02/07/2025

Lesson no- 11

Basic Geometrical Concept

I Summary :-

1) The word Geometry has been derived from the Greek word Geometrion in which geo means earth and metron means to measure.

2) BASIC ELEMENTS OF GEOMETRICAL FIGURES :-

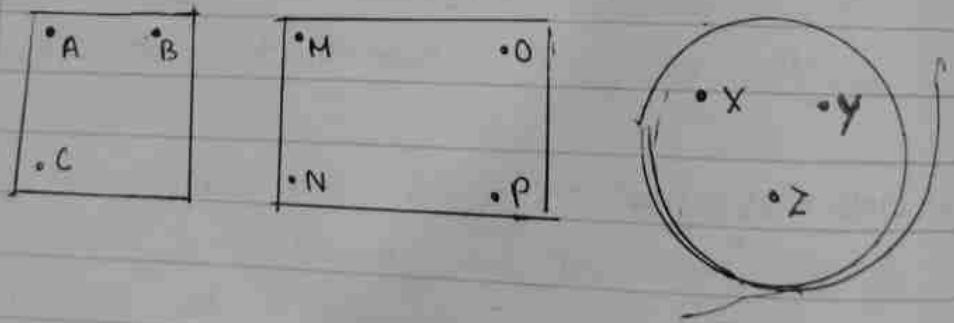
=> POINT(.) : A point gives an Idea of a location by making a dot with sharp pencil on a paper It has no length, breadth, or thickness. It just has a position and only its location can be determined.

* LINE :- A line is a collection of points, which can be extended endlessly on both the sides. It has length only. It has neither breadth nor thickness

* LINE SEGMENT :- (—) A line segment is a part of a line that is bound by two distinct end points. It has a definite length but no breadth and thickness. It is the shortest distance between two points. A line segment from A - to B is represented by seg AB or $\overline{AB}$ or $\overline{BA}$.

★ Ray: A ray is also a part of a line which has only one end point and can be extended endlessly in one direction. A ray has no thickness. Represent as $\overleftarrow{AB}$. Here A is fixed and B is the point on the path of the ray.

★ PLANE: A plane is a flat smooth surface that extends indefinately in all direction, it has length and breadth but no thickness.
A plane is denoted by taking 3 or more points on it which don't lie on the same line.



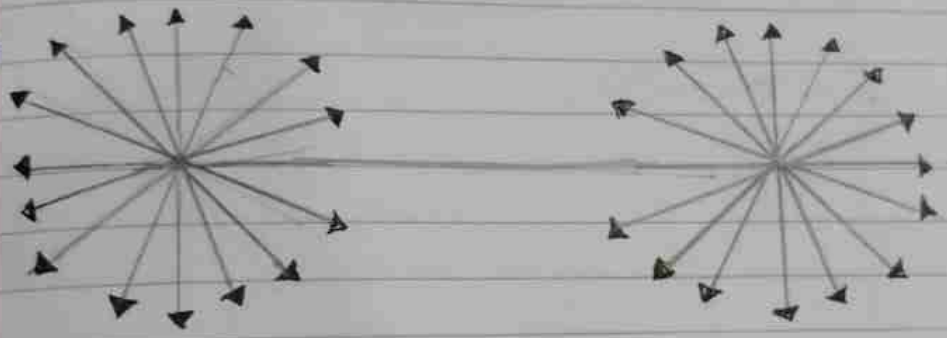
★ INCIDENCE PROPERTIES IN A PLANE :-

The relationship between a given point and a line on a plane is called the incident property.

1) Infinite number of lines can be drawn passing through a given fixed point in a plane.

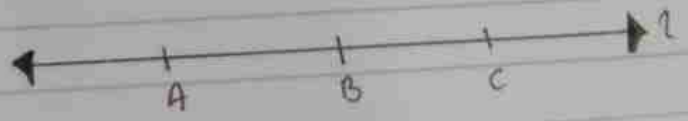
2) One and only one line can be drawn passing through two given points in a plane.

3)



★ COLLINEAR POINTS :-

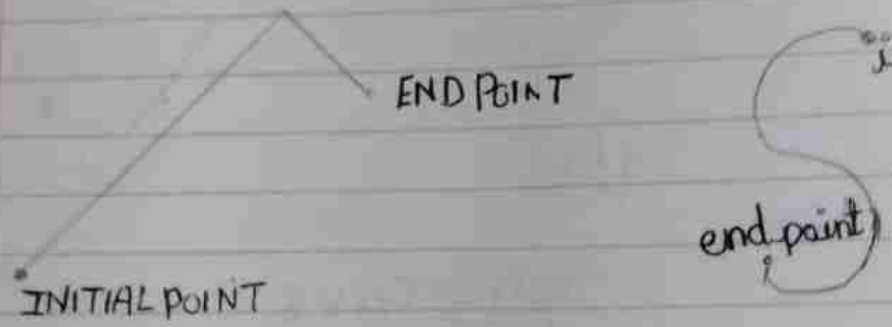
⇒ Two or more points are said to be collinear if they lie on the same line in a plane. This line is called "LINE OF COLLINEARITY"



* OPEN AND CLOSED FIGURES :-

=) CLOSED: Figures in which initials and end points coincide with each other are called closed figures.

OPEN : Figure with different initials and end points are called OPEN Figures.



* ~~Pol~~ POLYGONS :-

~~A~~ Simple closed figures having three or more line segments are called polygons.

* CURVILINEAR AND LINEAR BOUNDARIES :-

Curvilinear : Curvilinear means curved line.

So a boundry containing only curved lines or surfaces is called a curvilinear boundary.

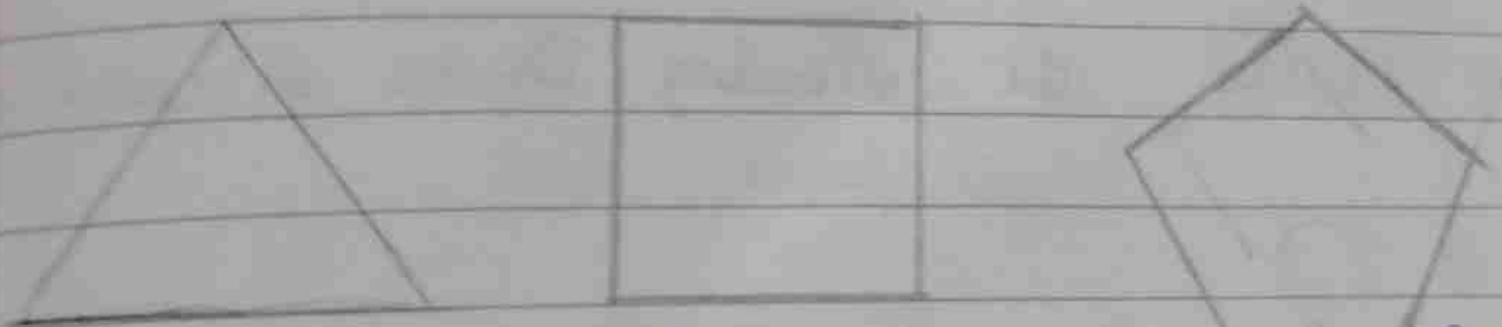
a)

CIRCLE

b)

OVAL

LINEAR :- Linear means straight line. So a boundary containing only ~~one~~ line segments or straight lines are called • linear boundaries.



Triangle Square Pentagon.

08/01/2024

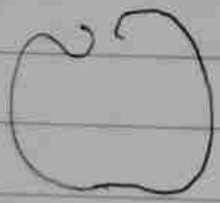
Exercise 11.1

I Identify the following figures as closed or open

a)  ⇒ Closed figure

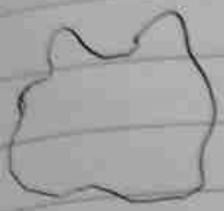
b)  ⇒ Open figure

c)  ⇒ Closed figure

d)  ⇒ Open figure

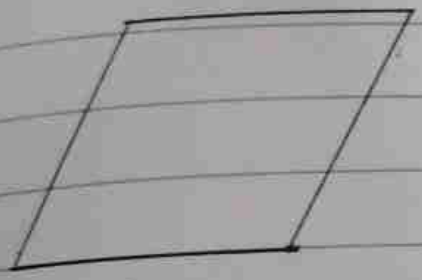
e)  ⇒ Open figure.

i)  ⇒ Closed figure

ii)  ⇒ Closed figure

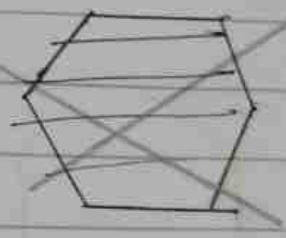
iii) 6 ⇒ Open figure.

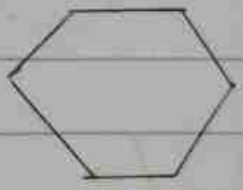
II Name the following polygons:-

1) 

↓

Quadrilateral

2) 

2) 

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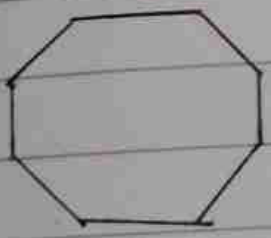
Hexagon

3) 

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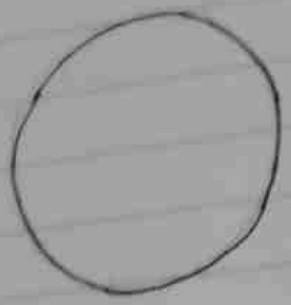
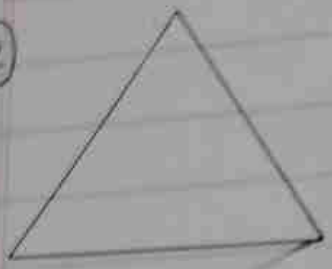
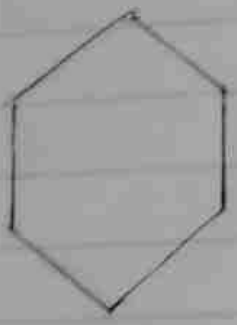
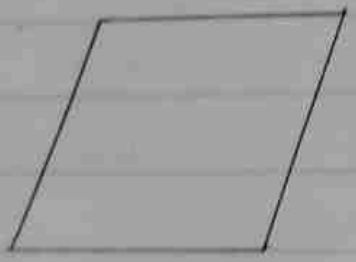
Octagon

III Identify the following boundaries as curvilinear or linear.

1)  ⇒ Circular curvilinear boundary

2)  ⇒ linear boundary

3)  ⇒ Hexagon linear boundary

4)  ⇒ linear boundary.

IV Given 1 example from your daily life for the following.

a) Plain surface :-
⇒ Wall.

b) Curved surface :-
⇒ Gas Cylinder.

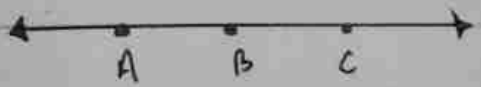
c) Linear boundary :-
⇒ Geometry box

d) Curved boundary :-
⇒ Eggs.

e) Partly curvilinear and partly linear boundaries :-
⇒ Protractor.

I Study the figure, and answer the quetions.

* Fig-

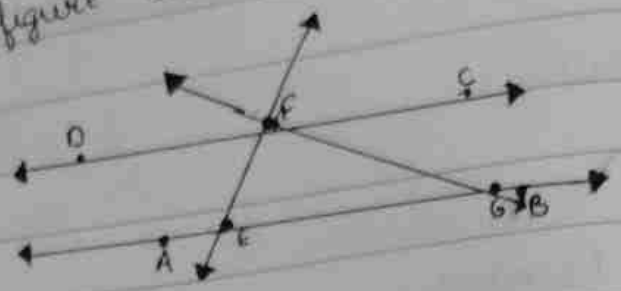


1) Name the three points :-
⇒ A, B and C.

2) Name the 3 line segments :-
⇒ $\overline{AC}$, $\overline{CB}$, $\overline{AB}$.

II In the figure below, name 4 collinear points.

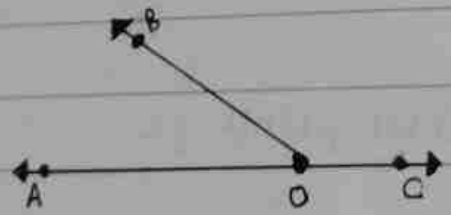
Fig ->



=> A, E, B, G are some collinear points.

III Study the adjacent figure and fill in table given, below

POINTS	A, O, B, C
LINES	$\overleftrightarrow{CA}$
PLANE	A, O, C, B
RAYS	$\overrightarrow{OB}$, $\overleftrightarrow{OA}$ and $\overleftarrow{OC}$



IV Answer the following:-

(a) How many lines can you draw passing through just 2 ~~lines~~ points?

=> Only one.

b) How many lines can you draw through a single point?

⇒ Infinite.

c) What is the maximum number of points at which 2 lines can intersect in a plane?

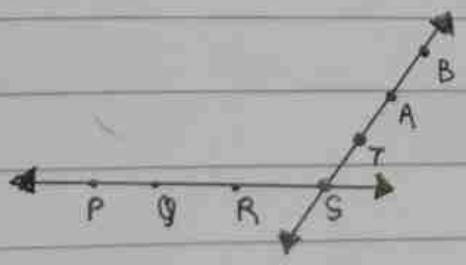
⇒ One.

d) Points A, B, C are collinears. Can you draw another line passing through A, B, C?

⇒ No. you can't.

IX The points P, Q, R, & S are collinear. If points S, T, A and B are collinear, then will the points P, Q, R, S, T, A, B always be collinear? Explain with a diagram.

⇒ No, The points will not always be collinear.



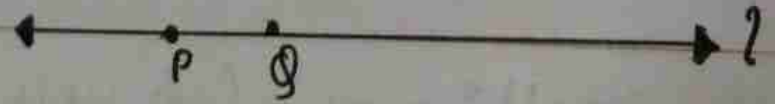
04/01/2

I In how many ways can you name a ray given by

⇒ In three ways: $\overrightarrow{AB}$, $\overrightarrow{BC}$, $\overrightarrow{AC}$.

II Name the given line in 3 different ways:-

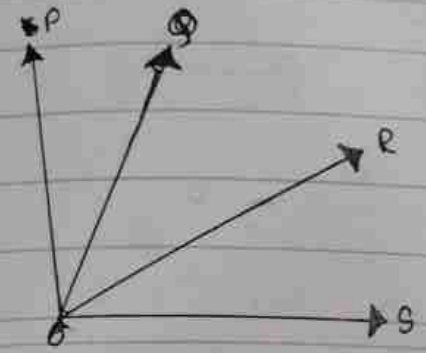
⇒



⇒ $\overleftrightarrow{PQ}$, $\overleftrightarrow{QP}$, and $\overleftrightarrow{l}$

Exercise 11.2

1. How many angles are formed in the figure? Write the names and the adjacent angles also.



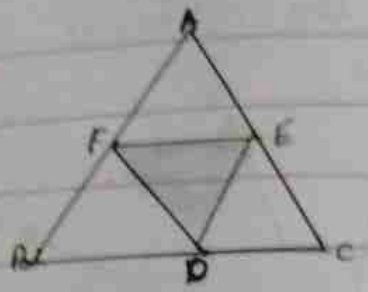
Adjacent angles: ∠SOR and ∠ROQ, ∠ROQ, and ∠QOP, ∠SOR and ∠ROP, ∠QOP and SOQ.

⇒ There are totally 6 angles formed :-
∠SOR, ∠ROQ, ∠SOQ, ∠QOP, ∠ROP, ∠SOP.

2. Take three collinear points and join them. What figure do you get? If the points are ~~collinear~~ non-collinear, then what figure do you get after joining three points?

⇒ If we join three collinear points, you get a line segment. If you join three non-collinear points you get a Straight lined Triangle.

III In the given figure, find the
a) Number of traingles and name them
b) Traingles with vertex E
c) Sides opposite to vertex D

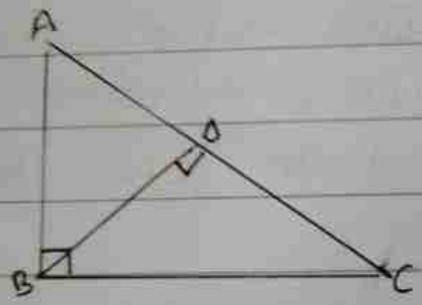


=> a) -> 8traingles : Δ^{le} AEF, Δ^{le} ABC, Δ^{le} EDC, Δ^{le} FOB, Δ^{le} DEF

b) -> Δ^{le} AFE, Δ^{le} FED, Δ^{le} EDC

c) -> FB, EF, EC

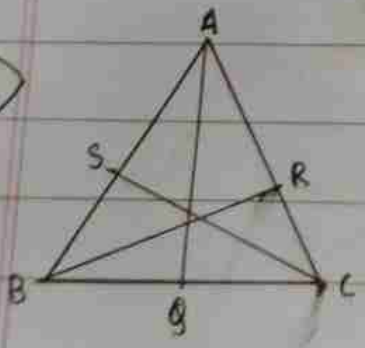
IV Identify the altitudes of traingle ABC



=> AB, BC and AD

V Draw a rough sketch of a traingle ABC Name its vertices, sides and angles, all ~~medians~~ medians of Δ^{le}

=>



Vertices : A, B, C

Sides : AB, BC, AC

Angles : $\angle A$, $\angle B$, $\angle C$

If Two angles of a traingle are in the ratio 2:3, and it's third angle is 80°. Find the other two angles of the traingle.

=> Given,
Two angles are in the ratio 2:3 ie $\angle A : \angle B$

$\angle C = 80°$, $\angle A = 2x$, $\angle B = 3x$.
Sum of angles in $\Delta le = 180°$

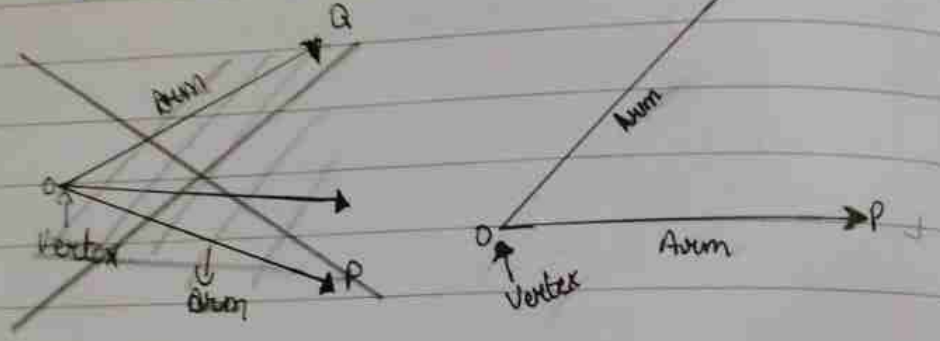
$\therefore 2x + 3x + 80 = 180°$
$5x + 80 \longrightarrow = 180°$
$5x = 180° - 80°$
$5x = 100°$
$x = \frac{100^{20°}}{5_1}$ $\therefore x = 20°$

$\therefore \angle A = 2x = 2 \times 20 = 40$
$\angle B = 3x = 3 \times 20 = 60$
$\angle A + \angle B + \angle C = 180°$
$80 + 60 + 40 = 180°$ //.

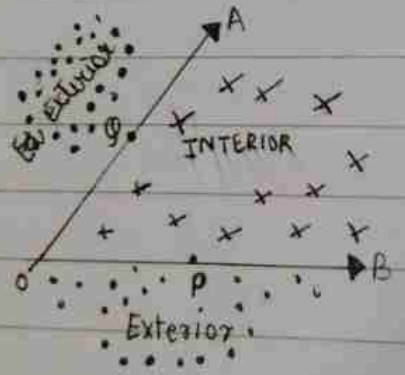
* Summary :-

1. ANGLES :-

When two rays have a common initial point, an angle is formed. The common initial point is called the 'vertex' of the angle, and the two rays forming the angle are called the arms or sides of the angle. An angle is represented by the symbol ∠.



EXTERIOR AND INTERIOR OF AN ANGLE



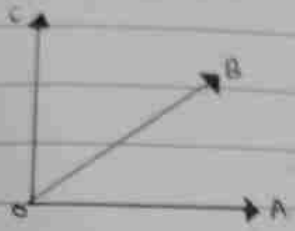
ADJACENT ANGLES:-

Two angles in a plane are said to be adjacent if they have:

(i) A common vertex.

(ii) A common arm.

(iii) The other two non-common arms are on the opposite sides of the common arm.



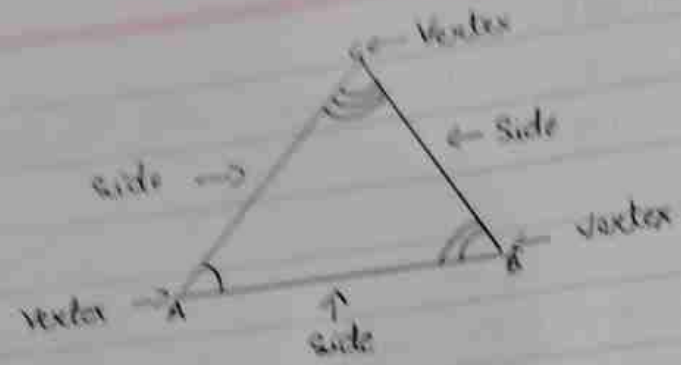
LINEAR PAIR: If the sum of ∠AOB and ∠BOC is 180°, then we say these two adjacent angles form a linear pair.

MAGNITUDE OF AN ANGLE:-

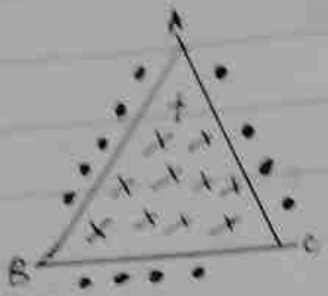
The size or magnitude of an angle depends upon the opening between the arms. It doesn't depend on the length of an arm.

TRAINGLES:-

A closed figure bound by three line segments is called a traingle. The sum of angles of a traingle is 180°.

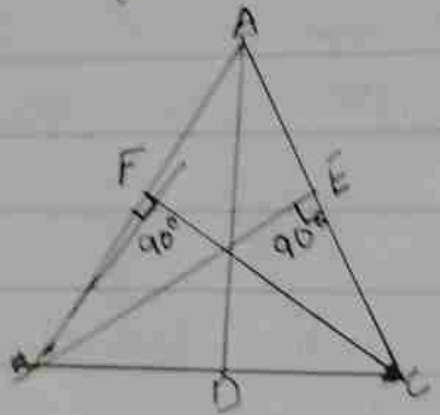


INTERIOR AND EXTERIOR OF A TRIANGLE :-



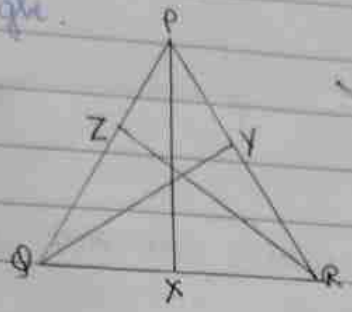
ALTITUDE OF A TRIANGLE :-

The perpendicular drawn from the vertex of a triangle to its opposite side is called an altitude of a triangle.



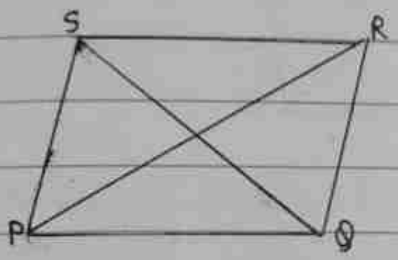
MEDIAN OF A TRAINGLE :-

The line joining the midpoint of a side of a traingle to its opposite vertex is called a medium of a the traingle.



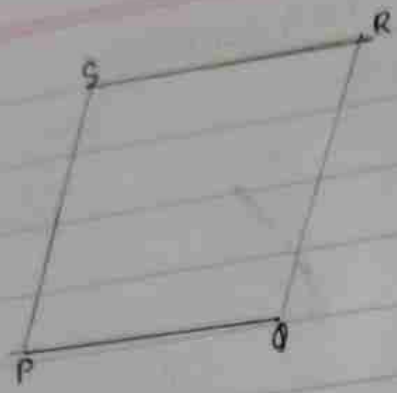
QUADRILATERALS :-

A closed figure bound by 4 line segments is called a Quadrilateral. The line segments joining the opposite vedices of a quadrilateral are called its diagonals



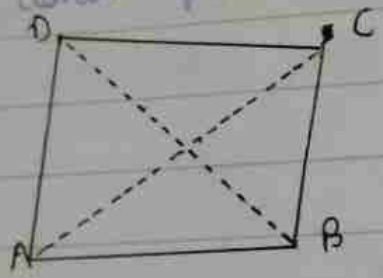
ADJACENT SIDES :-

In a quadrilateral PQRS (The fig - below), The two sides PQ and QR have a common end point 'Q'. Such sides with a common end point are called adjacent sides.

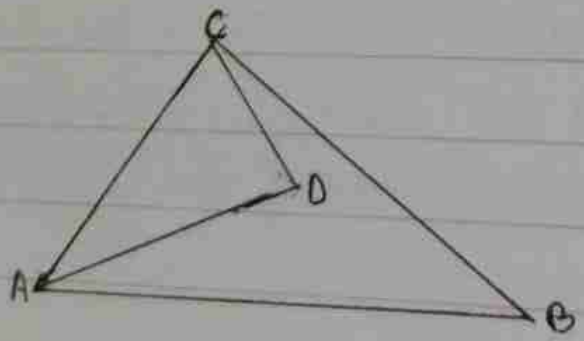


CONVEX AND CONCAVE QUADRILATERALS :-

CONVEX QUADRILATERAL : If no line segment joining any two vertices of the quadrilateral lies outside the boundary of the quadrilateral, its called convex quadrilateral



CONCAVE QUADRILATERAL : If atleast one line segment joining the vertices lies outside the boundary of the quadrilateral, then its called concave quadrilateral

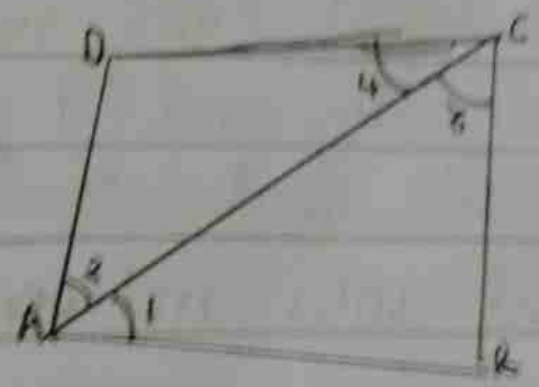


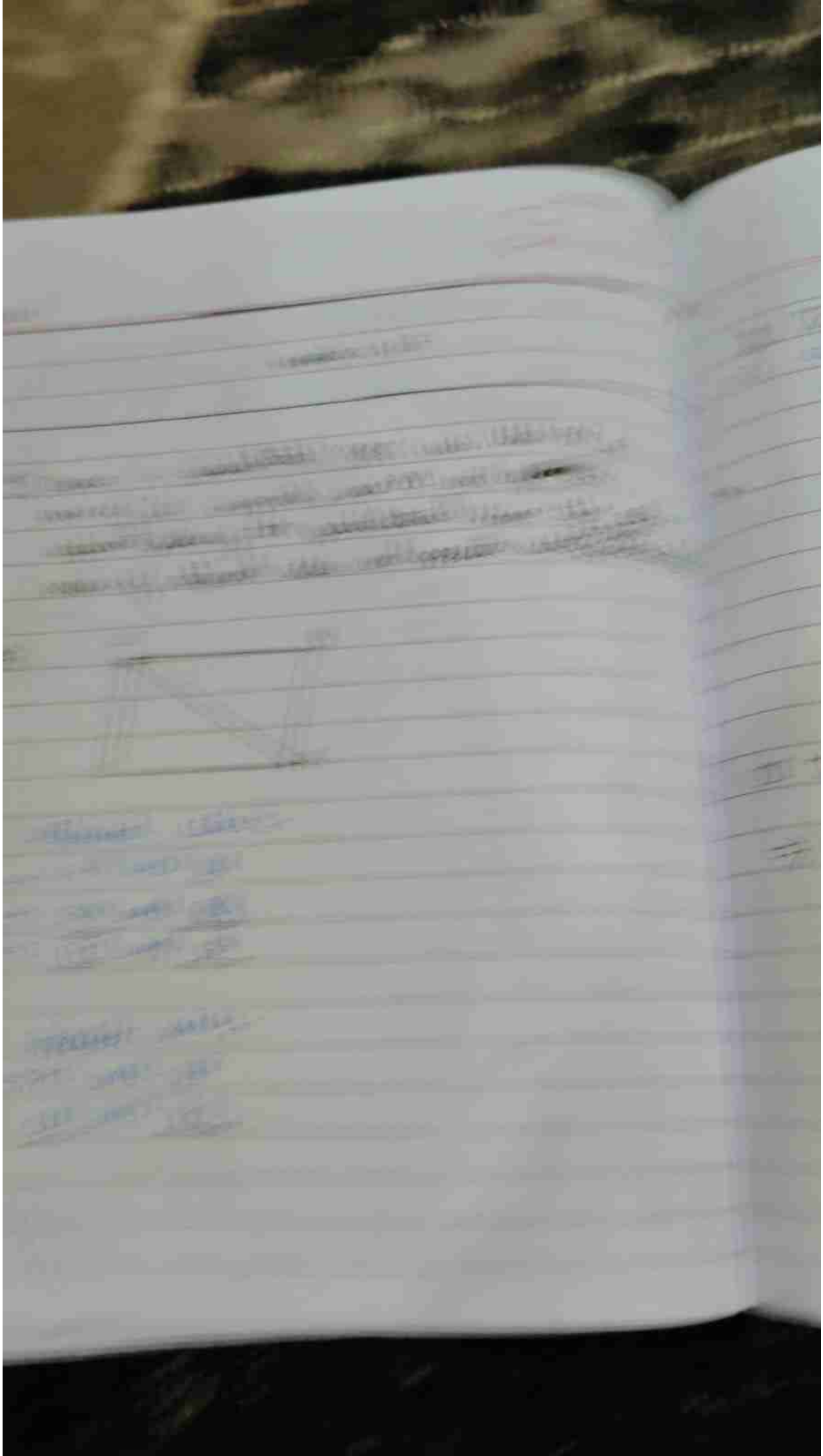
" A triangle has three altitudes and three medians"

ANGLE SUM PROPERTY OF A QUADRILATERAL

The sum of all angles of a quadrilateral is 360°

Draw a Quadrilateral ABCD with one of its diagonals AC.

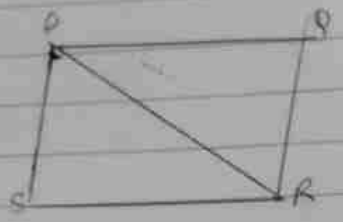




Exercise : 11.3

I) Draw a quadrilateral PQRS such that PR is one of its diagonals, and PQ and QR are adjacent sides of the quadrilateral. Name the other pair of adjacent sides and opposite sides in the quadrilateral.

=>



Adjacent sides :-

→ PQ and QR

→ SR and RQ

→ PS and SR

Opposite sides :-

→ PS and QR

QR and PQ.

II In the adjacent figure, Find the measure ∠QRS consider quadrilateral.

=> Sum of angles in a quadrilateral = 360°

$\angle P + \angle Q + \angle R + \angle S = 360°$

$45° + 90° + x + 90° = 360°$

$x + 225 = 360°$

$x = 360 - 225$

$x = 135°$ //

$\therefore 45 + 90 + 135 + 90 = 360°$.

III The angles of a quadrilateral are 100°, 80°, 130° and $x°$, Find the value of x.

=> Sum of angles in a quadrilateral = 360°

$\therefore 100° + 80° + 130° + X° = 360°$

$310° + x = 360°$

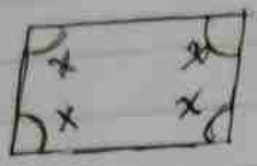
$x = 360° - 310$.

$x = 50°$

$\therefore 100° + 80° + 130° + 50° = 360°$ //

IV All 4 angles are same of a quadrilateral, find each one.
the angles of a quadrilateral ~~for~~ the adjacent figure ~~find~~ the measure of ∠ θ

⇒



$x + x + x + x = 360^\circ$

$4x = 360$

$x = \frac{360}{4} = 90$

∴ each angle $= 90^\circ$.

V The angles of a quadrilateral are in the ratio 1:2:3:4. Find the angles?

⇒ Ratio of 4 angles is given as 1:2:3:4

sum of quadrilaterals = 360°

$1x + 2x + 3x + 4x = 360^\circ$

$10x = 360^\circ$

$x = \frac{360}{10} = 36$

$\therefore$ $1x = 1 \times 36 = 36$

$2x = 2 \times 36 = 72$

$3x = 3 \times 36 = 108$

$4x = 4 \times 36 = 144$

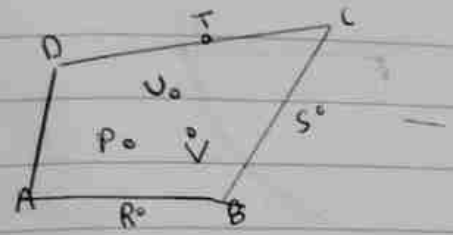
Total $\rightarrow$ 360 //

II Write the points which lie :-

a) in the interior of the quadrilateral ABCD.

b) in the exterior of the quadrilateral ABCD.

c) on the boundry of the quadrilateral ABCD.



$\Rightarrow$ a $\rightarrow$ P, U and V

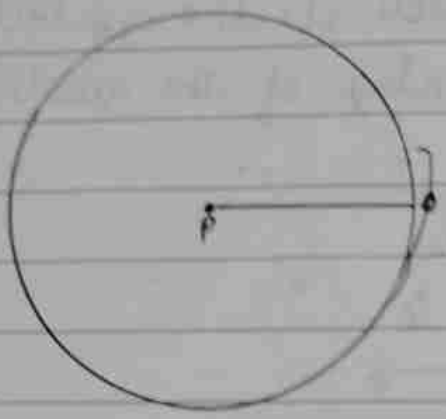
b $\rightarrow$ R and S

c $\rightarrow$ A, B, C, D and T.

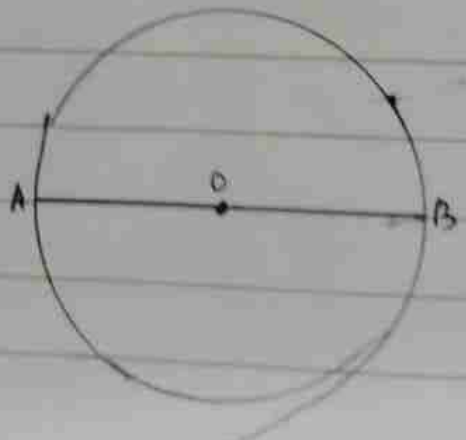
* Summary:-

CIRCES :- A circle is a closed figure made up of points in a plane that are at the same distance from a fixed point.

RADIUS :- This is a difference between the centre and any point on the boundary of the circle. The plural of radius is radii.

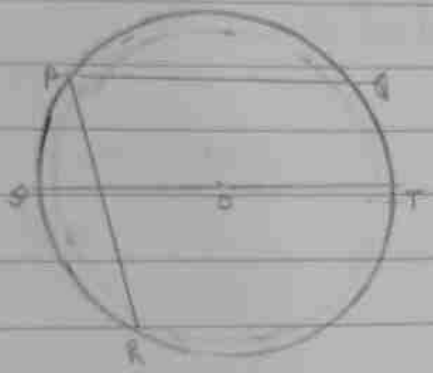


DIAMETER :- A ~~boundary~~ line segments with both its end point on the boundary of the circle and passing through the center of the circle is called the diameter of the circle. Diameter = 2x radius.

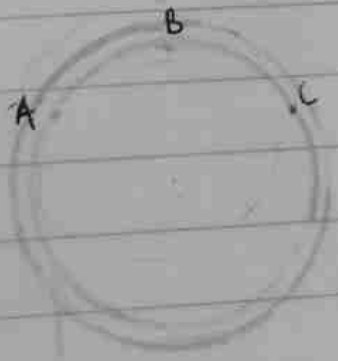


CIRCUMFERENCE :- The length of the boundary of circle is called circumference.

CHORD OF A CIRCLE :- A line segments whose end points lie on the circle is called a chord of a circle. The diameter of a circle is the longest chord of a circle.

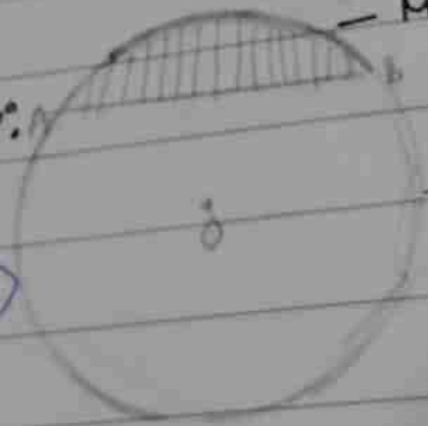


ARC OF A CIRCLE :- A part of a circle is called an arc and is usually named with three points.



MAJOR AND MINOR ARC : The bigger arc is called major arc, and the smaller arc is called a minor arc.

Segment of a circle:
A part of circle enclosed by the => chord and an arc.



08/01/24

Exercise 11.4

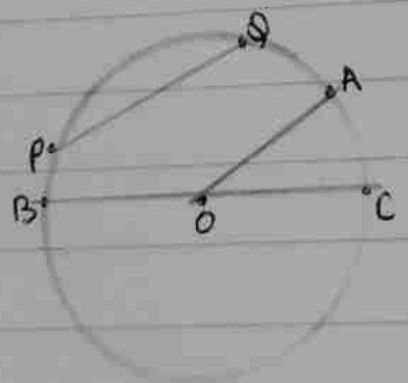
I Define the following:-

1) Diameter: A line segment with both its endpoints on the boundary of the circle and passing through the centre of the circle is called the diameter of the circle.

2) Circumference: The length of the boundary of a circle is called circumference.

3) Chord: A line segment whose end points lie on the circle is called a chord of the circle. The diameter of a circle is the longest chord of the circle.

II Name the following parts of the given circle.



a) Radius :-
⇒ OB, OC, OA

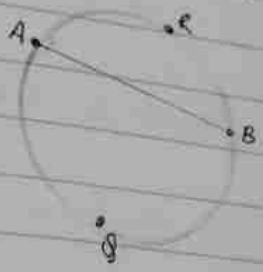
b) Diameter
⇒ BC

c) Chord
⇒ PQ, BC

d) Semi-circle
⇒ BRC, BQC

e) Minor arc
⇒ $\overline{AC}$

III Name the arcs and classify them as minor & Major



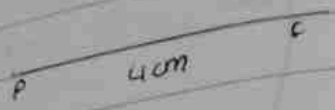
MINOR ARCS : $\overline{ARB}$
MAJOR ARCS : $\overline{AQR}$

IV Give some examples of objects circular in shape.
⇒ Ball, Clock (circular one), Pizza, plate, tomato etc

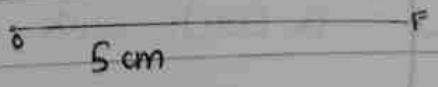
V Draw a circle with the following radius.

P.T.O

a) 4 cm



b) 5cm



VI Find the diameter with the following radius

1) 6 cm
⇒ 6 × 2 = 12 cm
∴ Diameter = 12 cm.

2) 3.5 cm
⇒ 3.5 × 2 = 7.0 cm
∴ Diameter = 7 cm

VII Fill in the blanks :-

a) A circle consists of an infinite number of radii & diameter.

b) All radii of a circle are equal.

c) The longest chord of a circle is known as diameter.

d) Boundary of a circle is called circumference.

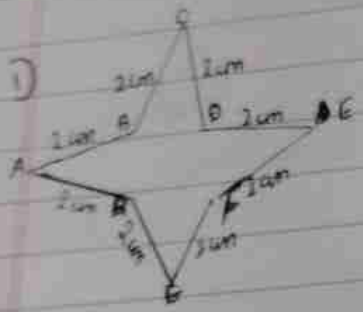
e) A part that lies between two distinct on a circle arc.

f) The path of a point moving equidistant from a centre point forms a circle.

Exercise 16.1

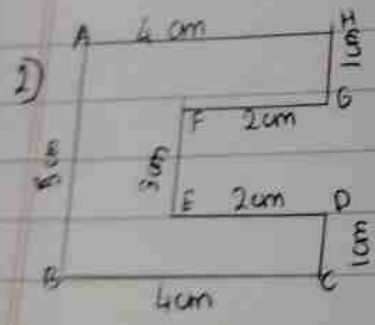
I Find the perimeter of each of the following

1)

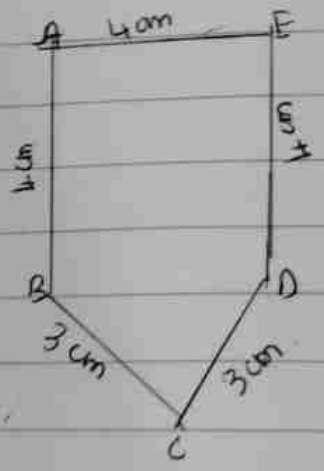


⇒ There are 8 sides of same length that is 2 cm.
∴ $8 \times 2 = 16$ cm, Perimeter = 16 cm.

2)

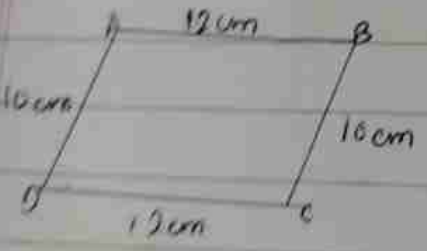


4 cm × 2 + 1 × 2 + 2 × 2 + 3 + 5 = 22 cm = Perimeter.



4 × 5 + 3 × 2 = 18 cm

∴ Perimeter = 18 cm.



12 × 2 + 10 × 2 =

= 44 is the perimeter

II Complete the table given below for a rectangular figure :-

	Length	Breadth	Perimeter
(a)	16 cm	___	40 cm
(b)	___	38 cm	180 cm
(c)	18.5 cm	9.5 cm	___
(d)	15.8 cm	___	56 cm

a) Given,

$\Rightarrow l = 16$ cm

$b = ?$

$P = 40$ cm

$P = 2(l + b)$

$40 = 32 + 2b$

$2b + 32 = 40$

$2b = 40 - 32$

$b = \frac{8}{2}\frac{4}{1}$ cm

b) Given,

$\Rightarrow l = ?$

$b = 38$cm

$P = 180$cm

$P = 2(l + b)$

$180 = 2l + 76$

$2l + 76 = 180$

$2l = 180 - 76$

$l = \frac{104}{2}\frac{52}{1}$ m

Extra numbers

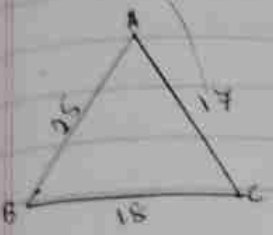
b) Given:
l = 12 cm
b = ?
P = 42.6 cm
42.6 cm = 2(l + b)
42.6 = 24 + 2b
2b + 24 = 42.6
2b = 42.6 − 24.0
b = 18.6 / 2 = 9.3

42.6
− 24.0
18.6

c) l = 18.5 cm
b = 9.5 cm
P = ?
P = 2(l + b) cm
P = 2(18.5 + 9.5) cm
= 28 × 2 cm
= 56 cm //

d) l = 15.8 cm
b = ?
P = 56 cm
P = 2(l + b)
56 = 2(15.8 + 2b)
2b + 30 = 56
56 = 2(15.8 + 2b)
56 = 2 × 15.8 + b
56 = 31.6 + 2b
2b + 31.6 = 56
2b = 56 − 31.6
b = 24.4 / 2 = 12.2

III The sides of a triangular park are 25 m, 18 m and 17 m. Find the total distance travelled by a man after completing 3 rounds of this park?



Perimeter = AB + BC + CA
= 25 + 18 + 17
= 60 //

IV ~~l = 250 m~~ ~~b = 145 m~~ ~~P = 2(l + b)~~ The length and breadth of a rectangular ~~field~~ is garden is 250 m and 145 m. Find the cost for fencing the garden at the rate of ₹ 4.50 per metre.

⇒ $l = 250\ m$
$b = 145\ m$
$P = 2(l + b)\ m$
$P = 2(250 + 145)$
~~Cost~~ $= 500 + 290$

Exercise
16.2

I Find the cost of levelling a garden with a length of 42m and a breadth of 35m at the rate of ₹ 40

⇒ Given,
$l = 42m$
$b = 35m$

Area of rectangle = $l \times b$ m^2
$= 35 \times 42 m^2$

$A = 1470\ m^2$
Rate = $A \times$ Rs 400
$= ₹\ 58,800$ //.

II The area of a rectangle is $180\ m^2$. If its length is 18 cm, find its breadth and perimeter

⇒ $A = 180\ m^2$
$l = 18m$
$b = ?$
$P = ?$

$A = l \times b$

$180 = 18 \times b$

$180 = 18b$

$b = \frac{180}{18}^{10}$

$b = 10\ m$

$\therefore P = 2(l + b)\ m$

$P = 2(18 + 10)\ m$

$P = 36 + 20\ m$

$P = 56\ m$

III A room is 18 m long and 10 m broad. Find the cost of carpeting the floor at the rate of ~~₹ Rs~~ ₹ 650 each m^2?

$\Rightarrow$ $l = 18\ m$

$b = 10\ m$

$A = l \times b$

$A = 18 \times 10\ m^2$

$A = 180 \times ₹\ 650$

Cost $= ₹\ 84,500\ m^2$

IV. A rectangle is 36m long and 25 m broad. Find the side of a square whose area is equal to the area of this rectangle.

=> $l = 36$ cm

$b = 25$ cm

Area of rectangle $= l \times b$

$= 36 \times 25$ m²

$= 900$ m²

Area of square $= s^2$

Given Area of rectangle = Area of square

$\therefore 900 = s^2$ m²

$s = \sqrt{900}$ m²

$s = 30$ m²

V. What happens to the area of the square when its side is a) Halved, b) doubled?

=> a) Halved

Area of square $= s^2$

If side is halfed

$\therefore$ New side $= \frac{s}{2}$

$\therefore A = \left(\frac{s}{2}\right) = \frac{s^2}{4}$

one-fourth of original area

b) doubled

$A = s^2$

New length = 2s

$\therefore A = (2s)^2$

$= 4s^2$

four ~~type~~ times original area.

V How many stamps of size 2 cm × 1.5 cm can be pasted on a sheet of paper of size 6 cm × 12 cm?

⇒ Area of one stamp

= 2 cm × 1.5 cm = ~~3 cm~~

$A = l \times b$

$= 2\text{ cm} \times 1.5\text{ cm} = 3\text{ cm}^2$

Area of paper $= l \times b$

$= 6\text{ cm} \times 12\text{ cm}$

$= 72\text{ cm}^2$

No of shapes = $\frac{\text{Area of paper}}{\text{Area of one stamp}}$

$= \frac{72}{3}\ 24$

$= 24$ stamps

VII How many tiles, each measuring 5m by 4m, are required to cover a rectangular room whose length and breadth 45m and 24m respectively? Find the cost of tiles at ₹ 35 per tile?

=> Area of room = l x b
= 45m x 25m
= 1080m²

Area of one tile = l x b
= 5m x 4m
= 20m²

No of tiles required = $\frac{\text{area of room}}{\text{area of 1 tile}}$

= $\frac{1080}{20}$ = 54 tiles

Cost of 54 tiles
= 54 x ₹ 35
= 1890 rs //.

Lc-12 understanding Elementary shapes

I Introduction :- summary :-

* Introduction :-
A line segment is a part of a line.

* Comparison by using a divider :-
A divider [Fig. 12.2(i)] is a geometrical instrument that has two arms hinged together with the help of a knob at one end.

* PAIRS OF LINES :-
There are 4 pairs of lines :
1. Intersecting lines.
2. Parallel lines
3. Skewed lines
4. Perpendicular lines.

* INTERSECTING LINES :-
In figure (12.6), lines AB and CD intersect each other at point (O). Such lines are called intersecting lines.

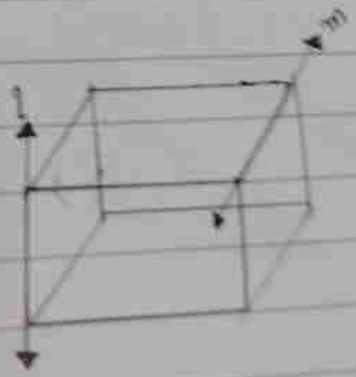
Fig. 12.6

* PARALLEL LINES :-

In figure 12.7, lines AB and CD never meet each other at any point, ie., they are equidistant from each other at each every point such lines are called parallel lines.

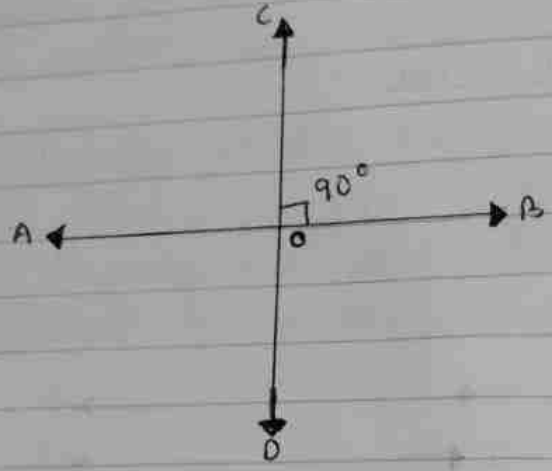
* SKEWED LINES :-

~~In figure~~ Two lines in two different planes that are neither parallel nor intersecting are called skewed lines.



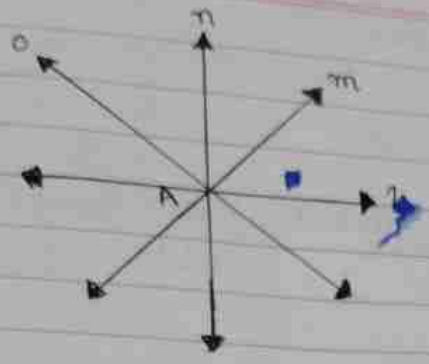
* PERPENDICULAR LINES :-

Two lines in a plane, which intersect each other and form an angle of 90°, i.e, the right angle are called perpendicular lines.



* CONCURRENT LINES :-

Two or more lines that pass through the same point are called concurrent lines and the point of intersection is called is called the point of concurrency.



* TYPES OF ANGLES :-

There are 9 types of angles:

1. Acute angle.
2. Right angle
3. Obtuse angle
4. Straight angle.
5. Reflex angle
6. Complete angle
7. Zero angle.

* ACUTE ANGLE :- An angle whose measurement is less than 90° is known as acute angle.

* RIGHT ANGLE :- An angle whose measure is 90° is called a right angle.

* OBTUSE ANGLE :- An angle whose measure is greater than 90° is called an obtuse angle.

* STRAIGHT ANGLE :- An angle whose measure is 180° is a straight angle.

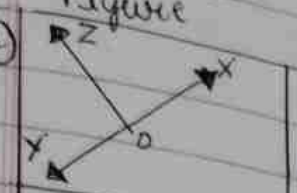
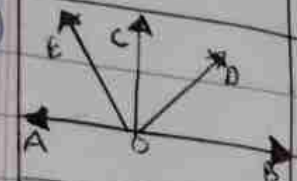
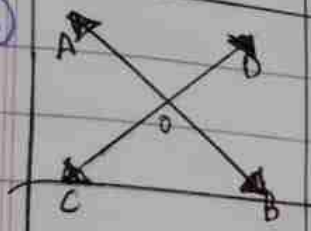
* REFLEX ANGLE :-
An angle whose measure is more than 180° is called as reflex angle.

* COMPLETE ANGLE :- An angle whose measure is 360° is a complete angle.

* ZERO ANGLE :- An angle whose measure is zero degree (0°) is a zero angle.

Exercise 12.1

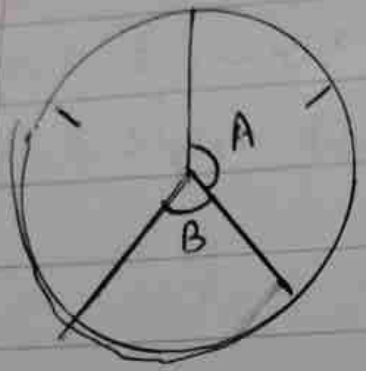
I Indentify the right and straight angles:-

Figure	Right angle	Straight angle
a) 	∠ZOX , ∠ZOY	∠XOY
b) 	∠COA ,∠COB	∠AOB
c) 	—	∠AOB

II What is the magnitude of the angle formed between 2 hands of the clock at following times

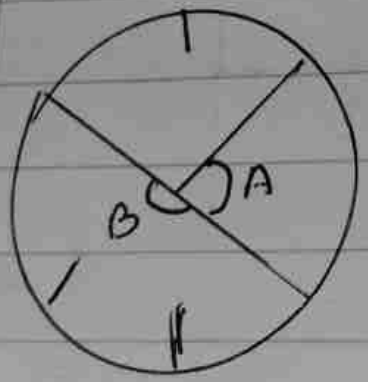
a) 3:30 - 75°
b) 3:00 - 90°
c) 1:30 - 135°
d) 7:00 - 210°
e) 12:00 - 0°
f) 04:00 - 120°
g) 01:00 - 300
h) 08:00 - 240°

III Measure the unknown angles A and B in degrees.

a) 

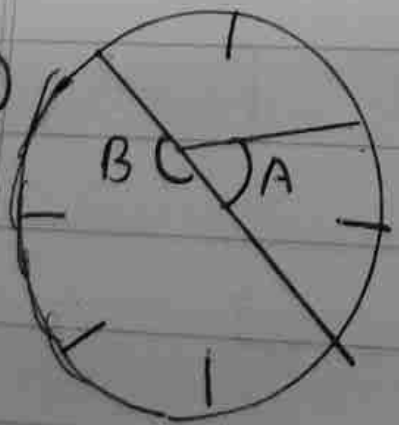
$\Rightarrow \angle A = \underline{120^\circ}$,

$\angle B = \underline{120^\circ}$.

b) 

$\Rightarrow \angle A = \underline{60^\circ}$

$\angle B = \underline{180^\circ}$

c) 

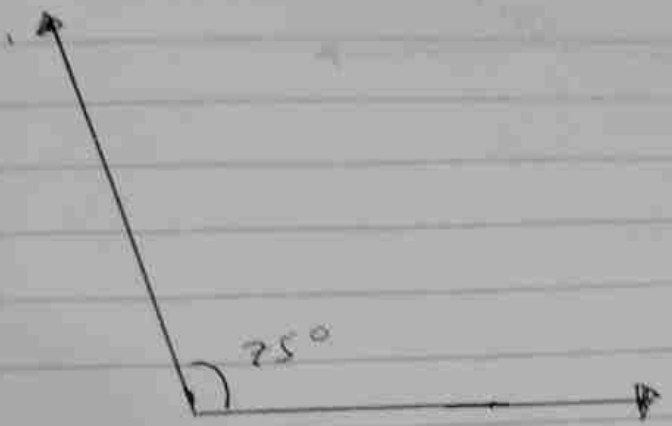
$\Rightarrow \angle A = \underline{90^\circ}$.

$\angle B = \underline{180^\circ}$.

IV Draw and classify the following angles.

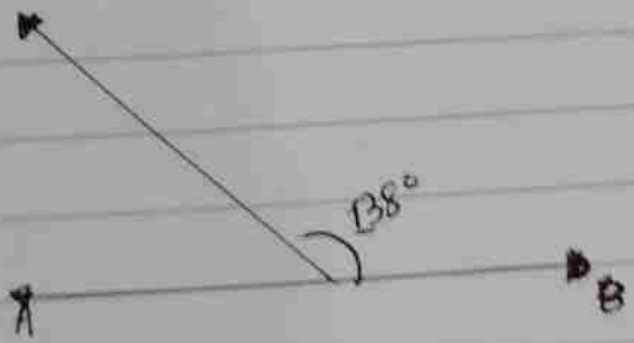
a) 75° :-

=> acute angle



b) 138°

=> Obtuse angle.

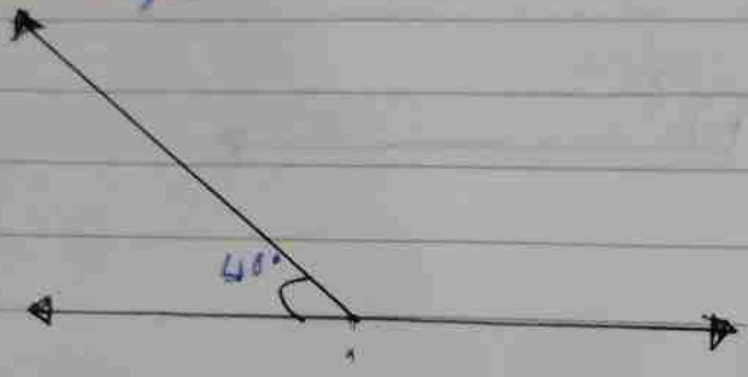


c) 190°

=> Reflex angle

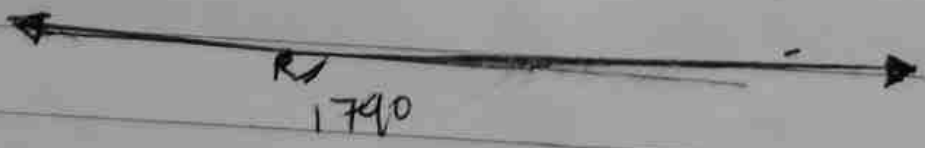
d) 40°

=> acut angle

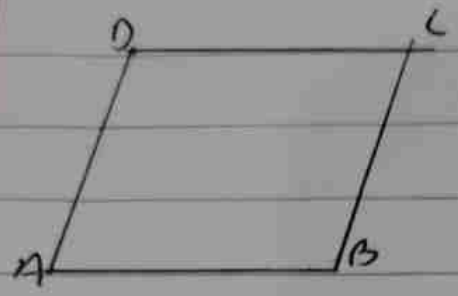


e) 179°

=> obtuse angle.

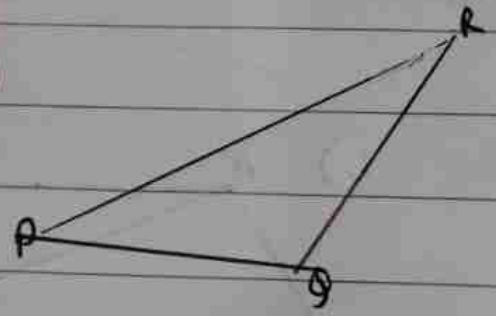


c)



1) ∠DAB = acute angle
2) ∠ABC = obtuse angle

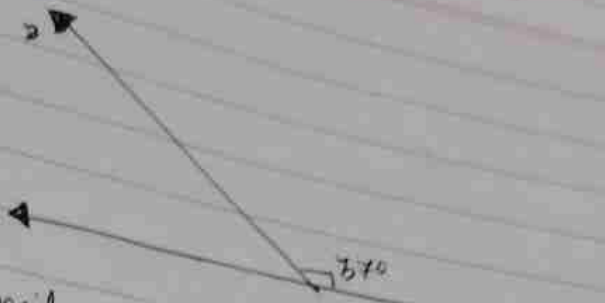
d)



1) ∠PQR = obtuse angle
2) ∠PRQ = acute angle

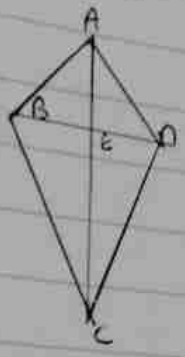
h) 37°

acute angle.



V Specify the given angles.

a)



b)

i) ∠ADE = acute "

2) ∠ABC = obtuse "

3) ∠DEC = right angle

4) ∠AEC = straight angle

1) ∠ABC = obtuse

2) ∠ADC = acute

3) ∠ACD = acute