CLASS-9
CHAPTER-10
CIRCLES

Exercise 10.4

1. If two equal chords of a circle intersect prove that the parts of one chord are separately equal to the parts of the other chord

2. If non-parallel sides of a trapezium are equal. prove that it is cyclic

3. If PQ and R are the mid-points of the sides BC, CA and AB of a triangle and AD is the perpendicular from A on BC, prove that PQR and D are concyclic

4. $ABCD$ is a parallelogram.A circle through A,B is so drawn that it intersects AD at P and BC at Q. prove that P, Q, R and D are concyclic.

5. Prove that angle bisector of any angle of a triangle and perpendicular bisector of the opposite side if intersect, they will intersent on the circumcircle of the triangle.

6. If two chrds AB and CD of a circle AYDZBWCX intersect at right angles see Fig 1) , prove that arc CXA +arc DZB=arc AYD +arc AYD +arc BWC= semi-circle

7. If ABC is an equilateral triangle inscribed in a circle and P be any point on the minor arc BC which does nat coincide with B or C, prove that PA is angle bisector of $\angle BPC$

8. In Fig-2, AB and CD are two chords of a circle intersecting each other at point E prove that $\angle AEC = \frac{1}{2}\ c$ Angle subtended by arc CXA at centre + angle subtended by arc $DY\ B$ at the centre).

9. If bisectors of opposite angles of a cyclic quadrilateral $ABCD$ intersect the circle, circumscribing it at the points P and Q, prove that PQ is a diameter of the circle,

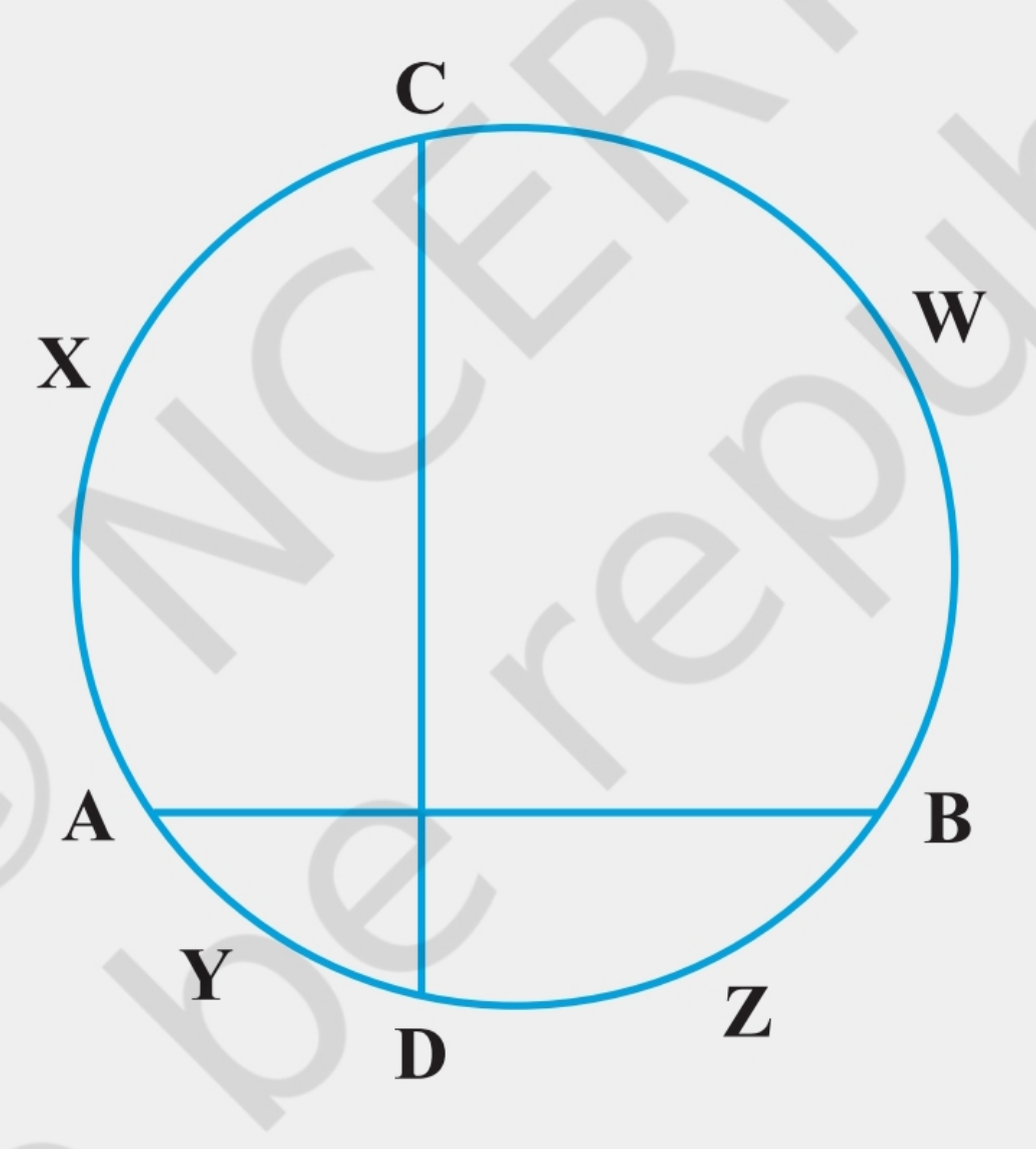

Figure 1

10. A circle has radius $\sqrt{2}$ cm it is divided into two segments by a chord of length $2cm$. prove that the angle subtended by the chord at a point in major segment is 45.

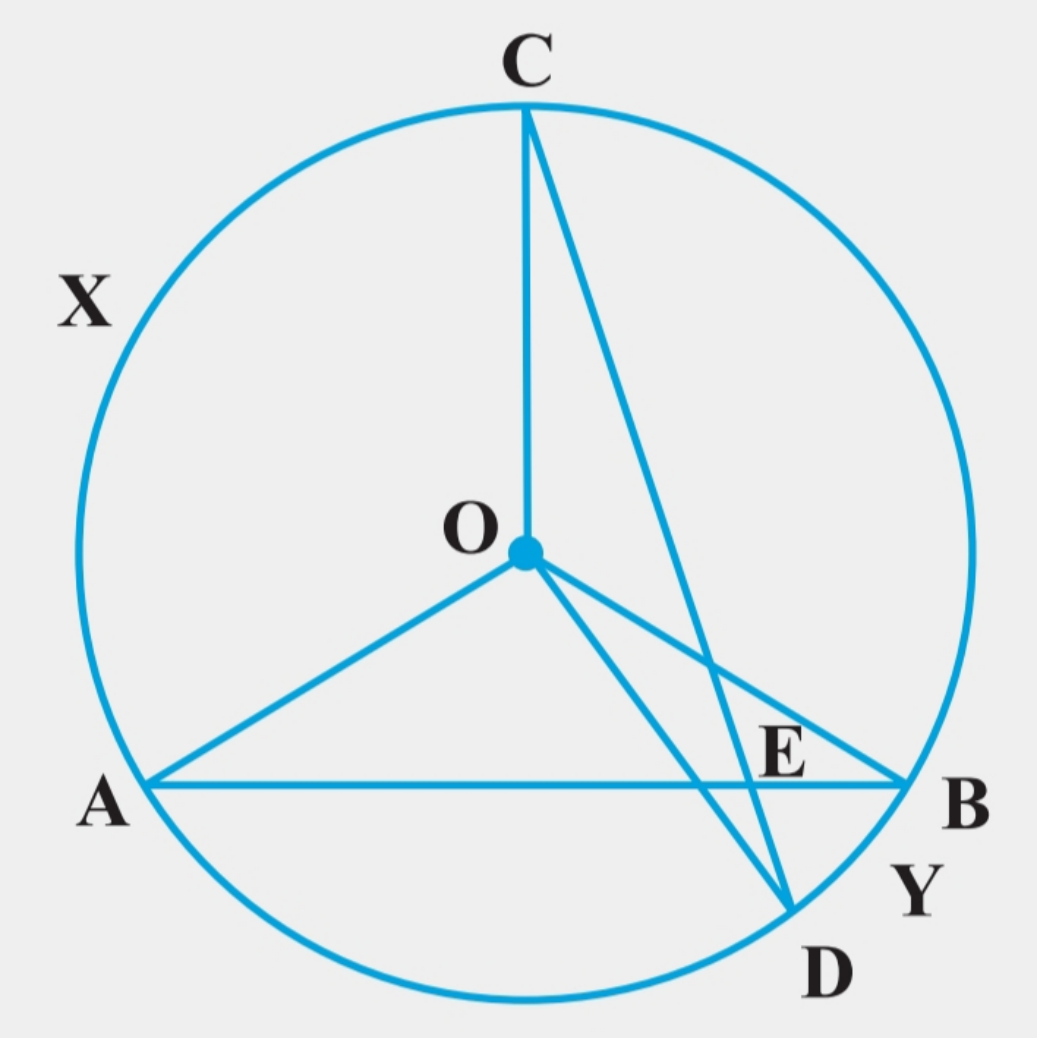

Figure 2

11. Two equal chords AB and CD of a circle when produced intersect at a point P prove that $PB = PD$

12. AB and AC are two chords of a circle of radius r such that $AB = 2AC$. If P and q are the distances of AB and AC from the centre, prove that $4q^2 = p^2 + 3r^2$

13. In Fig 3,O is the centre of the circle, $\angle BCO = 30°$.Find x and y^2

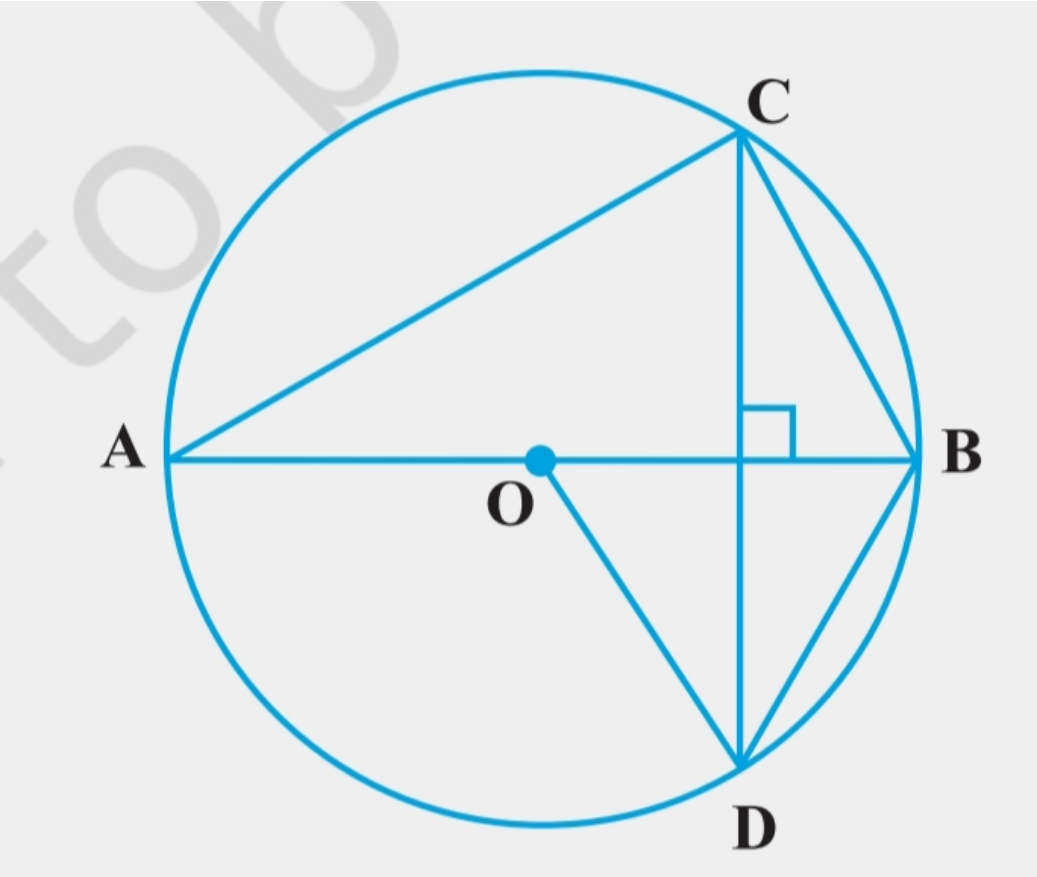

Figure 3

14. In fig 4, O is the centre of the circle $BD = 0D$ and $CD \perp AB$. Find $\angle CAB$

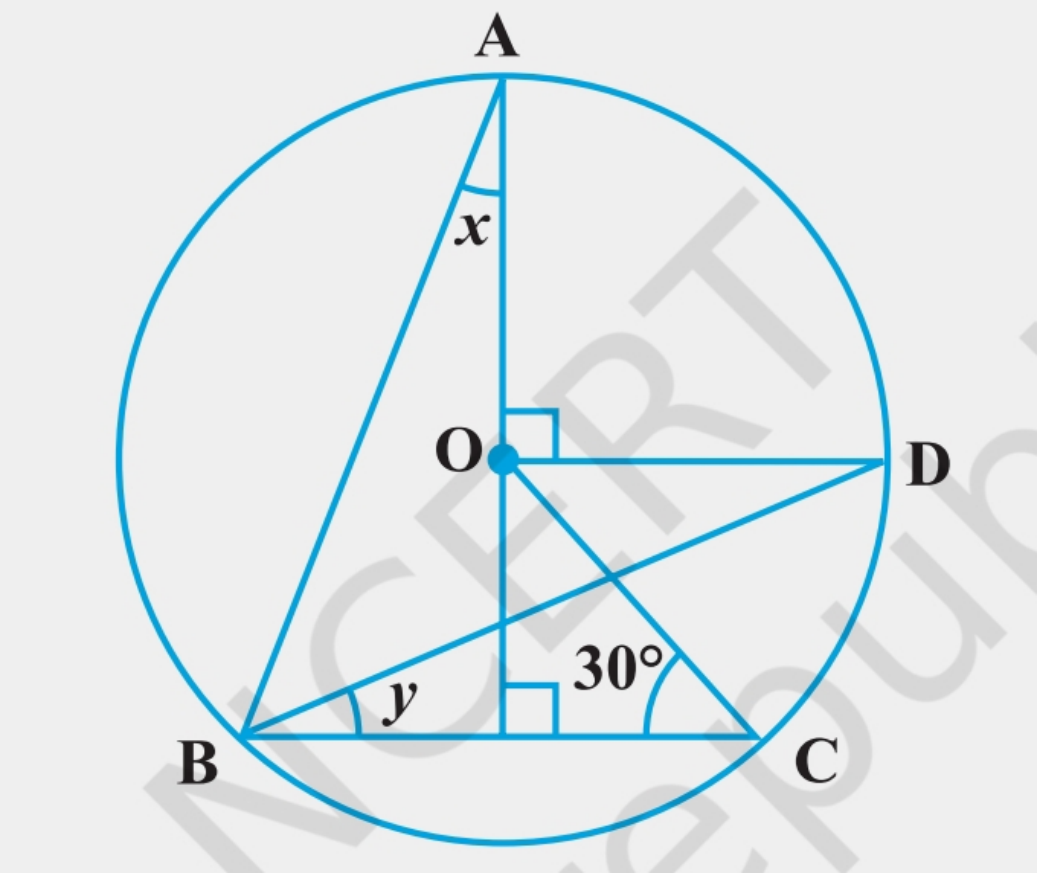

Figure 4