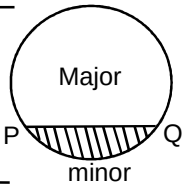
Circles

CIRCLES

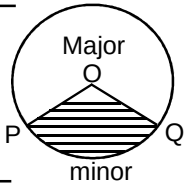
(i) Collection of all points ina plane.
(ii) At fixed distance from a fixed pt in plane

Segment



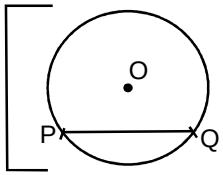
Region PQ is segment

Sector



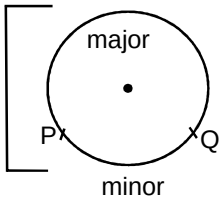
Region POQ is sector

Chord



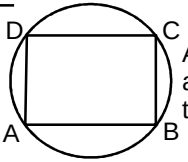
PQ is chord

Arc



PQ is arc

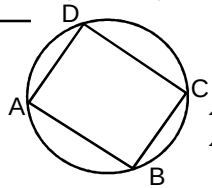
Cydic Quadrilteral



ABCD is cyclic as all vertices touches the circle.

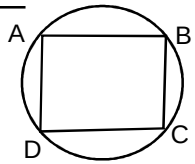
Property

(i) Sum of either pair of opposite angles of cydic quad. is 180º



$\angle A + \angle C = 180º$
$\angle B + \angle D = 180º$

Eg :- Cyclic IIgm is rectangle

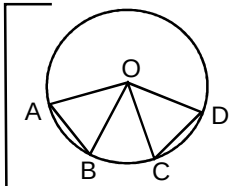


$\angle A + \angle C = 180º$
$\angle B + \angle D = 180º$
$\angle A = \angle C$ &
$\angle B = \angle D$

So, each angle is 90º

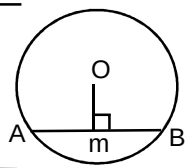
Properties

(i) Equal chord of a circle subtend equal angles at the centre.



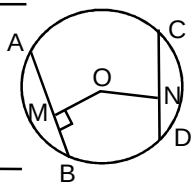
AB = CD
So, $\angle$ AOB = COD

(ii) $\perp$ from centre of a circle bisectsthe chord.



OM $\perp$ AB
So, AM=BM

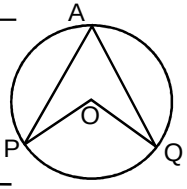
(iii) Equal chord equi - distant from centre.



AB = CD
So, OM = ON

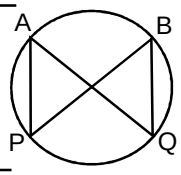
Angle subtended by an arc

(i) Angle subtended at the centre is double the subtended on remaining put of circle.



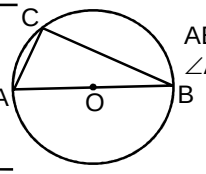
$\angle POQ = 2 \angle PAQ$

(ii) Angles is the same segment of a circle are equal.



$\angle PAQ = \angle PBQ$

(iii) Angle in semi-cirde is right



AB is diameter
$\angle ACB = 90º$