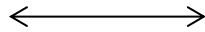**Chapter 8**

Geometry

Important Points :

Points : A point is represented by a small dot . It is made up by a sharp pencil .

. A   (point A)

Line : It has no end point and can be extended indefinitely in both directions .
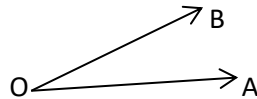
$\longleftarrow \qquad \longrightarrow$

Line Segment : A part of a line is called a line segment . It has two end points

And cannot be extended further .

P _____ Q

Ray   : A part of line which extends indefinitely in only one direction is called a ray.

Its starting point is called the 'initial point '. It has no end point.

Angles: A figure formed by joining two rays at the initial point is called an angle.

1) The two rays which form the angle are called the arms of the angle.
2) The point where the two rays meet is called the vertex of the angle.
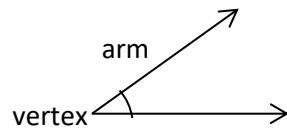
Classification of Angle   :

1)**Acute angle** - An angle which measure between 0° to 90° is called an acute angle.
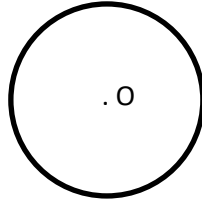
2) **Right angle**   - An angle which measures 90° is called a right angle .

3) **Obtuse angle**   -An angle which measures more than 90° but less than 180° is called an obtuse angle
.

4) **Straight angle** - An angle which measure 180° is called a straight angle.
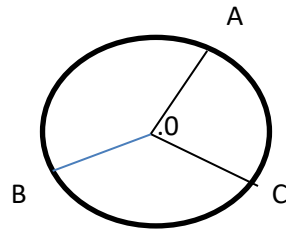
Circle

1) A circle is a simple closed curve with only one curved edge and no vertex.
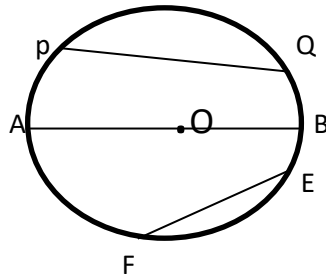
. O   [A circle with centre O]

2) A circle has infinite radii and all radii are equal .

A

.0   [In the figure OA , OB and OC are all radii]

B   C

3) A line segment with its end points on the circle is called a chord of the circle
4) The chord which passes through the centre of the circle and divides the circle into equal halves is called the diameter of the circle it is the longest chord .

P   Q

A   .O   B

E

F

(In the given figure , PQ and EF are chords of the circle . AB is the diameter with centre O)

5) The length of the boundary of a circle is called the circumference of the circle .

Circumference

.O
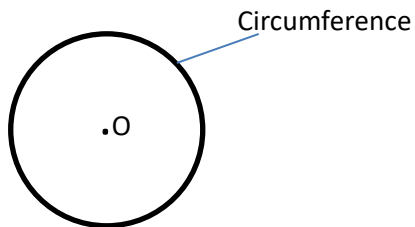
(DRAW THE FIGURE FROM THE BOOK)

EXERCISE 1

1) Classify the following as ray, line, and line segments
   a) Ray b) line c)line segment
2) Do it your self.
3) Do it your self .
4) 6 Rays. – TP, SP,RP,RQ,SQ,PQ .

**EXERCISE 2**

1) Name the angles :
   $a)\angle ABC\;\; b)\;\angle MNP\;\; c)\angle XYZ$
2) Name the vertices and arm of the given angle
   a) Vertex - Q Arms - QP,QR .
   b) Vertex - B   Arms – BA,BC.
   c) Vertex - Y   Arms – YX,YZ.

3) a) In the exterior of ∠ABC - P and Z .
   b) In the interior of ∠ ABC - X and Y .

EXERCISE 3

1) Do it your self .
2) Do it your self .
3) Identify the angles as acute , right ,obtuse, straight without measuring them :
   a) Obtuse b) right c) acute d) straight e) acute f) obtuse g) obtuse h) acute .
4) Classify the angle as acute, obtuse, straight or right using their measure :
   a)117^{0} -obtuse   b) 28^{0} - acute   c) 150^{0}- obtuse   d) 90^{0} – right   e) 180^{0}- straight .

EXERCISE 4
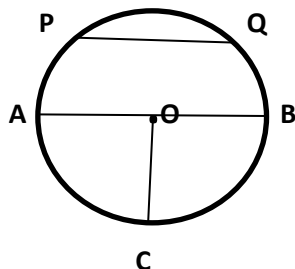
1) Observe the figure and name the following :
   a) Centre of the circle - O
   b) Radii of the circle – OA ,OB , OC
   c) Chord of the circle -   PQ

d) Diameter of the circle – AB

3) Find the diameter of the circle whose :

a) Radius = 16 cm

   Diameter = 2 x radius

          =   2 x 16 cm

          =   32 cm

b) Radius   = 21 cm

   Diameter   = 2 x radius

             = 2 x 21cm

             = 42 cm

c)   Do it yourself

4) Find the radius of the circle whose :

   a)   Diameter = 48 cm
        Radius   = diameter ÷ 2
                    48 ÷ 2
                 =   24 cm
   b)   Diameter = 54 cm
        Radius   = diameter ÷ 2
                   = 54 ÷ 2
                   = 27 cm
   c)   Do it yourself

5)   Do it yourself