P.6 MATHEMATICS LESSON NOTES TERM III

TOPIC: MEASURES (length**)**

Sub topic: Measuring length of lines and other regular objects**.**

Competences: By the end of the lesson**;**

Subject competence

- The learner identifies the question given.
- Measures the line of any other shapes given.
- Finds the perimeter for the case of shapes like a rectangle after measuring.

Language competences.

The learner reads pronounce and spells words such as

- Perimeter
- Length
- Measuring
- Measurement
- A round etc.

METHODS

- Illustration
- Guided discovery

CONTENT

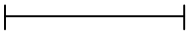
Measuring length

Practical activity will be carried out. Where by learners will measure their chalk board, tables etc.

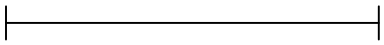
ACTIVITY

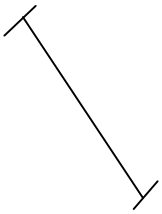
Measure the line segments below in millimeters.

(a) 

(b) 

(c) 

(d) 

(e) 

TOPIC: LENGTH

Sub topic: Changing kilometres to metres

Competences:

Subject competence

The learners;

- Identifies the question given.
- States how many metres in a kilometre.
- Multiplies when changing to metres.

Language competences.

The learners;

- Reads, pronounces and writes words such as kilometre, metre.

CONTENT

Changing kilometers to metres.

To change a big unit to a small unit we multiply

Examples

1. Change 3km to metres.
   1km = 1000km.
   3km = (3×1000) M
   :. 3km = 3000M

2. Convert 0.4km to metres
   1KM = 1000M
   0.4KM = $(\frac{4}{10} \times 1000)$M

= (4 ×100) M

0.4KM = 400M

3. Change $1\frac{1}{2}$ km to metres.

1km = ~~1000~~)m

$1\frac{1}{2}$ km = ($1\frac{1}{\cancel{2}_{1}}$ ×~~1000~~^{500}) M

= ($\frac{3}{2}$ ×1000)

(3×500) m

500m

× 3

1500m

:. $1\frac{1}{2}$ km = 1500m

4. Convert 1.2km to metres

1km = 1000m

1.2km = (1.2 ×1000) m

= ($\frac{1\overset{1}{\cancel{2}}}{1\cancel{0}}$ × 100$\cancel{0}$) m

12 ×100

1.2km = 1200m

ACTIVITY

Change the following kilometers to metres.

1. (a) 5km (b) 9km (c) 11km (d) 24km (e) 93km
2. (a) 0.5km (b) 0.2km (c) 0.03km (d) 0.52km
3. (a) 1.6km (b) 2.02km (c) 0.003km (d) 3.3km
4. (a) $2\frac{1}{2}$ km (b) $1\frac{1}{4}$ km (c) $5\frac{1}{5}$ km.

TOPIC: LENGTH

Sub topic: changing kilometres to centimetres

Competences:

Subject

- Identifies the question given.
- State how many centimetres in a kilometre
- Multiplies when changing to centimetres

Language

The learner; reads, writes and pronounces words such as kilometre and centimeter.

CONTENT

Changing kilometers to centimetres

Examples

1. Change 7km to centimetres.
   1km = 100,000cm
   7km = (7×100,000)
   :. 7km = 700,000cm.

2. Convert 0.4km to centimetres.
   1km = 100,000
   0.4km = $(\frac{4}{10} \times 100{,}000)$ CM
   (4×10000)cm
   :. 0.4km 40000cm.

3. Change $1\frac{1}{2}$ km to centimetres.
   1km = 100000cm
   $1\frac{1}{2}$ km = $(\frac{3}{2} \times 100{,}000)$ cm

   :. $1\frac{1}{2}$ = 150,000cm.

ACTIVITY

Change the following kilometers to centimetres.

1. (a) 4km (b) 14km (c) 18km (d) 32km (e) 8km
2. (a) 0.5km (b) 1.2km (c) 0.003km (d) 1.23km
3. $1\frac{1}{2}$ km (b) $3\frac{1}{5}$ km (c) $4\frac{1}{2}$ km (d) $4\frac{1}{5}$ km (e) $3\frac{1}{2}$ km
4. (a) $\frac{4}{5}$ Km (b) $\frac{3}{4}$ km (c) $\frac{1}{5}$ km (d) $\frac{1}{4}$ km.

TOPIC: LENGTH

Sub topic: changing metres to centimetres

Competences:

Subject

The learners,

- Identifies the question given
- States how many centimetres are in a metre
- Multiplies when changing to centimetre

CONTENT

Changing metres to centimetres

Examples

1. Change 4metres to centimetres
   1M = 100cm
   4m = (4×100) cm
   :. 4m = 400cm

2. Convert 0.5m to centimetres
   1M = 100cm
   $0.5M = (\frac{5}{10} \times 100)$ cm
   :. 0.5M = 50cm

3. Change $\frac{5}{10}$ m to centimetres
   1m = 100cm
   $\frac{5}{10}M = (\frac{5}{10} \times 100)$ cm

   $\frac{5}{10}M = 50cm$

4. Convert $2\frac{1}{2}$ M to centimetres
   1M = 100cm
   $2\frac{1}{2}M = (\frac{5}{2} \times 100)$ cm

(5×50)cm

250cm

:. $2\frac{1}{2}$ M = 250cm.

ACTIVITY

Change the following metres to centimetres.

1. (a) 5M (b) 25m (c) 36m (d) 84m (e) 96m
2. (a) 0.6m (b) 0.02m (c) 1.4m (d) 2.5m
3. (a) $1\frac{1}{2}$ m (b) $2\frac{1}{2}$ m (c) $3\frac{1}{5}$ m (d) $\frac{2}{5}$ m (e) $\frac{4}{5}$ m.

TOPIC: LENGTH

Sub topic: changingcentimetres to millimetres

Competences:

Subject

The learners;

- Identifies the question given
- Changes to millimeters

CONTENT

Changing centimetres to millimeters

Examples

1. Change 6 centmetres to millimeters

   1cm = 10mm

   6cm = (6×10)mm

   6cm = 60mm

2. Change $\frac{1}{2}$ centimetres to millimeters

   1cm = 10mm

   $\frac{1}{2}$ cm = ($\frac{1}{2}$ × 10) mm

   = 5mm

   :. $\frac{1}{2}$ cm = 5mm

ACTIVITY

Change the following centimetres to millimeters.

1. (a) 4cm (b) 5cm (c) 9cm (d) 11cm (e) 13cm
2. (a) 1.2cm (b) 0.2cm (c) 3.3cm (d) 9.1cm
3. (a) $\frac{1}{5}$ cm (b) $\frac{1}{2}$ cm (c) $2\frac{1}{2}$ cm (d) $5\frac{1}{5}$ cm

TOPIC: LENGTH

Sub topic: changingmetres to kilometres

Competences:

Subject
The learner;
Interpretes the question given
Divides when changing to kilometers.

CONTENT
Changing metres to kilometers.

Examples

1. Change 2500 metres to kilometers.
   1000m = 1km

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

   2500m = $(\frac{1}{1000} \times 2500)$ km

   $(\frac{25}{10})$ km

   :. 2500m = 2.5km

2. Change 870 metres to kilometers.
   1000M = km

   1M = $(\frac{1}{1000})$ km

   870m = $(\frac{1}{1000} \times 870)$ km

   $(\frac{87}{100})$ km

   0.87km

   :. 870M = 0.87km

3. Change 3125M to km
   1000M = 1km

   1M = = $(\frac{1}{1000})$ km

   3125M = $(\frac{1}{1000} \times 3125)$ km

   $(\frac{3125}{1000})$ km

   :. 3125M = 3.125KM

ACTIVITY

Change the following metres to kilometers

1. 420M
2. 552M
3. 1080M
4. 330M
5. 859M
6. 2096M
7. 440M
8. 5150M

TOPIC: LENGTH

Sub topic: changing metres to kilometres

Competences:

Subject

The learners;

- Identifies the question given
- States how many centimetres are in a metre
- Divide when changing to metres.

Language

The learner;

- Spells, reads and pronounces words such as

CONTENT

Changing centimetres to metres

Examples

1. Change 300cm to metre.
   100cm = 1m

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

300cm = $(\frac{1}{100} \times 300)$ m

= (1 ×3) m

:. 300cm = 3m

2. Change 460cm to metres.

100cm = 1m

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

460cm = $(\frac{1}{100} \times 460)$ m

= $(\frac{46}{10})$ m

:. 460cm = 4.6m

3. Convert 2700cm to metres

100cm = 1m

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

2700cm = $(\frac{1}{100} \times 2700)$ m

= (1×27) m

:. 2700cm = 27m

ACTIVITY

Change the following centimetres to metres

1. 200cm (2) 150cm (3) 700cm (4) 900cm (5) 990cm (6) 940cm
7. 400cm (8) 910cm (9) 850cm (10) 1200cm

TOPIC: MEASURES

Sub topic:changing millimetres to centimetres

Competences:

Subject

The learners;

- Identifies the question given
- States how many millimetres are in centimetres
- Divides when changing to centimetres

CONTENT

Changing millimetres to centimetres

Examples

1. Express 25mm as cm

   10mm = 1cm.

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

   25mm = $(\frac{1}{10} \times 25)$ cm

   $= (\frac{25}{10})$ cm

   25mm = 2.5cm

2. Express 40mm as cm

   10mm = 1cm

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

   40mm = $(\frac{1}{10} \times 40)$ cm

   40mm = 4cm

ACTIVITY

Change the following millimetres to centimetres

1.	20mm	(2) 40mm	(3) 64mm	(4) 75mm	(5) 150mm
6	30mm	(7) 48mm	(8) 52mm	(9) 80mm	(10) 125mm

TOPIC: MEASURES

Sub topic: Finding perimeter of polygons

Competences:

Subject

The learners;

- Describe the meaning of the words perimeter and distance round
- Sum up the distance.

Language.

The learner;

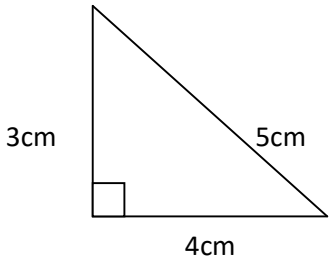
- Spells, writes and reads words such as perimeter and distance round.

CONTENT

Finding perimeter of polygons.

Example

1. Find the perimeter of the figure below.



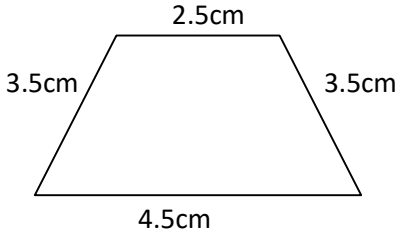
Perimeter = Add all sides round

= 3cm + 4cm + 5cm

= 7cm +5cm

Perimeter = 12cm

2.



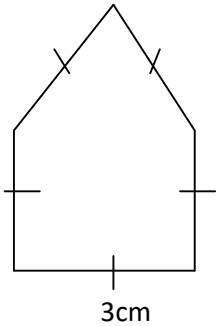
Perimeter = Add all sides round

= 4.5cm + 3.5cm + 3.5cm + 2.5cm

= 14.0

Perimeter = 14cm

3.



Perimeter = Add all sides

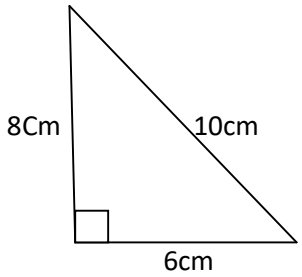
= 3cm + 3cm + 3cm + 3cm + 3cm

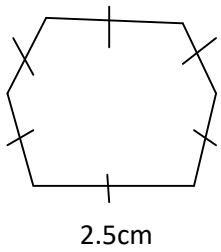
= 6cm + 6cm + 3cm

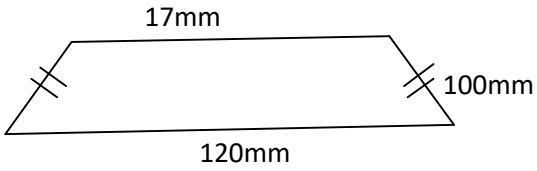
= 12cm + 3cm

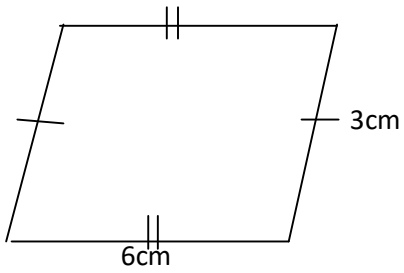
Perimeter = 15 cm

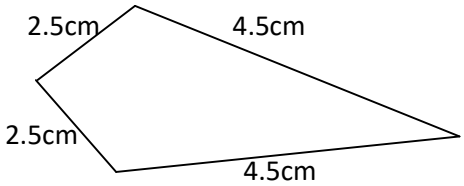
ACTIVITY

1. 

2. 

3. 

4. 

5. 

TOPIC: MEASURES

Sub topic:word application about perimeter

Competences:

Subject

The learner;

- Interprets the question given.
- Carefully adds

CONTENT
Application about perimeter

Example

1. A rectangular garden is 12.5m long and 9m wide. Find its perimeter.
   Perimeter = Add all side round
   = 12.5m + 9m + 12.5m + 9m
   Perimeter = 43m

2. A triangular playground its 3 sides measuring 14m, 16m and 24.5cm. Calculate its perimeter.
   Perimeter = Add all sides round
   = 14m + 16m + 24.5m
   Perimeter = 54.5m

3. A football field measures 80.4m long 40.5m wide. What is the distance round the field?
   Perimeter = Add all sides round
   = 80.4m + 40.5m + 80.4m + 40.5m
   Perimeter = 241.8m

ACTIVITY

1. The length of the top a geometry set is 18cm and its width is 9.2cm. Find its perimeter.
2. Find the perimeter of a triangular card with equal sides each measuring 80mm.
3. The length of our class room door is 250cm and its width is 85cm. Find its perimeter.
4. Find the perimeter of regular pentagon with each side measuring 13.5cm.
5. A square room measures 9m long.Find its perimeter.
6. Find the perimeter of a regular octagon with side 12cm
7. The length of a rectangular building is 24m and its width is 7.5m. Calculate its perimeter.

TOPIC: MEASURES

Sub topic:comparison of radius and diameter

Competences:

Subject

The learner;

- State the parts of acircle
- Finds the radius and diameter of a circle.
- Divides where necessary.
- Multiplies where necessary.

CONTENT

Examples

1. Find the radius of a circle whose diameter is 32cm

   Radius = $\frac{D}{2}$

   = $\frac{32}{2}$

   Radius = 16cm

2. Find the diameterof acircle whose radius is 19cm

   Diameter = 2r

   = 2 × r

   = 2 × 19cm

   = 19

   × 2

   38cm

   :. Diameter = 38cm.

ACTIVITY

1. Find the radius of a circle whose diameter is

   (i) 10cm (ii) 20cm (iii) 16cm (iv) 14cm (v) 30cm

2. Find the diameter of a circle whose radius is

   (i) $3\frac{1}{2}$ cm (ii) 8cm (iii) 11cm (iv) 21cm (v) pcm

TOPIC: MEASURES

Sub topic:finding circumference using diameters and radius.

Competences:

Subject

The learner;

- States the formula for finding circumference.
- Use the appropriate pie to be used.

CONTENT

- Finding circumference using diameter and radius.

Examples

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

   Diameter = 10cm

   Circumference $= \pi$d

   = 3.14 × 10cm

   = $(\frac{314}{100} \times 10)$

   = $(\frac{3.14}{10})$ cm

   = 31.4 cm

   :. Circumference = 31.4cm

2. Find the circumference of a circle whose radius is 7cm. (use $\pi = \frac{22}{7}$)

   Circumference = 2π

   = $2 \times \frac{22}{7} \times 7$cm

   = 22 × 2 × cm

: . Circumference = 44cm

ACTIVITY

1. Find the circumference of a circle whose diameter is 5cm (use π = 3.14)
2. A circle plate has a diameter of 14cm. calculate its circumference (use $\pi = \frac{22}{7}$)
3. A circular bottom of a mug has a radius of 50mm. Find the circumference. (use π = 3.14)
4. Find the circumference of a circle whose radius is 7cm (use $\pi = \frac{22}{7}$)
5. Calculate the circumference of a circle whose diameter is 20mm. (use π = 3.14)
6. The radius of a circular basin is 21cm. Calculate its circumference. (use $\pi = \frac{22}{7}$)

TOPIC: MEASURES

Sub topic:finding area of a square.

Competences:

Subject

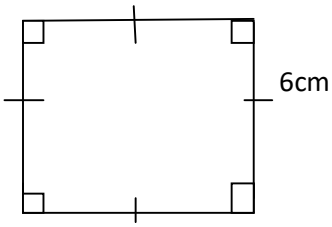
The learner;

- Identifies the question given
- State the formula for finding area.
- Multiplies effectively.

CONTENT

Example

1. Find the area of a square whose side is 6cm.

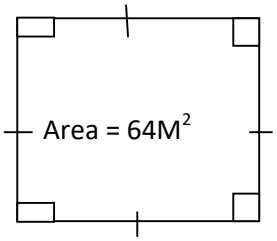


Area = side × side

= 6cm ×6cm

Area = $36cm^2$

2. The area of a square garden in $64M^2$. Calculate its side.



Side × side = area

S^2 = Area

S^2 = Area = $64m^2$

$8^2 = 2 \times 2 \times 2 \times m$

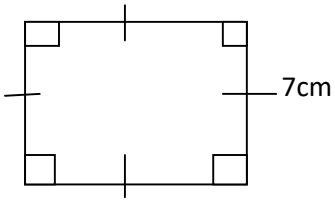
Side = 2 x 2 x 2 x m

Side = 8m

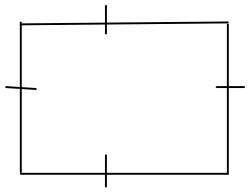
ACTIVITY

1. Find the area of the following figure

(a)



(b)



(c) The side of a square is 9cm. Find the area of the square.

2. Find the length of each side of the squares whose area is $25cm^2$
3. The area of a square is $121cm^2$. Find the length of each side of the square.

TOPIC: MEASURES

Sub topic:finding area of a rectangle

Competences:

Subject

The learner;

- Interprets the question given.
- States the formula of finding area.

CONTENT

Finding area of a rectangle

Examples.

1. A rectangle is 10cm long and 5cm wide. Find the area of the rectangle.

   Area = L × w

   = 10cm × 5cm

   :. Area = $50cm^2$
2. The area of a rectangle is $56cm^2$. The length is 8cm. Find the width of the rectangle.

   L ×W

   8cm × w =$56cm^2$

$$\frac{8cmw}{8cm}$$

ACTIVITY

1. (a) Find the area of a rectangle whose length is 40cm and width 30cm.
   (b) A rectangle measures 25m by 20m. Find its area.
   (c) The length of a rectangular field is 120m by 80m. Find the area of the field.

2. (a) The area of a rectangle is 80cm^2. Find the length if the width is 5cm.
   (b) The area of a rectangle is 42cm^2. The length is 7cm. Find the width.
   (c) Calculate the length of a rectangle whose area is 63cm^2 and width 7cm.

TOPIC: MEASURES

Sub topic:finding sides, Area and perimeter

Competences.

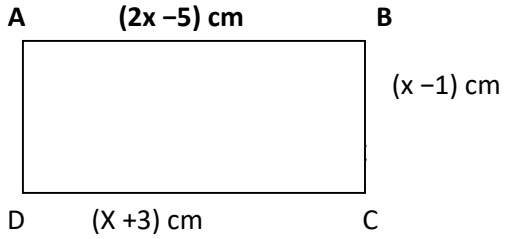
The learner;

Identifies the opposite sides.
Find the unknown.
Finds the area and perimeter of the rectangle.

CONTENT

Finding sides, Area and perimeter.

1. **ABCD is a rectangle.**



(i) Find the value of x

(2x –5) cm = (x + 3) cm

(2x –5) $\frac{cm}{cm}$ = (x + 3) $\frac{cm}{cm}$

$2x - 5 = x + 3$

$2x - 5 + 5 = x + 3 + 5$

$2X + 0 = X + 8$

$2X = X + 8$

$2X - X = X - X + 8$

$X = 8$

(ii) Find the width and length

Width = $(x - 1)$ cm

$= (8 - 1)$ cm

$= 7$cm

Length = $(x + 3)$ cm

$= (8 + 3)$ cm

Length = 11cm.

(iii) Find area

Area = $L \times W$

$= 11\text{cm} \times 7\text{cm}$

Area = 77cm^2

(iv) Calculate its perimeter

Perimeter = $L + L + W + W$

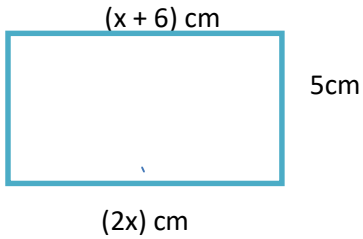
$= 11\text{cm} + 11\text{cm} + 7\text{cm} + 7\text{cm}$

$= 22\text{cm} + 14\text{cm}$

Perimeter = 36cm.

ACTIVITY

1. Workout the following



(a) Find the value of x

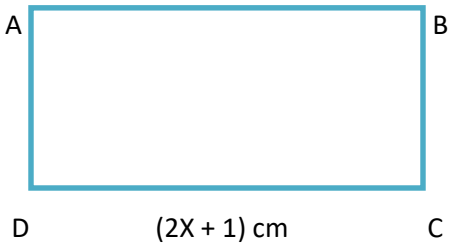
(b) Find the length and width

(c) Calculate its

(i) Area

(ii) Perimeter

2. (x + 9) cm



(i) Find the value of x
(ii) Find the length and the width of the rectangle.
(iii) Find the perimeter of the rectangle.
(iv) Find the area of the rectangle.

TOPIC: MEASURES

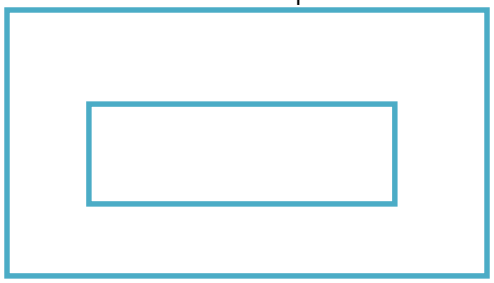
Sub topic:finding area of a rectangle

Competences:

Subject
The learner'
Identifies the shaded part.
Subtracts the area of the inner from the area of the outer rectangle.

CONTENT
Finding area of the shaded parts of rectangles

Examples.
1. Find the area of the shaded part



Area of outer rectangle

A = L ×W

A = 10cm × 9cm

= 90cm^2

:. Area = 90cm^2

Area of the inner rectangle

Area = L × W

= 6cm × 4cm

Area = 24cm^2

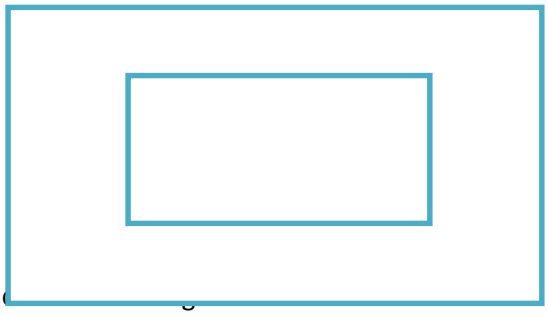
Area of shaded part = area of outer − area of inner

= 90cm^2

−24cm^2

Area = 66cm^2

2. find the area of the shaded part



Length

= (8 + 2 + 2) cm

= 12cm

Width of outer rectangle

= (5 + 2 + 2) cm

= 9cm

Area of outer rectangle

= L × W

= 12cm ×9cm

= 108cm^2

Area of inner rectangle

= L × W

= 8cm × 5cm

= 40cm^2

Area of shaded region = area of outer − area of inner

= 108cm^2

−40cm^2

:. Area of shaded region = 68cm^2

ACTIVITY

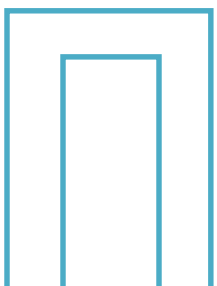
Find the area of the shaded parts.

1. \



8cm

2.



22

12cm

7cm

3. 

4. 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 un covered part.

TOPIC: MEASURES

Sub topic:finding area of a rectangle

Competence

Subject

The learner;

Determines the formula for finding area

Find the area of the triangle.

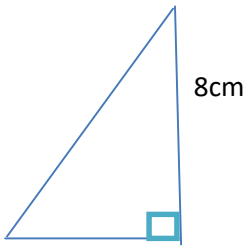
CONTENT

Finding the area of the triangles

Examples.

Find the area of the following.

1.

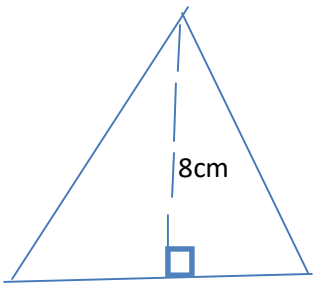


Area = $\frac{1}{2} \times b \times h$

$= \frac{1}{2} \times 6cm \times 8cm$

$= 3cm \times 8cm$

Area = $24cm^2$



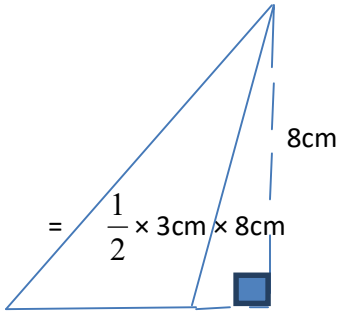
area = $\frac{1}{2} \times b \times h$

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

$= 4cm \times 8cm$

Area = $32cm^2$

2.



area = $\frac{1}{2} \times b \times h$

$= \frac{1}{2} \times 3cm \times 8cm$

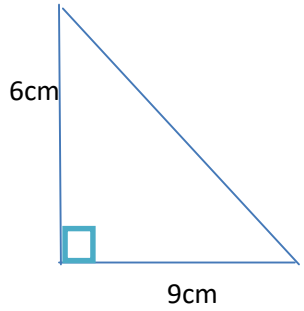
= 3cm × 4cm

3cm 2cm Area = $12cm^2$

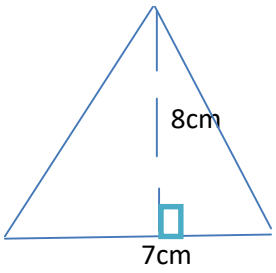
ACTIVITY

Find the area of the triangle

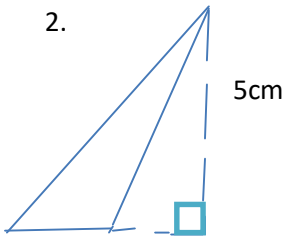
1.



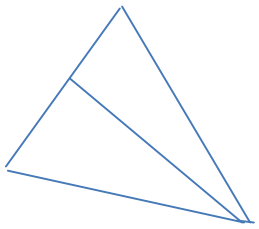
2.



2.



4.



TOPIC: MEASURES

Sub topic:finding one side of a triangle when area is given

Competence

Subject

The learner;

- States the formula.
- Interprets the question given.

CONTENT

Finding one side of a triangle when area is given.

Example

1. Find the base of a triangle whose area is $60cm^2$ and its height is 12cm

   $\frac{1}{2} \times b \times h = area$

   $\frac{1}{2} \times b \times 12cm = 60cm^2$

   $b \times 6cm = 60cm \times cm$

   $\frac{b \times 6cm}{6cm} = \frac{60cm \times cm}{6cm}$

   $B = 10cm.$

   :. Base = 10cm

2. Find the height of a triangle whose area is $30cm^2$ and its base is 12cm.

   $\frac{1}{2} bh$

   $\frac{1}{2} \times b \times h = area$

   $\frac{1}{2} \times 12cm \times h = 30cm^2$

   $6cm \times h = 30cm^2$

   $\frac{6cm \times h}{6cm} = \frac{30cm \times cm}{6cm}$

   Height = 5cm

   ACTIVITY

   1. Find the base of a triangle whose area is $20cm^2$ and height 8cm.
   2. Find the base of a triangle whose area is $28cm^2$ and height 14cm.
   3. The height of a triangle is 9cm and its area is $36cm^2$. Find the base.
   4. The area of a triangle is $40cm^2$. Find the height if the base 10cm.
   5. Find the height of a triangle whose base is 11cm and area $220cm^2$.

TOPIC: MEASURES

Sub topic:finding base or height by comparing area

Competence

Subject

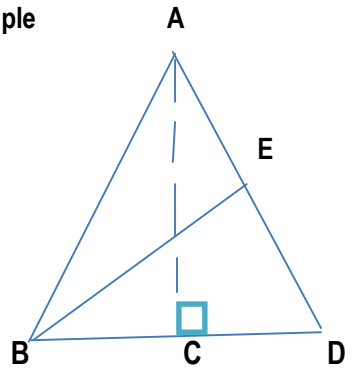
The learner;

- Interprets the question given.
- States the formula for finding area.
- Compares the areas.

CONTENT

Finding base or height by comparing area

Example



ABD is a triangle. **AC** and **BE** are heights of the same triangle. **BD** = 12cm, **AC** = 10cm, **BE** = 8cm. find the length of **AD**

Base = **BD** 12cm

Height = **AC**10cm

Area of the triangle = $\frac{1}{2} \times b \times h$

$= \frac{1}{2} \times 12cm \times 10cm$

$= 12cm \times 5cm$

$= 60cm^2$

12

2nd triangle

Base AD

Height = 8cm

Area = $60cm^2$

$\frac{1}{2}$ ×b× h = area

$\frac{1}{2}$ × AD × 8cm =60cm^2

AD × 4Cm = 60cm × cm

4cm 4cm

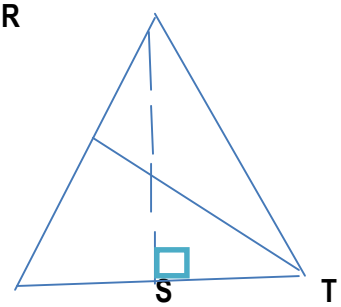
AD = 15CM

ACTIVITY

Find the value of the unknown in the figures below.

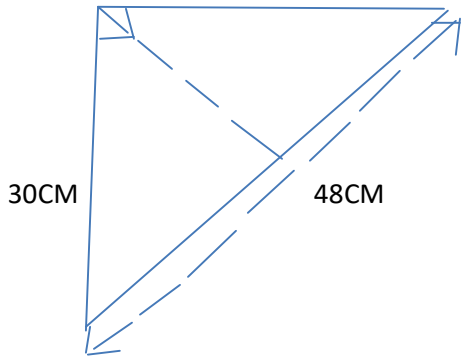
1. **R**

A



Q **S** **T**

2.



TOPIC: MEASURES

Sub topic:finding total surface area

Competence

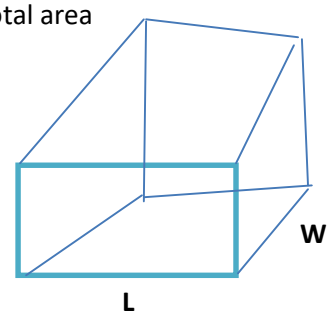
Subject

- Derives the formula for finding T. S. A
- Multiplies effectively.

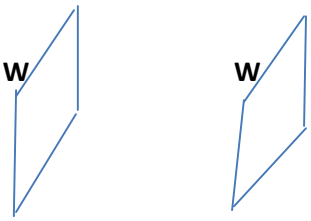
CONTENT

Finding total area

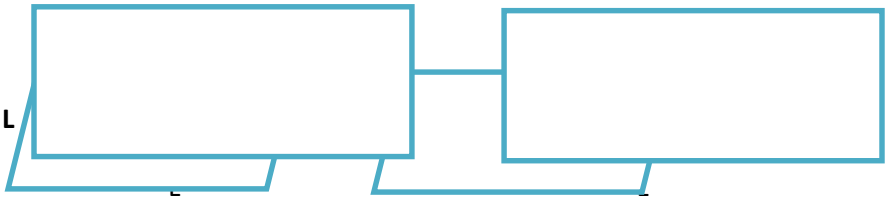
H



LL



2 (W×h)

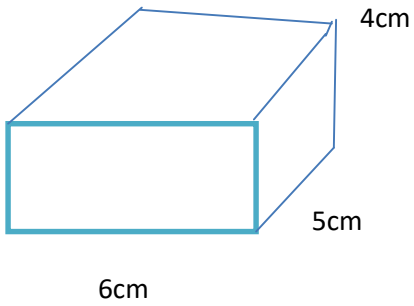


L **L** **2 (L X L)**

:. Total surface area = 2 (L +W) + (L X h) + 2 (W x h)

Example

Find the total surface area



T.S.A = 2 (Lw + Lh + hw)

= 2 (L x w + L x h + h x w)

= 2 (6cm x 5cm + 6cm x 4cm + 4cm x 5cm)

= 2 (30cm2 + 24cm^2 + 20cm^2

= 2 (74cm^2)

= 74cm^2

X 2

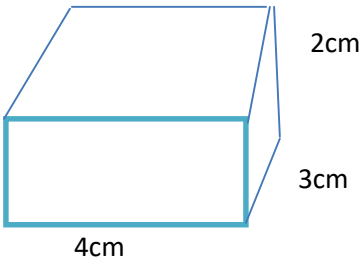
148cm^2

:. T. S. A = 148cm^2

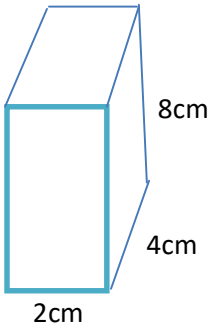
ACTIVITY

Find the total surface area of the following

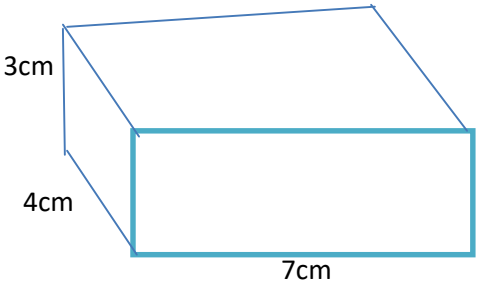
1.



2.



3.



TOPIC: MEASURES

Sub topic:finding total surface area

Competence

Subject

The learner;

- Derives the formula for finding T. S. A
- Opens the cube to form a net
- Multiplies effectively

CONTENT

Finding the total surface area of a cube.

Example

1. Find the total surface area of a cube whose side is 5cm

Total surface area = $6S^2 25$

= 6 x s x s x 6

= 6 x 5cm x 5cm 150

= 6 x $25cm^2$

T. S. A = $150cm^2$

2. Find the total surface area of a cube whose side is 7cm.

T. S. A = $6S^2$ 49

= 6 x S x S x 6

= 6 x 7cm x 7cm 294

= 6 x $49cm^2$

T. S. A = $294cm^2$

ACTIVITY

Fin d the total surface area of a cube whose side is,

1. 6CM
2. 8cm
3. 10cm
4. 11cm
5. 14cm

TOPIC: MEASURES

Sub topic:finding total surface area

Competence

Subject

The learner;

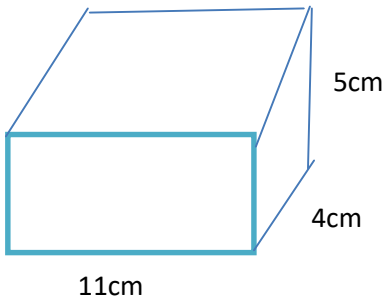
- States the formula for finding volume.
- Multiplies the sides to get volume.

CONTENT

Find the volume of the cuboid

Example

1. Find the volume of the cuboid below



Volume = base area x height

= (L x w) x h

= (11cm x 4cm) x 5cm

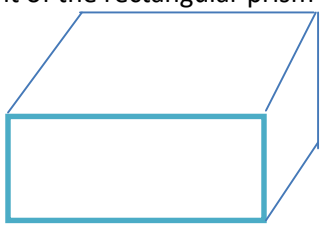
= $44cm^2$ x 5cm

Volume = $220cm^2$

44
x 5
220

2. Find the height of the rectangular prism below whose volume is $180cm^3$

h



4cm

9cm

L x w x h = volume

9cm x 4cm x h = $180cm^3$

$\frac{9cm \times 4cm \times h}{9cm \times 9cm} = \frac{180cm \times cm \times cm}{9cm \times cm}$

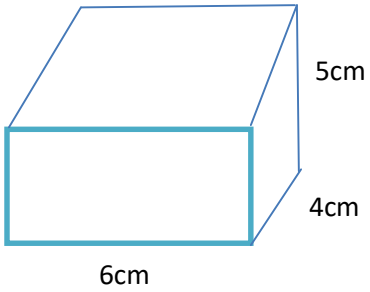
h= 5cm

:. Height = 5cm

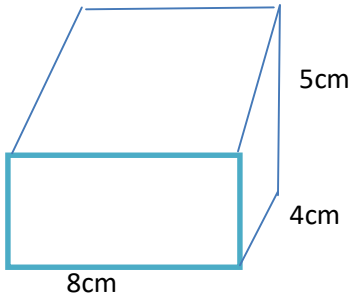
ACTIVITY

A. Find the volume of the following prisms.

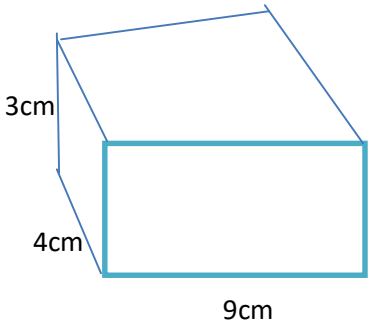
1.



2.

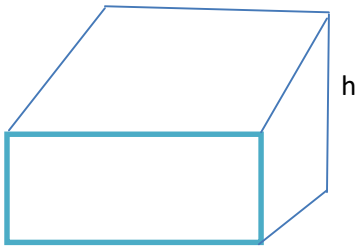


3.



B. Find the one of the sides of a rectangular prism marked by the letters.

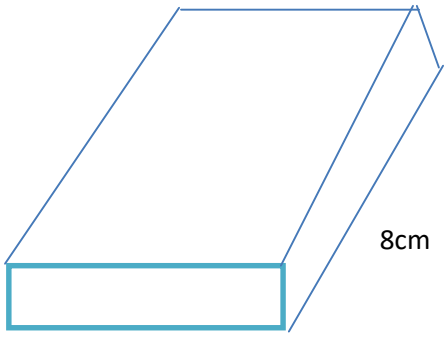
4.



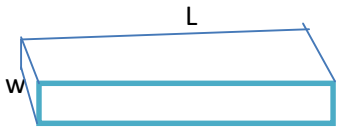
6cm

5cm

Find the height of the prism if the volume is $120cm^3$

4. 

The volume of the box $168cm^3$. Find the length.

5. 

Find the width of the rectangular prism, below whose volume is $420cm^3$

TOPIC: MEASURES

Sub topic:finding capacity of tanks. (Rectangular tanks)

Competence

Subject

The learner;

- State the formula for finding volume.
- Identifies the number of cubic centimetres in a litre.
- Divide the volume by the cubic centimetres to get the litres

CONTENT

Finding capacity of tanks.

Example

1. A rectangular tank is 30cm by 60cm by 90cm. find its volume in litres

   Capacity = $\frac{\text{volume}}{1000cm^3}$

   = $\frac{Lx\ w\ x\ h}{1000cm^3}$

= 30cm x 60cm x 90cm

1000cm x cm x cm

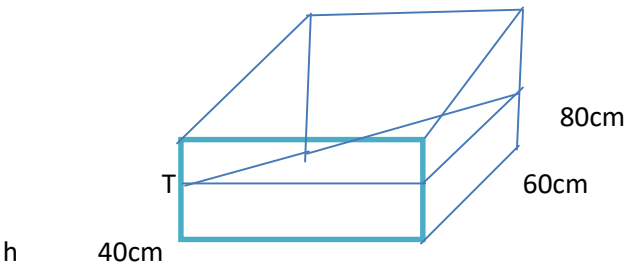
= (3 x 6) x 9

18

X 9

162

:. Volume = 162 litre



the tank given is holding 72litres of water

(i) Calculate the value of h

1 litre = $1000cm^3$

Volume of water in the tank is cm^3 = (72 x 1000)

40cm x 60cm x h = 72 x $1000cm^3$

$\frac{40cm \times 60cm \times h}{40cm \times 60cm} = \frac{72cm \times 1000cm \times cm \times cm}{40cm \times 60cm}$

H = 30cm

(ii) How many litres are needed to fill the tank?

Height of water needed to fill the tank = 80cm – 30cm

= 50cm

Volume = base area x height

= 40cm x 60cm x 50cm

= $2400cm^2$ x 50cm

$1000cm^3$

= $\frac{2400cm \times cm \times 50cm}{1000cm \times cm \times cm}$

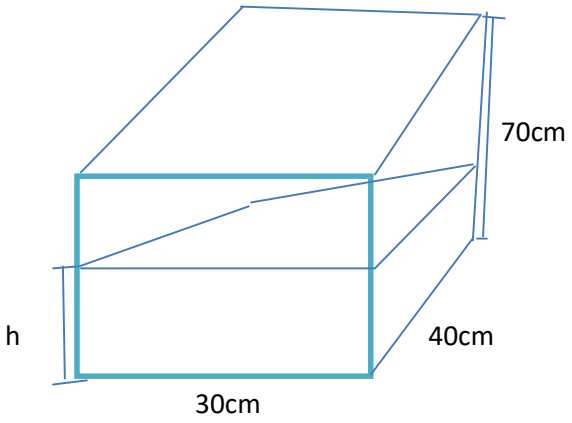
= (24 x 5) litres

= 120litres

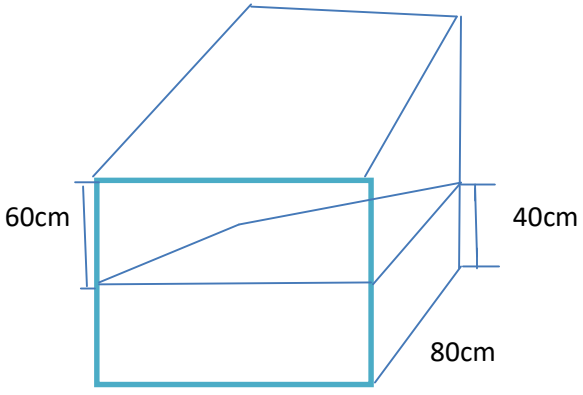
ACTIVITY

1. (a) Calculate the volume in litres of a rectangular tank 80cm by 70cm by 120cm.
   (b) How many litres are in a rectangular tank measuring 80cm by 100cm by 2m?
   (c) Find the number of litres that can be obtained from a rectangular tank of 60cm by 90cm by 110cm.

2. The tank is 72 litres full of water.
   (i) Calculate the value of h.
   (ii) How many litres are needed to fill the tank?



3. There are 96 litres of water in the tank.
   (i) Calculate the width of the tank.
   (ii) Calculate the number of litres that fill the tank.



TOPIC: MEASURES

Sub topic:changing litres to millitres

Competence

Subject

The learner;

- Interprets the question given.
- States the number of millitres in litres.
- Multiplies effectively

CONTENT

Changing litres to millitres.

Examples.

1. Change 7 litres to millitres.
   1 litres = 1000millitres
   7 litres = 7 ×1000) millitres
   = 7000millitres.

2. Change 3500 millitres to litres.
   1000ml = 1 litre
   1 ml = $(\frac{1}{1000})$ litre
   3500millitres = = $(\frac{1}{1000} \times 3500)$ litres
   $(\frac{35}{10})$ litre
   = 3.5litres

ACTIVITY

1. Express the following millitres as litres.
   (a) 2000ml (b) 12000ml (c) 8500ml (d) 13,700ml

2. Change litres to millitres.
   (a) 3litres (b) 4 $\frac{1}{2}$ (c) 2 $\frac{1}{4}$ litres (d) 7 litres 300mill

TOPIC: MEASURES

Sub topic:changing kg t0 g and vice versa

Competence

Subject

The learner;

- Identifies the question given
- Multiplies

CONTENT

Changing kilogram to grammes.

Examples

1. Express 2kg to g

   1kg = 1000g

   2kg = (2 x 1000) g

   2kg = 2000g

2. Express 5000g as kg.

   1000g = 1kg.

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

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

   = 5kg

ACTIVITY

1. EXPRESS THE following kilograms to grams

   (a) 4kg (b) $\frac{1}{2}$ kg (c) 9kg (d) $6\frac{1}{2}$ kg (e) $\frac{1}{4}$ kg

2. Express the following grams as kilograms.

   (a) 2000g (b) 1500g (c) 250g (d) 750g (e) 200g.

TOPIC: MEASURES

Sub topic:addition and subtraction of different measure

Competence

Subject

The learner;

- Interpretes the question given
- Convert big units to small ones
- Adds or subtracts

CONTENT

Addition of different measures

Examples

1. **Add:** 4km + 800m

   1km = 1000m

   4km = (4 x 1000) m

   = 4000m

   4000m

   + 800m

   48000m

2. 15L + 600ml

   1L = 1000ml

   15L = (15 X 1000) ML

   :. 15L = 15000ML

Subtraction

3. Subtract: 9litres −350ml

   1 litres = 1000ml

   9litres = (9 x 1000) ml

   9litres = 9000ml

   9000ml

−350ml

8650ml

4. Subtract: 8kg = 1000g

   1kg = 1000g

   8kg = -*93.6

   (8 x 1000) g

   = 8000g

   8000g – 820g.

   8000g

− 820g

7180g

ACTIVITY

1. Add the following:
   (a) 5km + 700m (b) 6km + 200m (c) 31 + 140ml (d) 9kg + 500g

2. Subtract the following
   (a) 4kg – 300g (b) 6kg – 150g (c) 8kg – 170g (d) 151 – 990

TOPIC: MEASURES

Sub topic: multiplication of different units

Competence

Subject

The learner;

- Identifies the question given
- Multiplies effectively.

CONTENT

Multiplication of different units

1. Multiply: 18km by?
   (18 x 7) km
   126km
2. Multiply: 213g by 4213
   (213 x 4) g× 4
   852g 852

Division

Divide 36kg by 4

(36 ÷ 4) kg

$(\frac{36}{4})$ kg

9kg

ACTIVITY

1. Multiply:
   (a) 12m by 9
   (b) 321 ml by 7
   (c) 491 by 9
   (d) 431 by 4
2. Divide
   (a) 54kg ÷ 6
   (b) 60kg ÷ 10
   (c) Divide 8kg of beans among 4 people. How many kg does each get.
   (d) Share 21 litres of milk among 3 children. How much milk will each child get?

TOPIC: GEOMETRY

Sub topic:naming various polygon.

Competence

Subject

The learner;

- State different polygons.
- Defines the term polygon
- Spells the appropriate names for polygons

Language;

The learner;

- Reads, pronounces and writes the different polygons.

CONTENT

Naming various polygons

- There are different polygons and such polygons include:
- Square, Rectangle, Hexagon, Pentagon, Triangles

Construct a square, rectangle and a hexagon (resis)

1. Construct a square of side 4cm

2. Construct a rectangle **ABCD** where **AB** = **CD** = 7cm, **AD** = **BC** = 4cm

3. Construct a regular hexagon of radius 3cm.

4. Construct an equilateral triangle of side 5cm.

ACTIVITY

Using a pair of complete, ruler and a sharp pencil only construct the following.

1. A square of side 5cm
2. Rectangle of length 8cm and width 4cm
3. Hexagon of radius 4cm.
4. An equilateral triangle of side 6cm

TOPIC: GEOMETRY

Sub topic:constructing a regular pentagon..

Competence

Subject

The learner;
Interpretes the question given.

- Divides 360^0 by 5 in order to get the centre angle
- Constructs the pentagon.

CONTENT

Construct a regular pentagon

NB. The centre angle of a pentagon = $\frac{300}{5}$ = 72^0

Example

1. Construct a regular pentagon in a circle of radius 1.5cm

2. Construct a pentagon of side 3cm.

3. Construct a regular pentagon of side 3cm.

ACTIVITY

1. Construct regular pentagons in circles whose radii are
   (a) 3cm (b) 3.5cm

2. Using the second method construct a regular pentagon of side:
   (a) 4cm (b) 5cm (c) 6cm.

TOPIC: GEOMETRY

Sub topic: Construction of a regular octagon.

CONTENT

Constructing a regular octagon

Example

1. Construct a regular octagon in a circle of radius 1.5cm.

2. Construct a regular octagon in a circle of radius 4.5cm

ACTIVITY
Construct regular octagon in circles whose radii are
(a) 4cm (b) 3cm (c) 2cm (d) 2.7cm

TOPIC: GEOMETRY

Sub topic:constructing parallel lines...

Competence

Subject

The learner;
Sharpens the pencil well
Draw carefully without repeating.

CONTENT
Constructing parallel lines,
Example
Construct lines CD ll to line AB

ACTIVITY
Using a pair of compass and a ruler only, construct parallel lines.
1. 2cm apart
2. 2.5cm a part

3. 4cm apart
4. 3.5cm a part
5. 3cm apart

TOPIC: GEOMETRY

Sub topic: Angle properties of parallel lines.

Competence

Subject

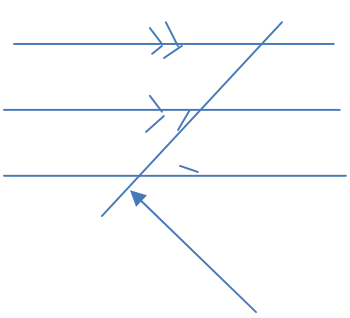
The learner;
States the meaning of co-interior and co – exterior angles.
Works out numbers about co – interior and co- exterior.

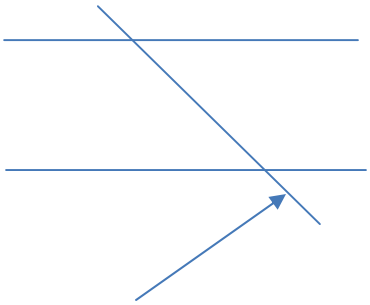
CONTENT

Angle properties are parallel lines.

NB. Parallel lines are lines which do not meet. They do not meet because they have the same distance apart.

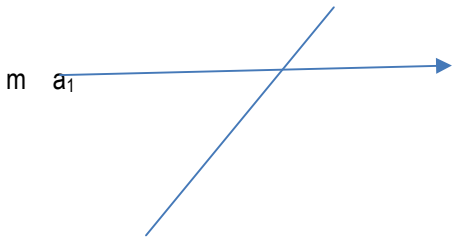
Aline which intersects a set of parallel lines is called a transversal line.





Transversal line

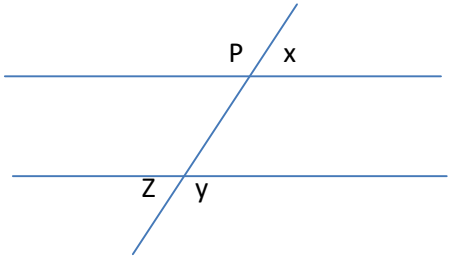
Co – interior and co – exterior angles.





$<a_1 + <b_1 = 180^0$ (co –interior $<^s$)

$< m + <n = 180^0$



$<X + <y = 180^0$ (co – exterior) angles

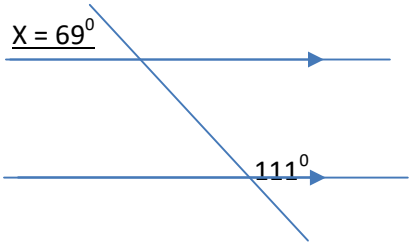
$<p + <q = 180^0$

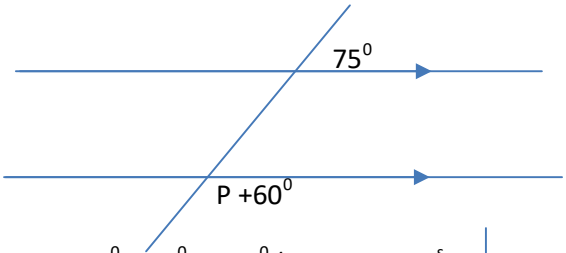
Examples

1. find the value of $xX + 111^0 = 180^0$

$X + 111^0 – 111^0 = 180^0 – 111^0$

$X + 0 = 69^0$





$P + 60^0 + 75^0 = 180^0$ (co-exterior $<^s$

$P + 135^0 = 180^0$

$P + 135^0 – 135^0 135$

$P + 0 = 45^0$

60

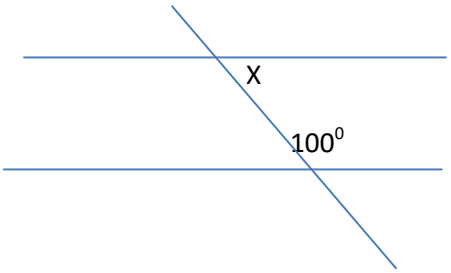
+75

P = 45^0

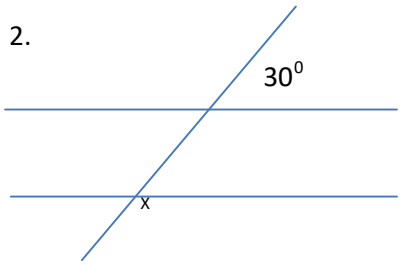
ACTIVITY

1.

30

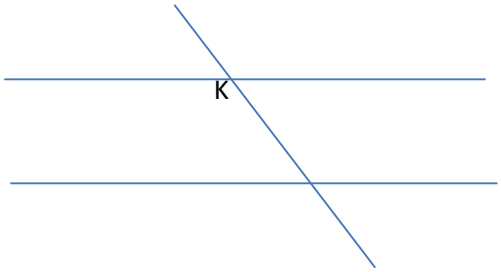


2.

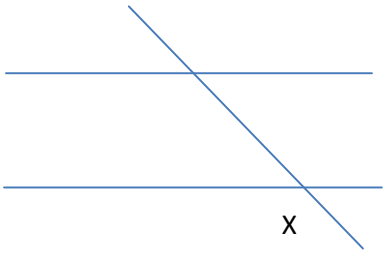


3 .

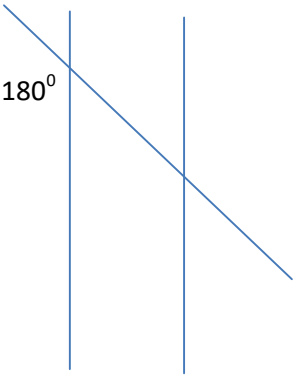
75^0



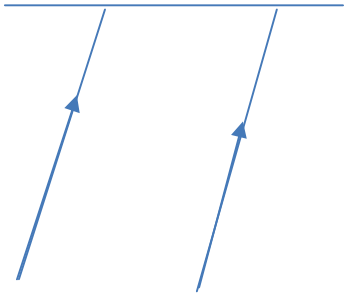
4.



6.



6.



TOPIC: GEOMETRY

Sub topic: Angle properties of parallel lines.

Competence

Subject

The learner;

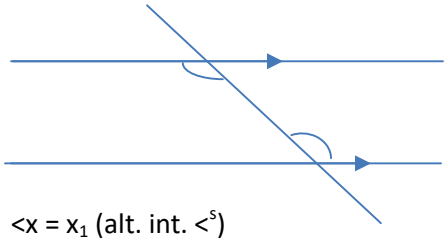
- State the angle property.
- Solve to get the unknown angle

CONTENT

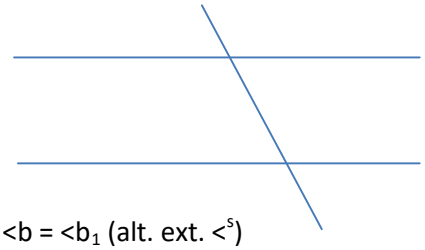
Alternate interior and exterior or angle

Alternate angle on parallel lines are equal while those on non-parallel lines are not.

x



$<x = x_1$ (alt. int. $<^s$)

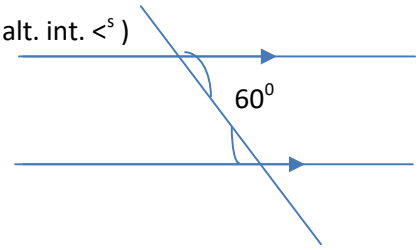


$<b = <b_1$ (alt. ext. $<^s$)

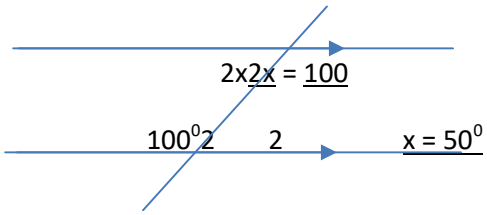
Example

1. Find the value of p

$<p = 60^0$ (alt. int. $<^s$)



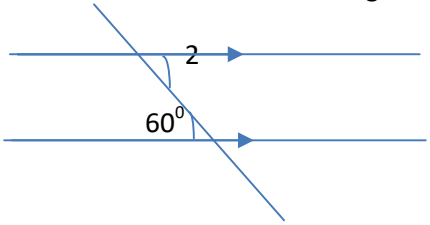
2.

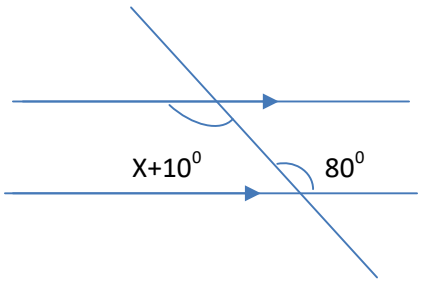


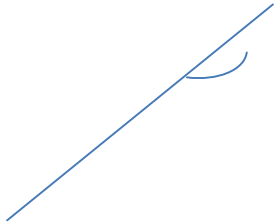
$2x = 100^0$ (alt. int .$<^s$)

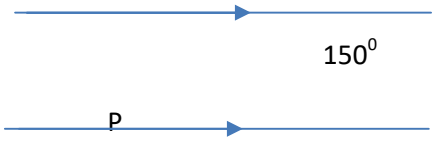
ACTIVITY

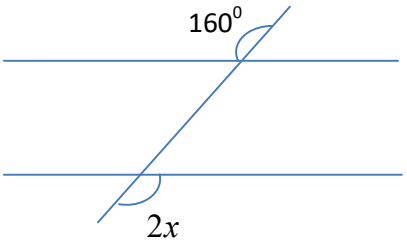
Find the size of the marked angles.

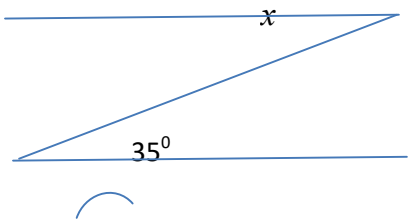


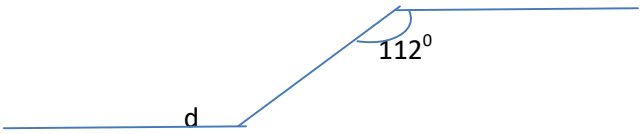












TOPIC: GEOMETRY

Sub topic: Recognizing angles formed by parallel lines

Competence

Subject

The learner;

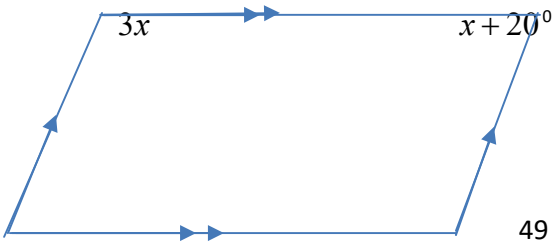
- Interprets the question given

CONTENT

Recognizing angles formed by parallel lines

Example

1. Find the value of x



$x + 120^0 + 120^0 = 180^0$ (co-int<s)

$X + 140^0 = 180^0$

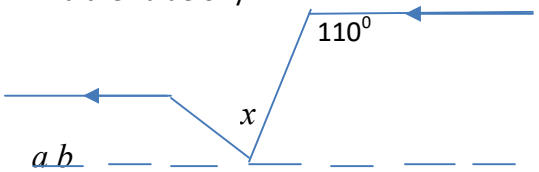
$x + 140^0 - 140^0 = 180^0 - 140^0$

$X + 0 = 40^0$

$X = 40^0$

60^0 120^0

2. Find the value of y

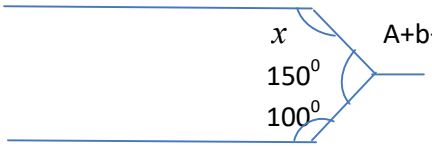


$b + 110^0 = 180^0$
$-100^0 \quad 110^0$
70^0

$A+100^0 = 180^0$ (co – in tan $<^s$)
$-100 \quad -100$
$A \quad = 80^0$

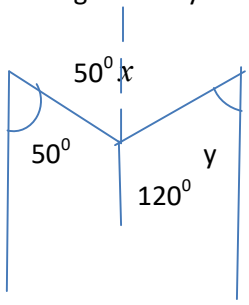
$A+x+b = 180^0$ (straight → → $<^s$)
$80^0+x+70^0= 180^0$
$X+80^0+70^0 = 180^0$
$X+150^0 = 180^0$
$-150^0 \quad 150^0$
$X \quad = 30^0$

3. Find angles a, b and x



$A= 100^0$ (alternate angles)
$X = b$ (alternate angels)
$A+b+150^0 = 360^0$ (center angles)
$100^0+x+150^0 = 360^0$
$x+100^0+150^0 = 360^0$
$X+250^0 = 360^0$
$X+250^0 = 360^0$
$-250^0 \quad -250^0$
$X \quad = 110^0$

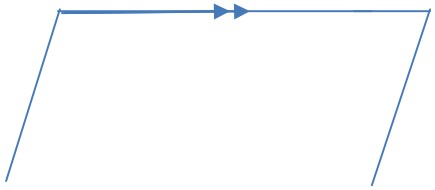
4. Find angle x and y



$x = 50^0$(alt. $<^s$)
$Y+120^0 = 180^0$(co- int. $<^s$)
$y+120^0-120^0 =180^0-120^0$
$y+0 = 60^0$
$Y = 60^0$
$X = y+50^0$
$X = 60^0+50^0$
$X = 110^0$

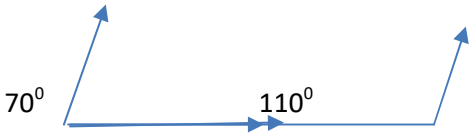
ACTIVITY

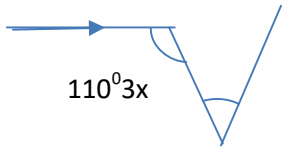
Find the values of the letters in the diagrams below.





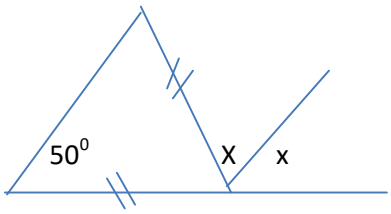
1. x **x-40^0** **2.** **130**



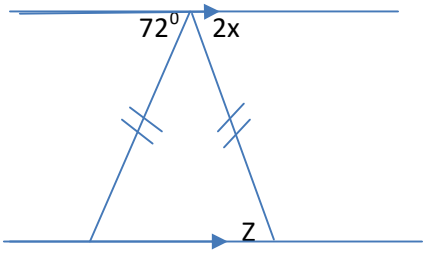


2.

y



4



TOPIC: GEOMETRY

Sub topic:constructing perpendicular bisectors

Competence

Subject

The learner;

- Draws the base line effectively
- Uses sharp pencil when constructing
- Constructs accurately.

CONTENT

Constructing perpendicular lines

1.

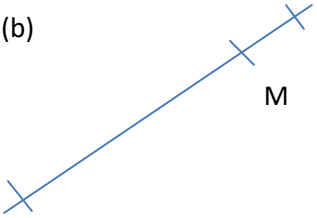
ACTIVITY

1. Construct a perpendicular line at the points marked m on each line

(a)



(b)



(C)



2. Copy and draw a perpendicular bisector for each line below

(a)



(b)



(c)



3. Construct a perpendicular by dropping 90^0 from a given point.

(a) **.**C(b) **.X**





.C



TOPIC: GEOMETRY

Sub topic:constructing angles such as 90^0, 60^0, 120^0

Competence

Subject

The learner;

- Sharpen the pencil well
- Puts the pencil in a compass.
- Construct the base line.

CONTENT

Constructing angles such as 90^0, 60^0 and 120^0

ACTIVITY

Construct the following angles

1. 90^0
2. 60^0
3. 120^0

TOPIC: GEOMETRY

Sub topic:constructing angles such as 90^0, 60^0, 120^0

Competence

Subject

The learner;

- Constructs the base line.

- Draws the area accurately.
- Bisects accurately

CONTENT

Bisecting angles e.g. 90^0, 60^0

90^0, 45^0, 135^0

ACTIVITY

Using a pair of compasses, ruler and a sharp pencil only construct the following angles.

1. 90^0
2. 60^0
3. 45^0
4. 30^0
5. 120^0
6. 150^0
7. 135^0

TOPIC: GEOMETRY

Sub topic:constructing of S.S.S ()

Competence

Subject

The learner;

- Sharpen the pencil
- Draws the sketch
- Constructs the base line.
- Measures the angles

CONTENT

Construction Triangle side, side, side (S.S.S)

Examples

1. Using a pair of compasses, ruler and a sharp pencil only construct a triangle XYZ where XY= 4cm, YZ = 3CM and XZ = 5cm

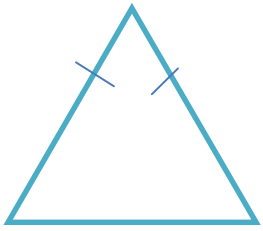
2. Construct a triangle ABC where $\overline{AB}$ = 6cm, $\overline{AC}$ = $\overline{BC}$ = 5cm.

3. Using a pair of compasses, ruler and a sharp pencil only construct a triangle ABC where AB=AC=DC = 4CM.

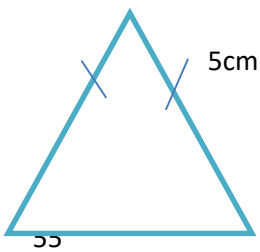
ACTIVITY

Using a pair of compasses ruler and a sharp pencil only construct the following tringles

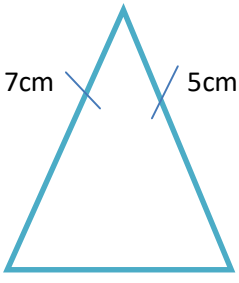
1.



2.



3.





TOPIC: GEOMETRY

Sub topic:constructing of S.A.S and S.A.A

Competence

Subject

The learner;

- Construct the base line.
- Draw the angles 90^0
- Construct the sketch

CONTENT

Construction of side, angle, side

Examples.

1. Construct a triangle RST such that RS =6cm, ST=4cm and angle S =90^0

2. Construct triangle XYZ whose angle X =60^0, and angle Y= 90^0 and XY= 5cm. measure the length of YZ and angle Z

ACTIVITY

1. (a) construct triangle ABC where AB=7cm, <A = 90^0 and <B =60^0
   (b) Measure $\overline{AC}$ and $\overline{BC}$

(c) Measure <C

2. Construct a triangle RST such that RS=6cm, RT=7cm angle R=60^0. Measure angle RST and $\overline{ST}$

TOPIC: GEOMETRY

Sub topic: Finding the longest side of aright angled triangle

Competence

Subject

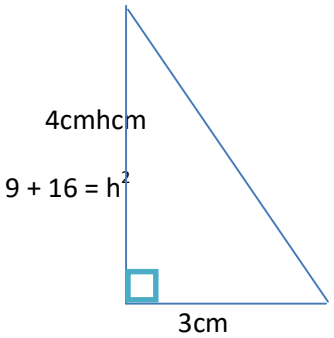
The learner;

- Derives the formula for Pythagoras.
- Find the unknown side

CONTENT

Finding the longest side of aright angled triangle

Example



$a^2 + b^2 = c^2$

$3^2 + 4^2 = h^2$

$(3 \times 3) + (4 \times 4) = h^2$

$9 + 16 = h^2$

$\sqrt{25} = \sqrt{h^2}$

$\sqrt{5 \times 5} = \sqrt{h^2 \times h^2}$

$5 = h$

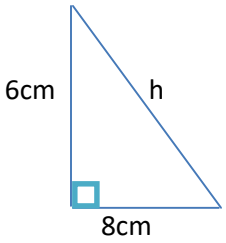
$h = 5$

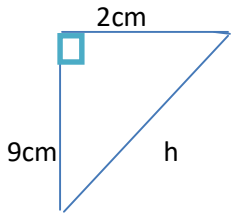
:. The longest side = 5cm

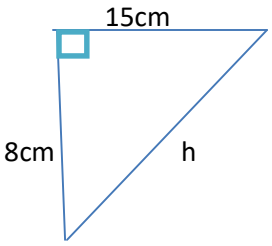
ACTIVITY

Find the longest side of each of the following right angled triangle.

1.







TOPIC: GEOMETRY

Sub topic: An Isosceles triangle and Pythagoras theorem.

Competence

Subject

The learner;

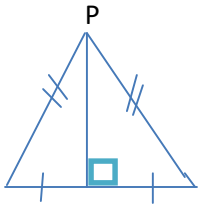
- Identifies the question given.
- Interprets the question
- Finds the unknown side.
- Finds area and perimeter.

CONTENT.

Isosceles triangle and Pythagoras theorem.

Example

Given that PS = PQ = 10cm, PR = 6cm and bisects <P.



Q R S

(i) Find the length of QS

PR = 6CM PS = 10cm

$(RS)^2 + (PR) = (ps)^2$

$(RS)^2 + 6^2 = 10^2$

$(RS)^2 + 6 \times 6 = 10 \times 10$

$(RS)^2 + 36 = 100$

$(RS)^2 + 36 - 36 = 100 - 36$

$(RS)^2 + 0 = 64$

$\sqrt{RS^2} \quad \sqrt{64}$

$RS \times R = 8 \times 8$

RS = 8

:. RS = 8CM

(ii) Calculate the perimeter of the figure.

Perimeter = Add all sides round

= 10cm + 10cm + 16 cm

= 36cm

(iii) Calculate the area of the figure.

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

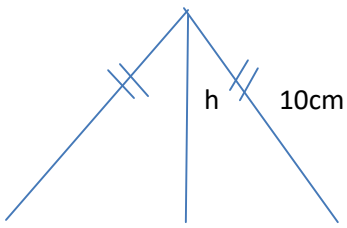
$= (\frac{1}{2} \times 16 \times 6)\ cm^2$

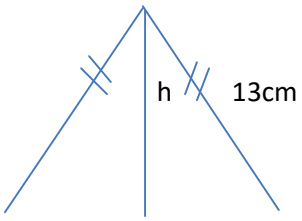
$= (8 \times 6)\ cm^2$

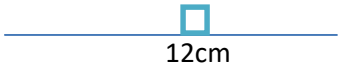
Area = $48cm^2$

ACTIVITY

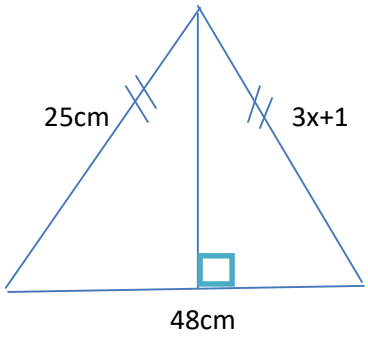
Calculate the height, the perimeter and the area of each of the figures below.











TOPIC: INTEGERS

Sub topic: Adding integers

Competence

Subject

The learner;

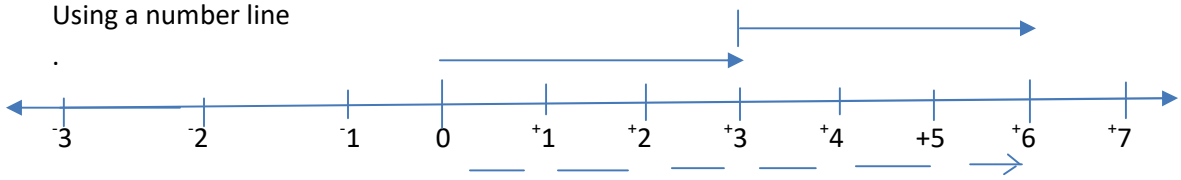
- Identifies the question given.
- Works our using a number line.

CONTENT

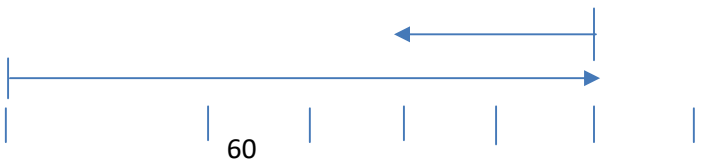
Adding integers

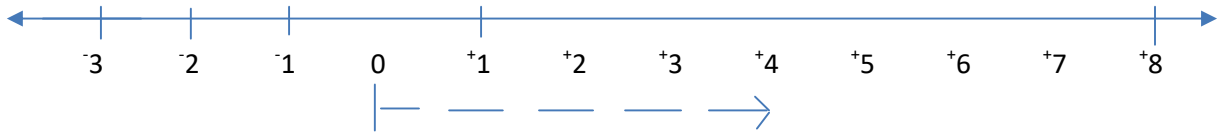
Examples

1. Simplify: $^{+}3 + {}^{+}3 = {}^{+}6$
   Using a number line
   .



2. $^{+}6 + {}^{-}2$



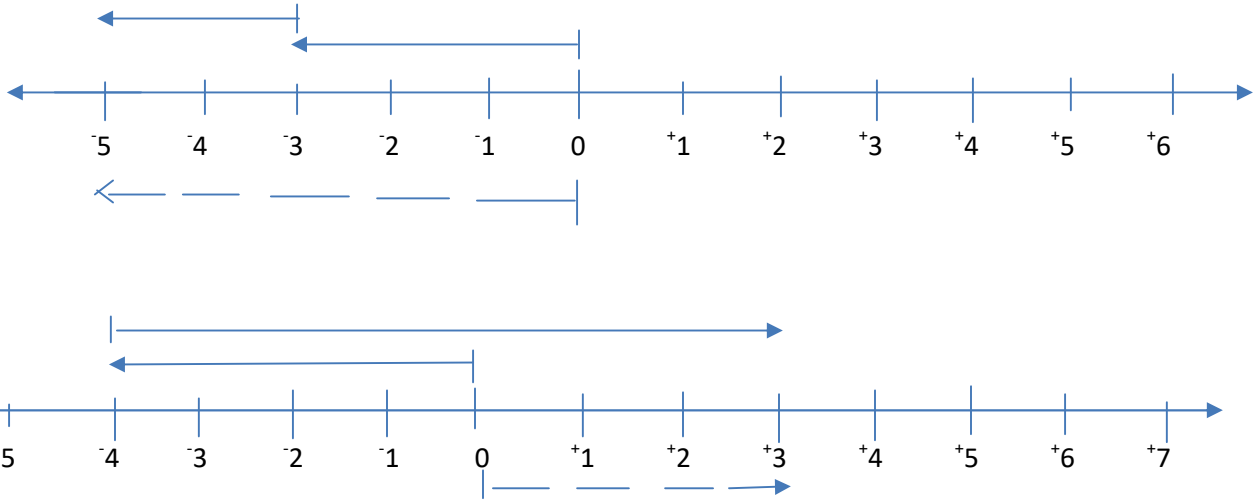


$^{+}6 + {}^{-}2 = {}^{+}4$

ACTIVITY

A. Workout the following using a numberline
   1. $^{+}4 + {}^{+}5$
   2. $^{-}4 + {}^{-}3$
   3. $^{-}4 + {}^{+}5$

B. Write the addition statements for each number line shown below.



TOPIC: INTEGERS

Sub topic: Subtraction of integers

Competence

Subject

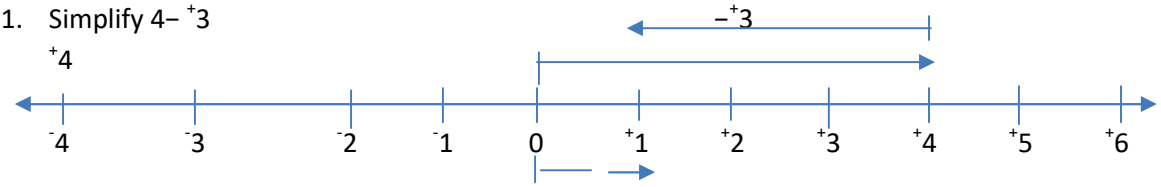
The learner;

Identifies the question given.

Uses the number line to subtract.

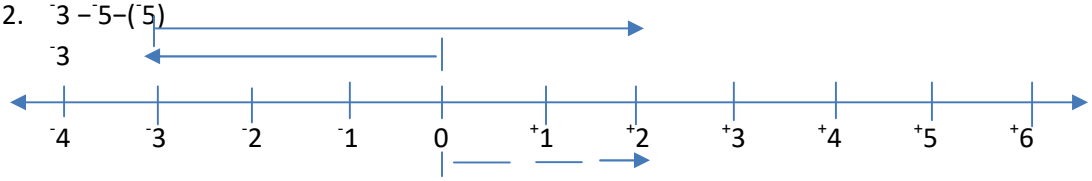
Subtraction of integers

1. Simplify $4 - {}^{+}3$



$\therefore {}^{+}4 - {}^{+}3 = {}^{+}$

2. $^{-}3 - {}^{-}5 - ({}^{-}5)$

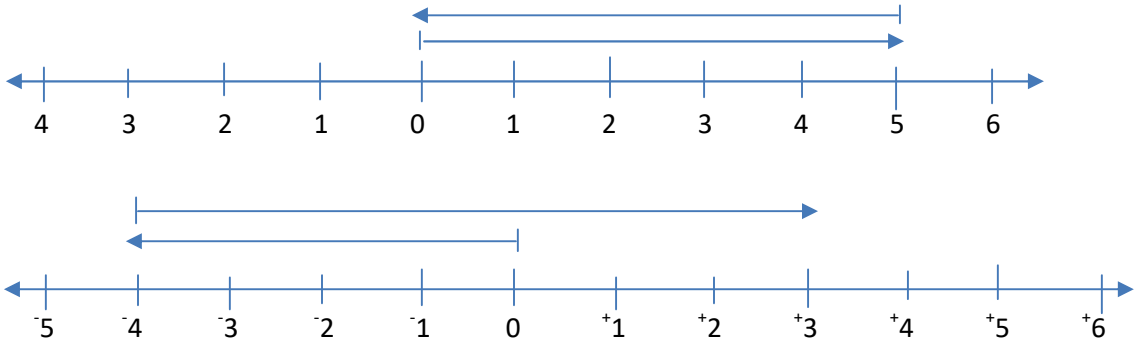


$\therefore {}^{-}3 - {}^{-}5 = {}^{+}2$

ACTIVITY

A. Subtract using a number line.
   1. $7 - {}^{-}2$
   2. $^{-}6 - {}^{-}2$
   3. $^{-}6 - {}^{-}4$
   4. $3 - {}^{-}8$

B. Write the subtraction sentence for each of the following number line
   5.



TOPIC: INTEGERS

Sub topic: Multiplication of integers.

Competence

Subject

The learner;

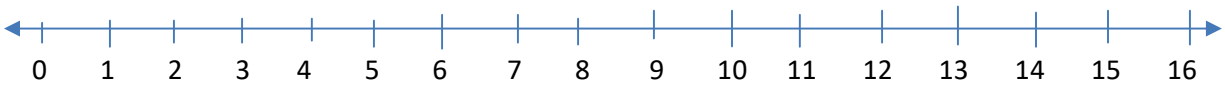
- Identifies the question given
- Draws the number line
- Draws the jumps

CONTENT

Multiplication

Examples

1. Multiply: $^{+}3 \times {}^{+}5$



:. $^{+}3 \times {}^{+}5 = {}^{+}15$

ACTIVITY

Multiply the following using a numberline

1. $^{+}5 \times {}^{+}2$
2. $^{+}8 \times {}^{+}4$
3. $^{+}9 \times {}^{+}6$
4. $^{+}5 \times {}^{+}7$
5. $^{+}12 \times {}^{+}7$
6. $^{+}3 \times {}^{+}5$
7. $^{+}4 \times {}^{+}3$

TOPIC: INTEGERS

Sub topic: Application of integers

Competence

Subject

The learner;

- Interprets the question given.
- Solves problems using integers

CONTENT
Application of integers

Examples

1. Kato borrowed sh. 500, but paid back sh. 300. How much money does kato have?
   Sh. 500 + sh. 300 = -sh. 200
   He has a debt of sh. 200

2. The temperature was 20^0F but dropped by 23^0F.
   $^{+}20F - 23^0F = {}^{-}3^0F$
   The temperature is $^{-}3^0F$

ACTIVITY
Workout the following using integers

1. A motorist moved 100m forward and reversed 150km. How far is she from the starting point?
2. A frog jumped 3 steps four times before diving into the swimming pool. Calculate the distance covered by the frog.
3. Ali's weight dropped by 10kg from 60kg. Find Ali's weight.
4. Move 4metres backwards and another 4metres backwards. Write your last position using integers.
5. Omanya cycled 60km to town and another 2km to his office. How far is Omanya now?

TOPIC: ALGEBRA

Sub topic: Writing phrases for algebraic expressions

Competence

Subject

The learner;

- Identifies the question given.
- Writes in short.

CONTENT

Writing phrases for algebraic expressions.

Examples

1. Add b to a
   = b+a

2. Multiply x by 2, then add 3 to the result.
   $2x + 3$

3. $\frac{x}{4}$ + 5 = Divide x by 4, then add 5.

ACTIVITY

Write phrases for these

1. x + y
2. x − y
3. 3 (n + 5)
4. 2a – 1
5. 2 (a – 1)
6. $\frac{t + 3}{2}$

TOPIC: ALGEBRA

Sub topic: Subtraction

Competence

Subject

The learner;

- States the meaning of subtraction
- Replaces a known for unknown.

- Multiplies, adds, subtracts or divides.

CONTENT

Subtraction
Example.

1. Given b = 6. Find b + 8
   b+8
   6+8
   =14

2. If p = 8, q = 6, a = 2. Find pqa?
   Pqa | 48
   P x q x a | x 2
   (8 x 6) x 2 | 96

3. Given b = 6, c = ˉ3, a = ˉ2. Find $\frac{bc}{a}$

$\frac{bc}{aa} = \frac{b \times c}{}$

$= \frac{6 \times \bar{3}}{2}$

$= \frac{18}{2}$

$= \bar{9}$

ACTIVITY

Find the value of the following.

If p = 8, q = 6, r = 4, a = 2, b = 6 and c = 3

1. 3p
2. $\frac{p}{r}$

3. $\frac{1}{4}$ pc
4. Q – 1
5. Pqr
6. Pq + r
7. ab

Collecting like terms

Example

1. simplify: r + r + r
   3r

2. simplify: 3x + 6y – x – 2y
   3x – x + 6y – 2y
   2 x + 4y

3. Find the distance round this figure.

a+ 3

a 

Perimeter = Add all sides round

= a +3+a+3+a+a

= a+a+a+a+3+3

= 4a + 6

ACTIVITY

Collect the like term

1. Y + y + y + y
2. Y x y x y x y
3. 8w – 8w + 4
4. 8 x + 3 + 4y – x
5. 9h + 3k – 4h – k
6. 2m

8m+5 6m

TOPIC: ALGEBRA

Sub topic: Removing brackets

Competence

Subject

The learner;

- Opens brackets then simplifies
- Deals with operations well.

CONTENT

Removing brackets

Example

1. Remove brackets: 2 (a + 3)

   2(a + 3)

   2a + 6

2. Remove the brackets: 3 (2 + x) + 2 (x + 8)

   3 (2 + x) + 2 (x + 8)

   6 + 3 x + 2 x + 16

   6 + 16 + 3 x + 2 x

   (22 + 5 x)

3. Remove the brackets: 3 (x + 3) – 2 (x −1)

   3 (x + 3) – 2 (x −1)

   3x + 9 – 2x + 2

   3x – 2x + 9 + 2

   X + 11

ACTIVITY

Remove the brackets and simplify.

1. 2 (6 + b)
2. 4 (a – 2b)
3. $\frac{1}{2}$ (2a + 4b)
4. $\frac{1}{3}$ (6x – 9y)
5. (3x + 5) – (2x + 2)
6. 3 (x – 1) + 2 (x + 1)

TOPIC: ALGEBRA

Sub topic: Forming and solving equations.

Competence

Subject

The learner;

- Interprets the question given.
- Forms a statement
- Finds the unknown side

CONTENT

Forming and solving equations.

Examples

1. The perimeter of a rectangle is 24cm. find x



L + L + w + w = 24cm

X + X + 4cm + 4cm = 24cm

2X + 8cm – 8cm = 24cm – 8cm

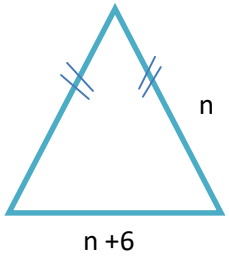
2X + 0 = 16cm

2X = 16cm

$\frac{2}{2}x = \frac{16}{2}$ cm

X = 8CM

2. The perimeter of an isosceles triangle below is 36cm. find n



Perimeter = Add all sides round

n +n + n + 6 = 36cm

3n + 6 = 36cm

3n + 6 −6 = 36cm – 6n

3n + 0 = 30

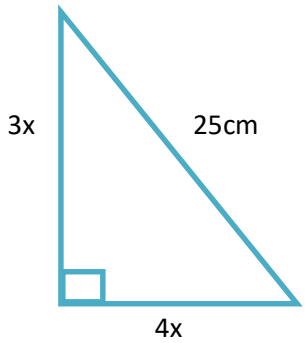
$\frac{3n}{3} = \frac{30}{3}$

n = 10cm

ACTIVITY

Find the values of the unknown letter.

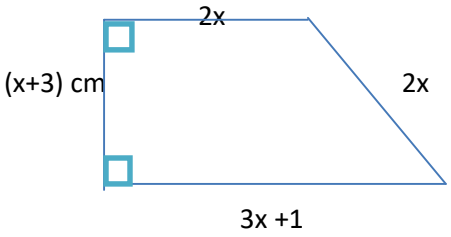
1. The perimeter of the triangle below is 60cm. find X



2. The perimeter of the rectangle below is 34cm. find the width if the length is 12cm



3. The perimeter of the trapezium below is 44cm. find X



TOPIC: ALGEBRA

Sub topic: Solving equation involving brackets

Competence

Subject

The learner;

- Identifies the question given
- Opens the brackets.
- Subtracts, adds, or divides effectively.

CONTENT

Solving equations involving brackets

Examples.

1. Solve: 3(y +4) = 21

   3y +12 =21

   3y+12 −12 = 21 −12

   3y+0 = 9

   $\frac{3y}{3} = \frac{9}{3}$

   Y = 3

2. Solve : 5 (y+1) – 3 (y −1) = 14
   5y +5 – 3y + 3 = 14
   5y – 3y + 5 + 3 = 14
   2y + 8 = 14
   −8 −8
   2y =6
   2y 6
   2 2
   Y = 3

ACTIVITY

Solve

1. 2(X + 2) =10
2. 3 (Y −1) = 21
3. 6 (P−4) =30
4. 3 (X −2) + 2 (X −1) = 2
5. 5 (X−1) −3 (X −3) = 20
6. 4 (X−1) −3 (X −2) = 4

TOPIC: ALGEBRA

Sub topic: Solving equation involving brackets

Competence

Subject

The learner;

Works out the number effectively.
Balances the two sides.

CONTENT

More about equations.

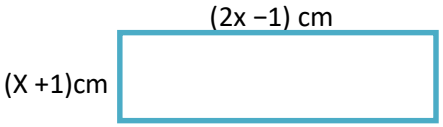
Examples

1. Solve: 4x −3 = x +6
   4x −3 + 3 = x+6+3
   4x = x+9
   4x –x = x –x + 9
   3x = 9
   3x =9

3 3

X = 3

2. Find the value of x in the figure



(x +3)cm

(2x −1) cm = (x+3) cm

(2x −1) cm = (x +3) cm

Cm cm

2x −1 = x +3

2x – 1 + 1 = x +3+1+1

2x = x +4

2x – x = x –x +4

X = 4

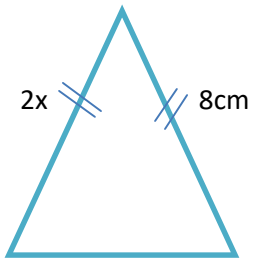
ACTIVITY

Solve

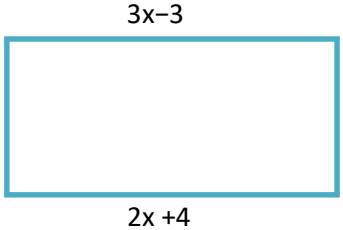
1. 2x +4 =x +11
2. 2x −7 = x +1
3. 3 (x−1) = 4 (x −12)

Form equations and find x

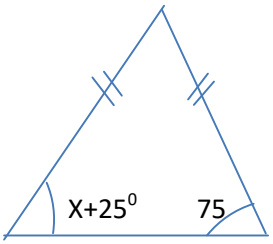
4.



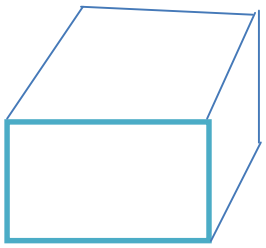
5.



6.

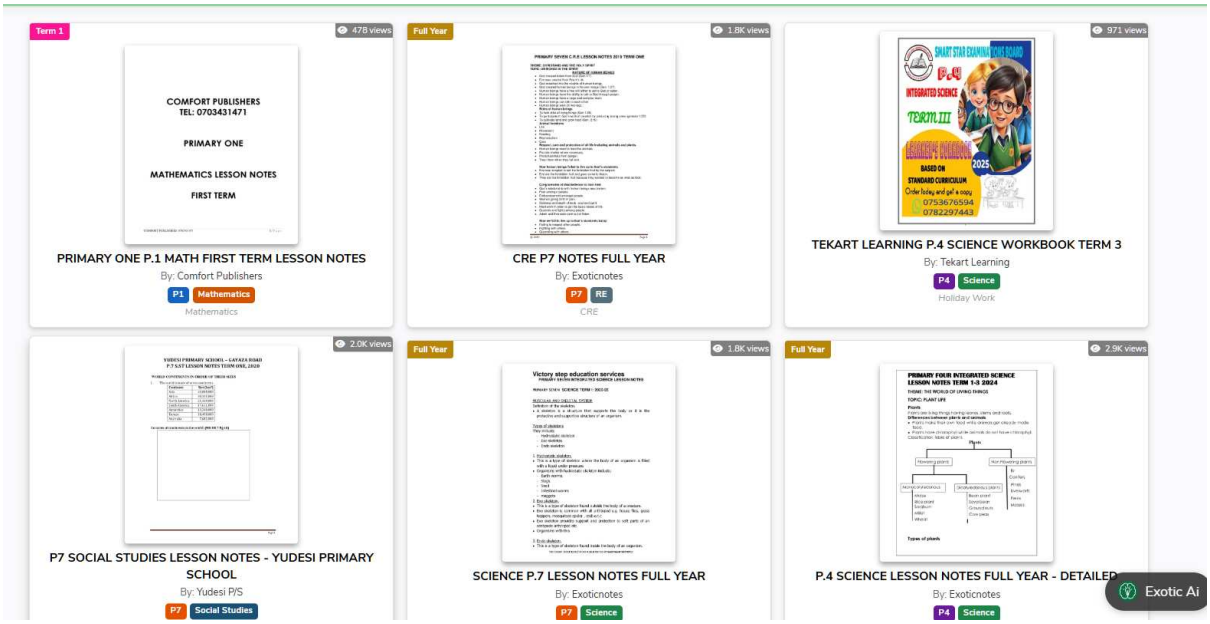


7.



3x −2)cm

This document was downloaded from https://exoticnotes.com



Do you need more LESSON NOTES for Primary (All classes)?

Click
https://exoticnotes.com/notes/primary/

If you need LESSON NOTES for SCIENCE (P.1 – P.7)
Click
https://exoticnotes.com/notes/primary/science/

If you need LESSON NOTES for English (P.1 – P.7)
Click
https://exoticnotes.com/notes/primary/english/

If you need LESSON NOTES for Mathematics (P.1 – P.7)
Click
https://exoticnotes.com/notes/primary/mathematics/