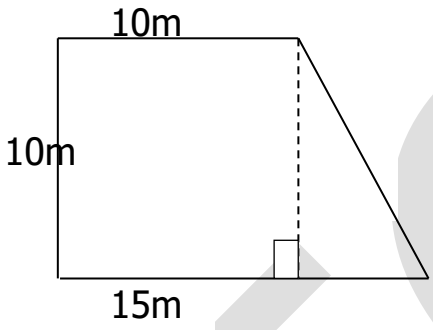
3. Find the area of the trapezium below.



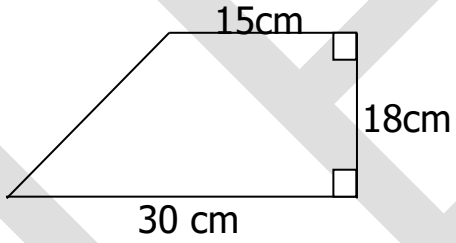
ACTIVITY

Find the area of the following trapezium

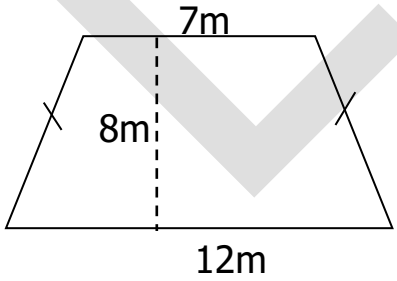
a)



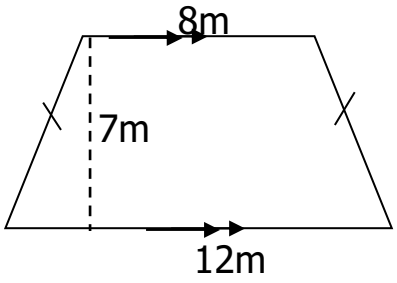
b)



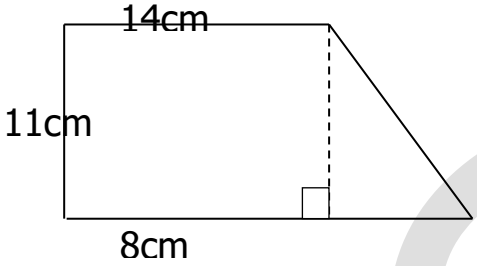
c)



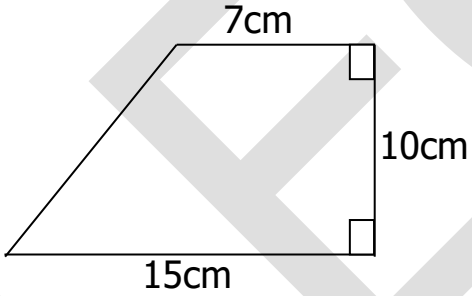
d)



e)



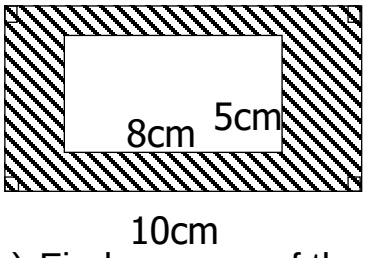
f)



LESSON 30

Sub topic: Area of shaded and unshaded regions

1. Study the figure below and answer the questions that follow.

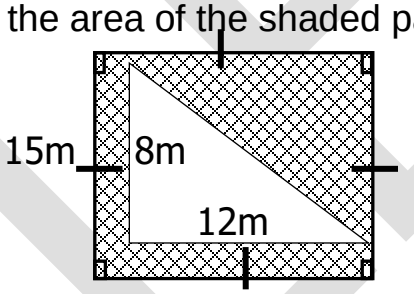


a) Find the area of the big rectangle.

b) Find the area of the small rectangle.

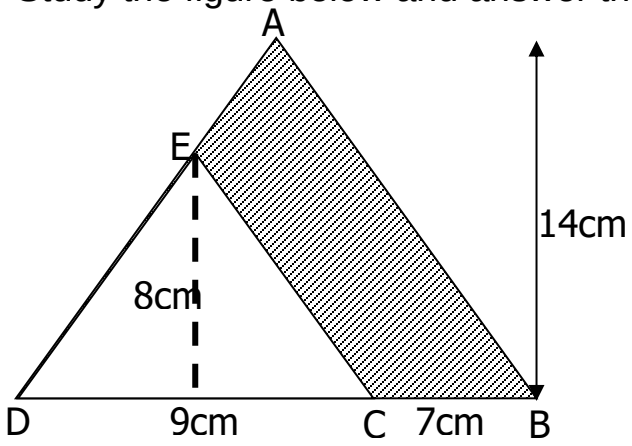
c) Find the area of the shaded part.

2. Find the area of the shaded part in the figure below.



6

3. Study the figure below and answer the questions that follow.

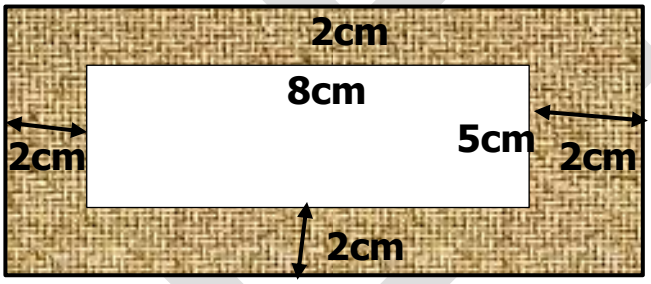


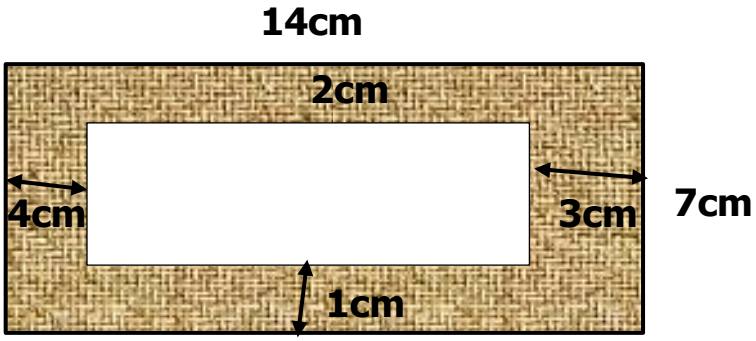
a) Find the area of the triangle CDE.

b) Find the area of the triangle ABD.

c) Find the area of the shaded part.

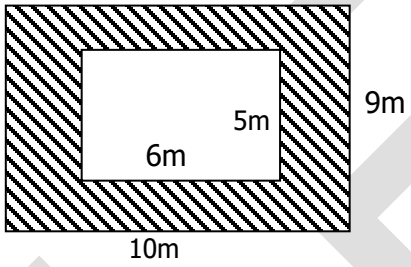
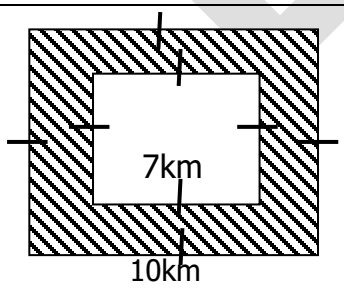
Find the area of the shaded part in the figures below

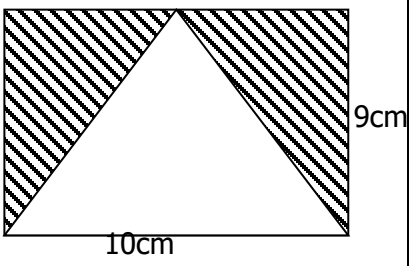
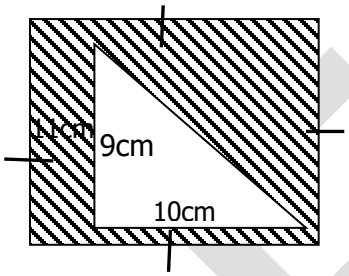




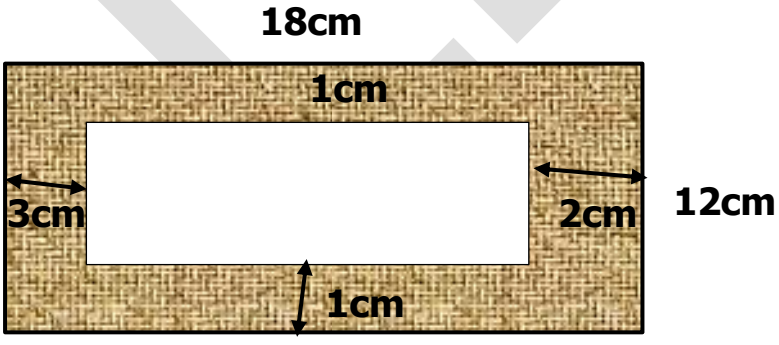
ACTIVITY

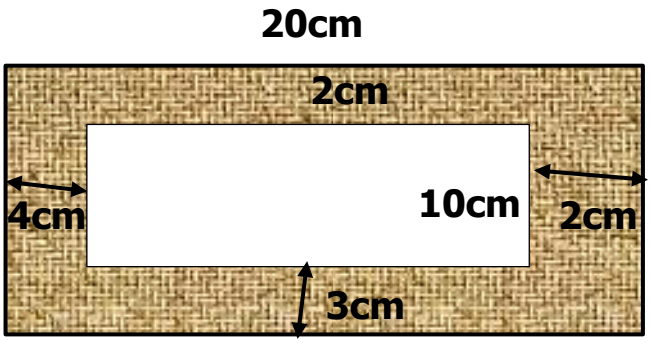
1. Find the area of the shaded part.

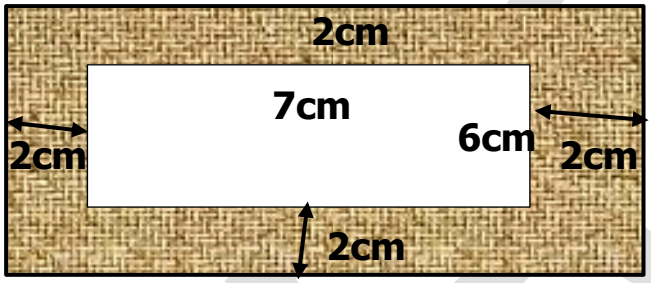
		Area of the big rectangle	Area of small rectangle	Area of the shaded part
		Area of the big square	Area of small square	Area of the shaded part
				

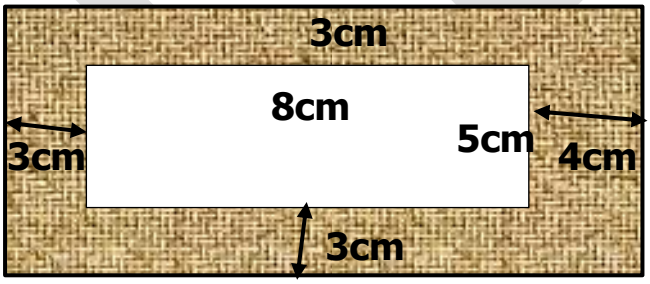
		Area of a rectangle	Area of a triangle	Area of the shaded part
				
		Area of a square	Area of a triangle	Area of the shaded part
				

2. Find the area of the figures below




20cm
2cm
4cm
10cm
2cm
3cm


2cm
7cm
2cm
6cm
2cm
2cm


3cm
8cm
3cm
5cm
4cm
3cm

3. A carpet measuring 3m by 3m is put into a sitting room measuring 5m by 4m.
   a) Find the area of the sitting room.

   c) Find the area of the uncovered part.

   b) Find the area of the carpet.

4. A table cloth measuring 90cm by 70cm was laid on a table top measuring 120cm by 90cm. Find the area which was not covered by the table cloth.

5. A triangular flower garden of base 15m and height 13m was dug into a rectangular compound of 22m by 15m. What was the area of the remaining part?

6. A manila paper of length 120cm and width 80cm was laid on a table top measuring 150cm by 130cm. Find the area of the uncovered part.

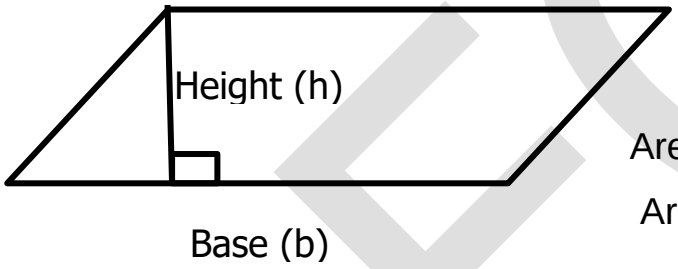
7. A rectangular room 10m by 9m is covered by a carpet in the centre, such that 2m width is left uncovered all round. Find the area of the uncovered.

8. A rectangular field is 30m by 20m. it is surrounded by a path 5m along the length and 3m along the width. Find the area of the path.

9. The path around a rectangular garden is 3m wide along the width of the garden and 4m wide along the length of the garden. Find the area of the path if the garden is 20m long by 15m wide.

LESSON 31

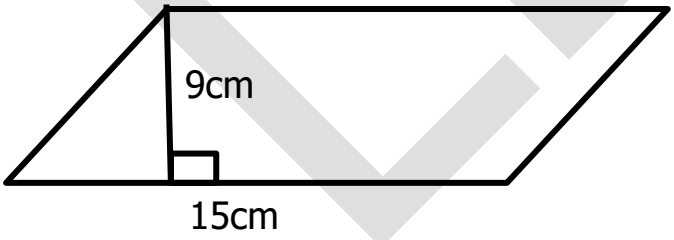
Sub topic: area of parallelogram

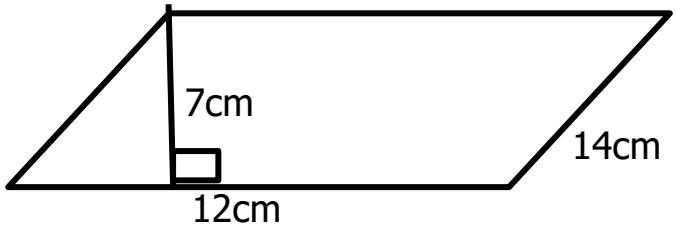


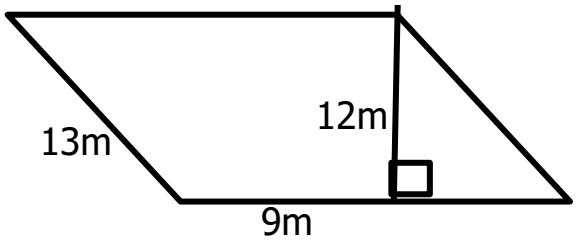
Area = base x height

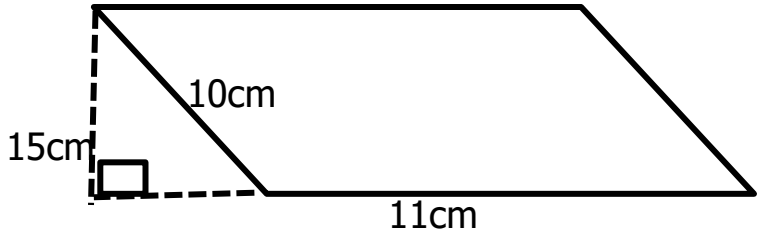
Area = b x h

Find the area of the following figures







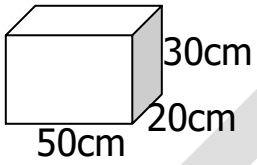


LESSON 32

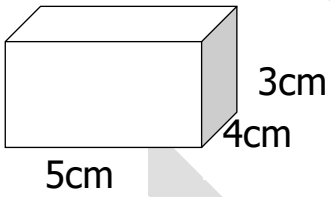
Sub topic: VOLUME OF A CUBOID AND CUBE

Content: Definition (volume) amount of space inside a container, cubes and cuboids

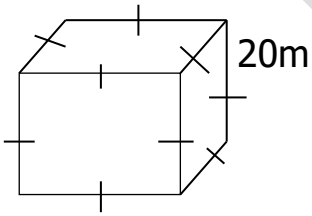
Examples



Find the volume of the cuboid

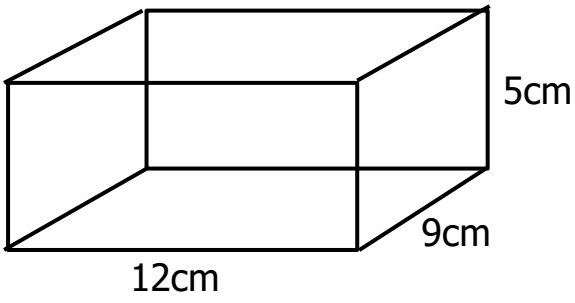


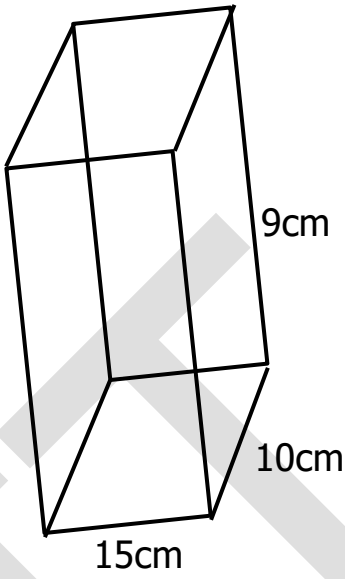
Find the volume of the cube below

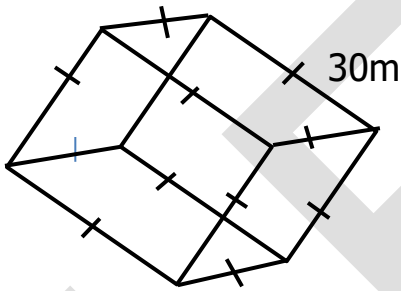


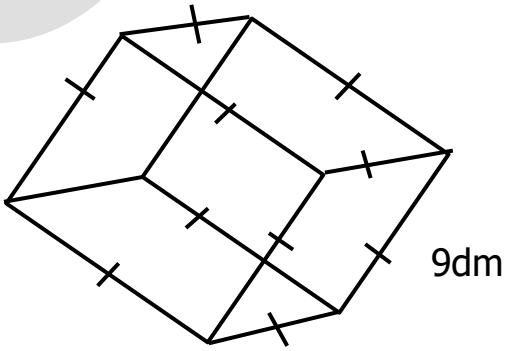
ACTIVITY:

1. Find the volume of the figures below









2. Find the volume of a cuboid whose length is 10cm, width 5cm and height 2cm.

3. Find the volume of the cube measuring 5cm.

4. A suit case measures 90cm by 50cm by 30cm. What is its volume?

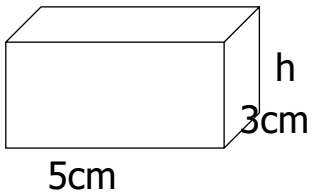
5. The length, width and height of a box are 11cm, 8cm and 20cm respectively. What is its volume?

6. Find the volume of a box measuring 15cm by 15cm by 15cm

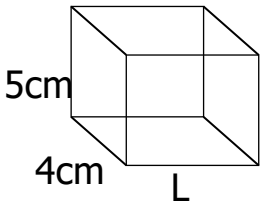
LESSON 233

Sub topic: Application of volume
Content:
Examples

1. Find the missing side of the cuboid given the volume = $50cm^3$.



2. The volume of a box is $60cm^3$. Its height is 5cm and width is 4cm. Find its length.



3. The volume of the cuboid is $80cm^3$. Its length is 8cm and height is 2cm. What is its width?

ACTIVITY

1. The volume of a box is $24cm^3$. Its length is 4cm, width 3cm. Find its height.

2. Find the width of a box with a length 6cm, height 5cm and a volume of $120cm^3$.

3. The volume of the cuboid is 72cm^3. Its width is 4cm, height 3cm. Find its length.

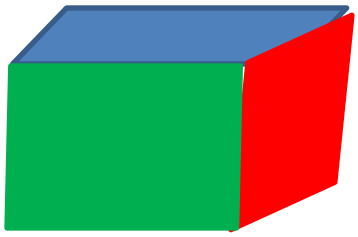
4. The volume of the box is 48cm^3. Its length and width is 4cm and 3cm respectively. What is its height?

5. The volume of the box is 64cm^3. Its length is 4cm, width 4cm. What is its height?

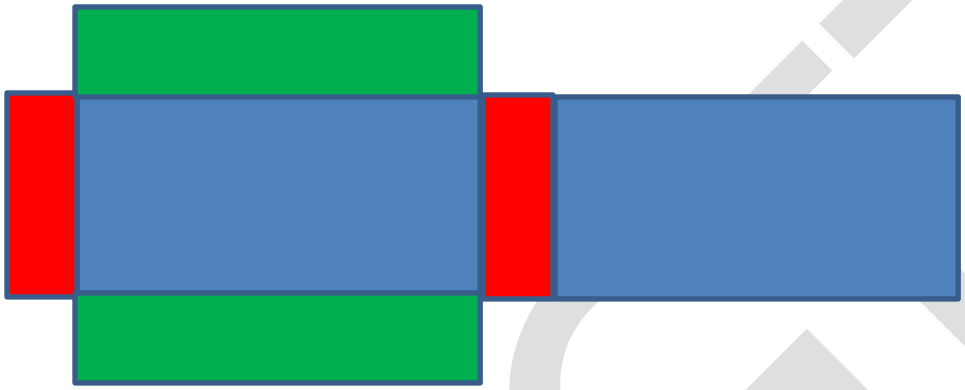
6. The volume of the cuboid is 100cm^3. Its length is 5cm and height 5cm. What is its width?

LESSON 34

Sub topic: TOTAL SURFACE AREA.



The above box, looked like this before joining



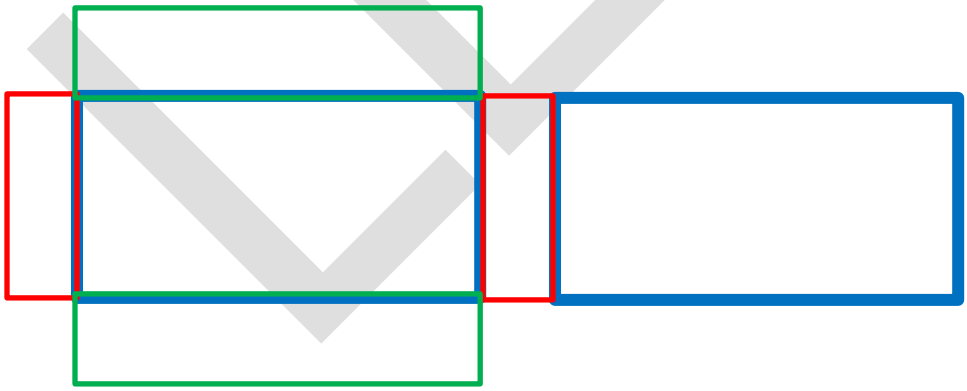
The above box has;

2 faces of length and width =2 (LW)

2 faces of length and height =2(LH)

2 faces of width and heigh =2(WH)

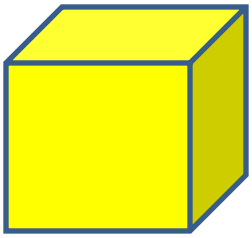
Net of a cuboid



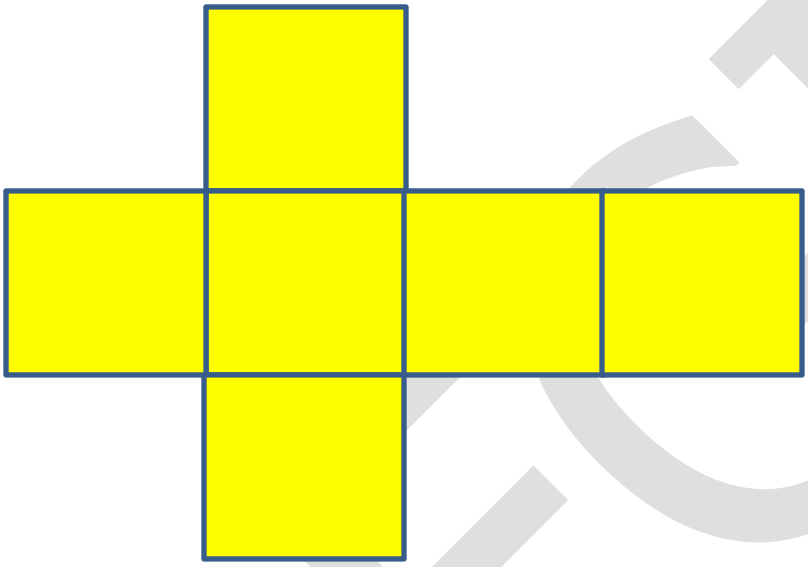
Total surface area = 2(lxw) + 2 (lxh) + 2 (wxh)

A cube

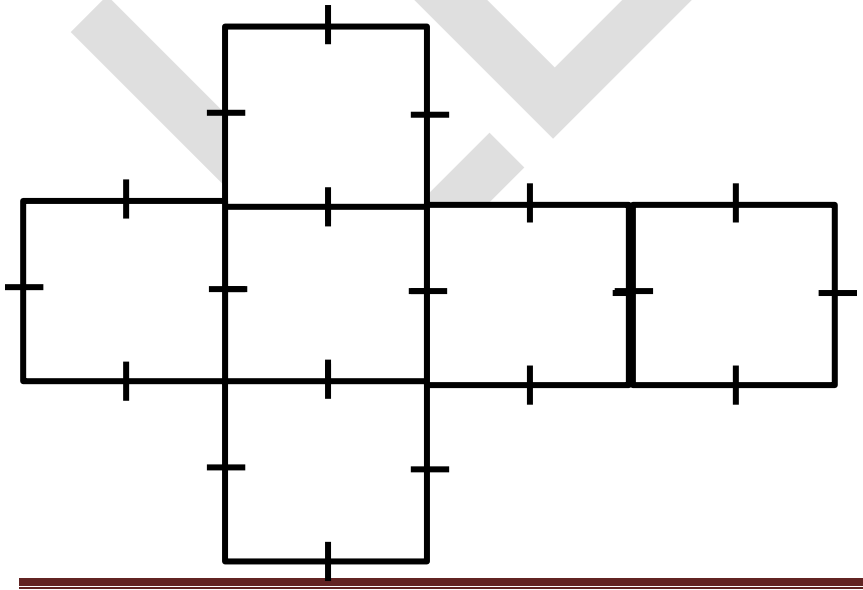
A cube has all its sides equal



The above cube looked like this before joining.



The net of a cube



Total surface Area= area of all squares.

Area of each square = S x S

Or = S^2

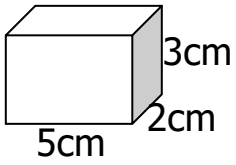
Total Surface Area = 6 x S x S

OR = $6S^2$

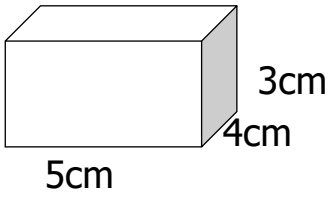
Examples

Find the total surface area of the figure below.

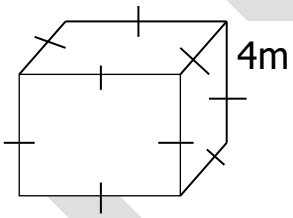
Examples



Find the total surface area of the figure below.

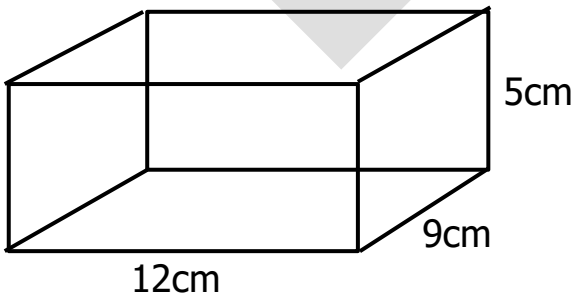


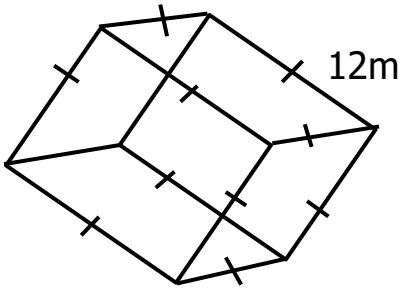
Find the total surface area of the figure below.

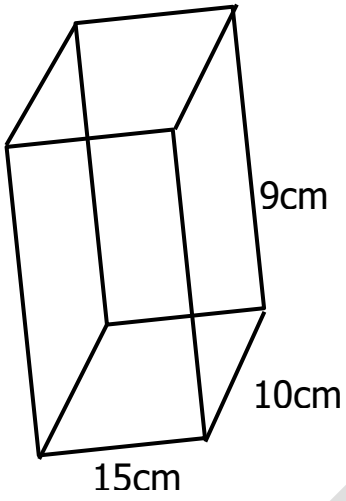


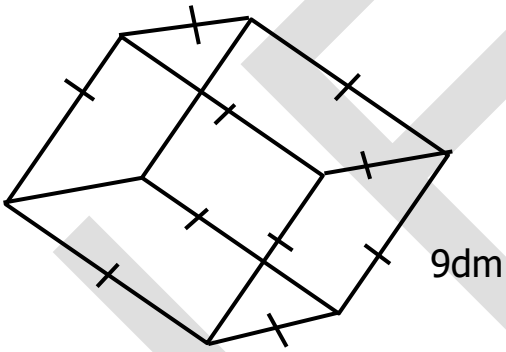
ACTIVITY:

1. Find the total surface area of the figure below.









2. Find the total surface area of a cuboid whose length is 10cm, width 5cm and height 2cm.

3. Find the total surface area of the cube measuring 5cm.

LESSON 35

Sub topic: capacity

Content: changing litres to millilitres and cubic centimetres.

1l = 1000cm^3 or 1000ml

Examples

Express 5litres of water as

Cubic centimetres	(b) millilitres
1l = 1000cm^3	1l = 1000ml
5l = (5 x 1000)cm^3	5l = (5 x 1000)ml
5l = 5000cm^3	5l = 5000ml

ACTIVITY

1. Express the following in cubic centimetres.
   a) 2 litres
   b) 0.3 litres

c) $5\frac{1}{4}$ Litres

e) 0.25 litres

d) 40.09 litres

2. Change the following litres to millilitres.

a) 25litres

d) 32.6 litres

b) 0.86litres

e) 0.5 litres

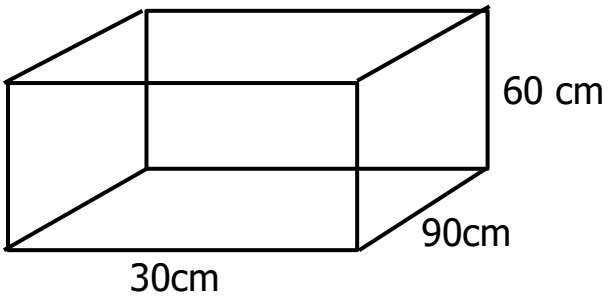
c) $2\frac{1}{2}$ Litres

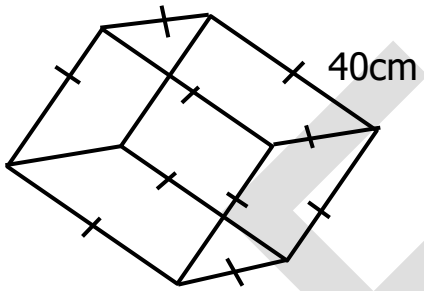
LESSON 36

Sub topic: FINDING CAPACITY IN LITRES

Examples

1. Find the capacity of the figure below

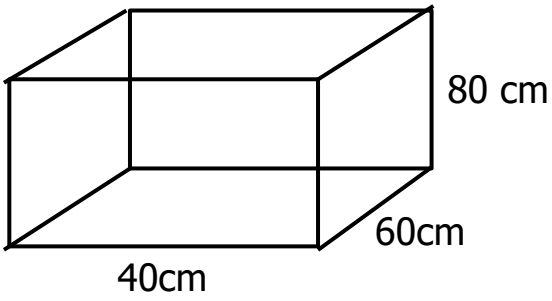


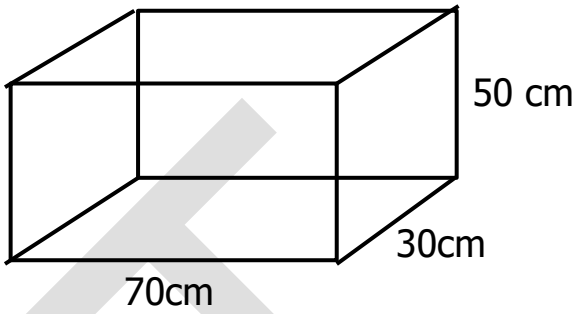


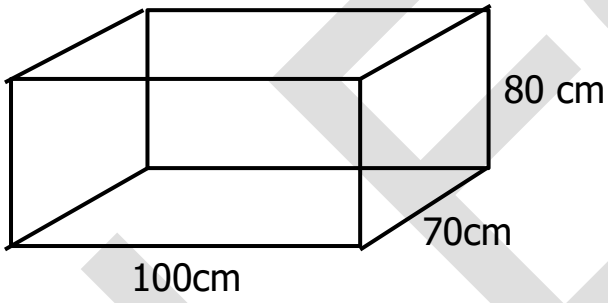
2. A rectangular tank below measures 30cm by 60cm by 90cm. find its capacity in litres.

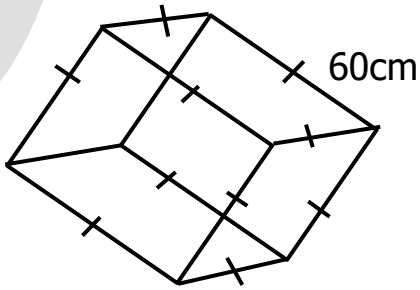
ACTIVITY

1. Find the capacity of the tanks below









2. A rectangular block measures 80cm by 70cm by 120cm. calculate its capacity in litres.

3. How many litres are in a rectangular tank measuring 80cm by 100cm by 200cm?

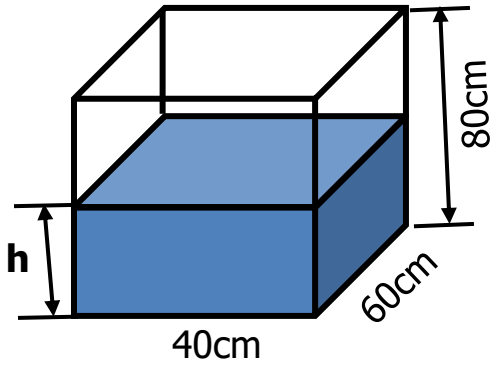
4. Find the capacity in litres of the water in the tank whose length is 0.3m, width is $\frac{2}{5}$m and height 1m.

LESSON 37

Sub topic: More about capacity

Examples

1. The tank below is holding 72 litres of water

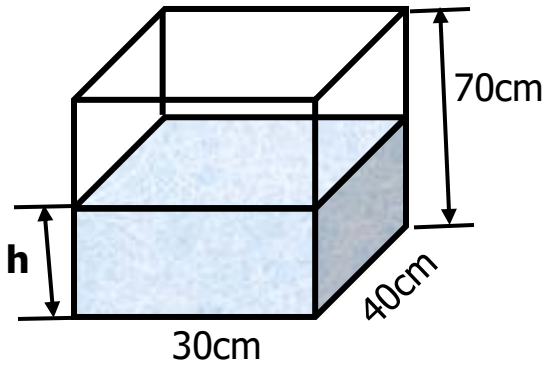


a) Calculate the value of h

b) How many litres are needed to fill the tank.

EXERCISE

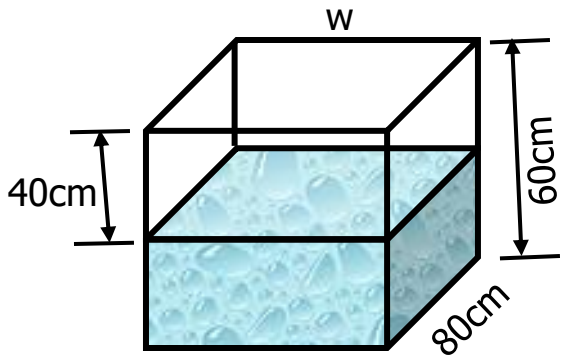
1. The tank below is 72 litres full of water



a) Calculate the value of h

c) How many litres are needed to fill the tank.

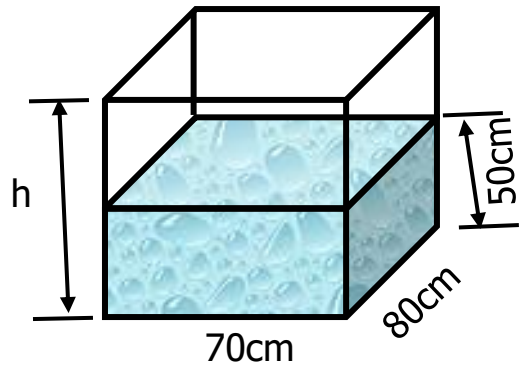
2. The tank below is 96 litres full of water



a) Calculate the value of w

b) How many litres can fill the tank

3. The tank below is $\frac{1}{3}$ full of water

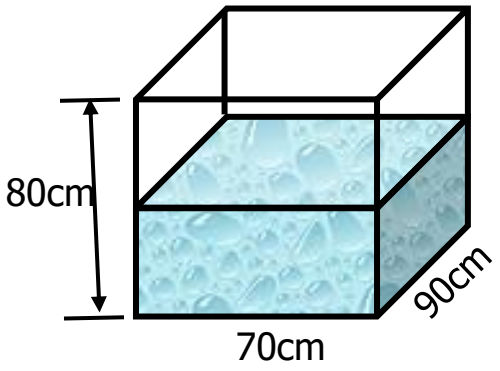


a) How many litres of water are in the tank?

c) How many litres are needed to fill the tank.

d) What is the height of the tank?

4. The tank below is $\frac{1}{3}$ full of water



b) How many litres of water are in the tank?

b) What will be the new water level if 126 litres of water are drawn from the tank when full?

LESSON 38

Sub topic: comparing metric units

Content: changing millilitres and cubic centimetres to litres.

Example

Place value	Kilo	Hector	Deca	Basic	Deci	Centi	Milli
Meaning	1000m	100m	10m	Metre, gram, litre	$^1/_{10}$of m	$^1/_{100}$ x m	$^1/_{1000}$ x m

Expressing millilitres as litres.

1. Change 3000ml to litres

2. Express 9250ml in litres.

Expressing cubic centimetres as litres.

1. Change 5000cm^3 to litres

2. Express 9200cm^3 in litres.

ACTIVITY

1. Change the following millilitres to litres.

   a) 6,000ml

   b) 24,000ml

c) 11,500ml

d) 6,750ml

e) 6,300ml

2. Convert the following cubic centimetres to litres

a) 3000cm^3

b) 17,600cm^3

c) 4,250cm^3

d) 8,700cm^3

e) 21,500cm^3

LESSON 39

TOPIC : GEOMETRY
SUBTOPIC : Circles (making circles)

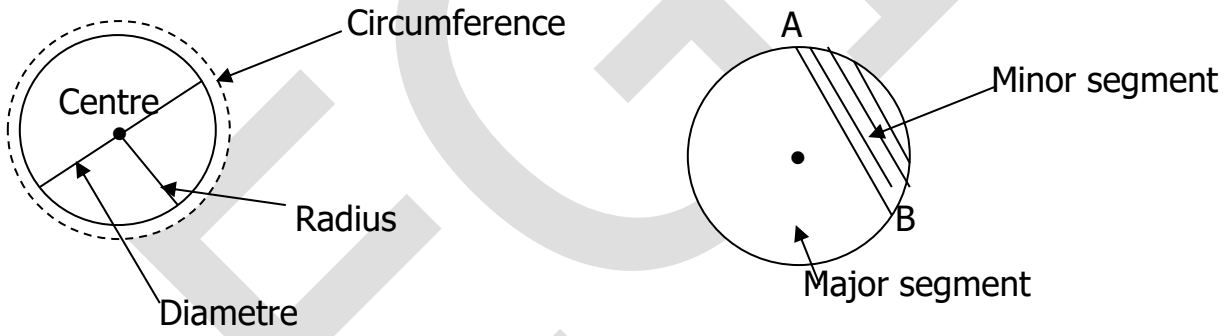
CONTENT : Circles will be drawn in different forms like using:

- Hard papers / circular objects.
- Strings
- The big toe
- A pair of compasses

* a pair of compasses.

Parts of a circle. (Naming)

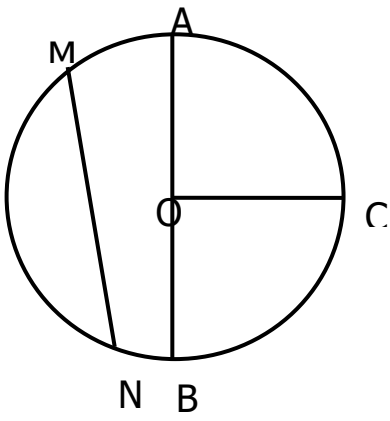
Parts shown on circles



1. Circumference is the distance round the circle.
2. A radius is a line from the centre of a circle to the edge.
3. A diametre is a line crossing from one side of the circle to the other side passing in the middle.
4. A chord is any straight line drawn across a circle but not passing in the centre.
5. A centre is a middle point of a circle.
6. AB is a chord because it is a straight line joining two points on a circle.

ACTIVITY:

1. Study the circle below.



a) Name the point marked o.

b) Name the lines marked;

(i) AB .....

(ii) OC .....

(iii) MN .....

(iv) AO .....

(v) OB .....

TOPIC : GEOMETRY
SUBTOPIC : Finding the diameter when given the radius.

CONTENT : Example

Radius	2cm	6cm	7cm	9cm	10cm	13cm
Diameter	4cm	12cm	14cm	18cm	_____	_____

Diameter = r + r
= 6 + 6
= 12cm

Diametre = r + r
= 7cm + 7cm
= 14cm

Diameter = r + r
= 9cm + 9cm
= 18cm

Diametre = r + r
= 10cm + 10cm
= 20cm

SUBTOPIC : Finding the radius when given the diameter.

CONTENT : Example

1. Find the radius of a circle whose diameter is 12cm.

Radius = Diameter / 2

$= \frac{\overset{6}{\cancel{12}}}{\cancel{2}}$ = 6cm.

2. Find the radius of a circle whose diameter is 24cm.

$\text{Radius} = \frac{diameter}{2}$

$= \frac{24cm}{2}$

$= 12cm$

3. A bicycle wheel has a diameter of 40cm. what is its radius?

$\text{Radius} = \frac{diameter}{2}$

$= \frac{40cm}{2}$

$= 20cm$

ACTIVITY:

1. Find the diameter of a circle whose;
   a) Radius is 12cm
   b) Radius is 4cm
   c) Radius is 25cm
2. Fill in the table below.

Radius	2cm	6cm	7cm	9cm	10cm	13cm	14cm	15cm
Diameter	4cm	____	____	____	____	____	____	____

3. Find the radius of a circle if the:

(a)

(b) Diameter is 14cm

(c) Diameter is 22cm

(d) Diameter is 34 cm

4. Study and complete the table below.

Radius	4cm	_____	_____	_____	_____	_____	_____
Diameter	8cm	10cm	24cm	40cm	70cm	90cm	100cm

LESSON 40

TOPIC : GEOMETRY

SUBTOPIC : RELATIONSHIP BETWEEN CIRCUMFERENCE, DIAMETER AND PI

Finding pi

1. Get any circular object.
2. Use a string and a ruler to measure the distance round the object (circumference) and record it.
3. Use the same string to find the middle length of the object throught the circle (diameter)
4. Divide the length of the circumference by the length of the diameter to get pi.

   From the above, pi = $\frac{circumference\ (C)}{diameter\ (D)}$

   The symbol for pi is π

   Formula

   a) $\pi = \frac{C}{D}$

   b) $D = \frac{C}{\pi}$

   c) $C = \pi\, xD$
5. When you divide circumference by diameter, you get a standard range of 3.14 which can be written as $\frac{22}{7}$ as a fraction

TOPIC : GEOMETRY

SUBTOPIC : FINDING PERIMETER OF THE CIRCLE (CIRCUMFERENCE)

NOTE

1. Circumference is the total distance around the circle.
2. When finding circumference, it's advisable to use π as 3.14 if the given radius or diameter is a multiple of 10 or 100 and use $\frac{22}{7}$ if the given radius or diameter is a multiple of 7
3. When given diameter, circumference = πD
4. When given radius , circumference = 2 πr because D= 2r

CALCULATING FOR CIRCUMFERENCE

Examples

1. Find the circumference of a circle whose diameter is 10cm.

2. Find the circumference of a circle whose radius is 10dm.

3. Find the circumference of a circle whose radius is $3\frac{1}{2}$m

ACTIVITY

1. A circular plate has a diameter of 14cm. calculate its circumference.

2. A circular bottom of a mug has a radius of 50mm. find its circumference.

3. Find the circumference of a circular garden whose radius is 14cm.

4. Calculate the circumference of a circle whose diameter is 20m.

LESSON 41

TOPIC : GEOMETRY
SUBTOPIC : FINDING AREA OF A CIRCLE

NOTE

1. Area of a circle = πr^2
2. Area of a semi-circle (half circle) = $\frac{1}{2}\pi r^2$
3. Area of a quadrant (quarter circle) = $\frac{1}{4}\pi r^2$
4. Area of a circle with any given angle = $\frac{Given\ angle}{360}\pi r^2$

NOTE

1. When finding area, it's advisable to use π as 3.14 if the given radius or diameter is a multiple of 10 or 100 and use $\frac{22}{7}$ if the given radius or diameter is a multiple of 7
2. When given diameter, first find its radius because diameter in most cases is not applied in the formula of finding area of a circle.

CALCULATING FOR AREA OF A CIRCLE

Examples

1. Find the area of a circle whose diameter is 20cm.

2. Find the area of a circle whose radius is 7dm.

3. Find the area of a circle whose radius is $3\frac{1}{2}$m

ACTIVITY

1. A circular plate has a diameter of 14cm. calculate its area

2. A circular bottom of a mug has a radius of 50mm. find its area.

3. Find the area of a circular garden whose radius is 14cm.

4. Calculate the area of a circle whose radius is 20m.

5. Find the area of a semi-circle whose radius is 14cm.

6. Find the area of a quadrant whose diameter is 40m