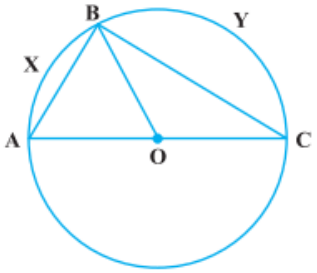
1. In Fig., AOC is a diameter of the circle and arc $AXB = \frac{1}{2}$ arc BYC. Find $\angle BOC$.



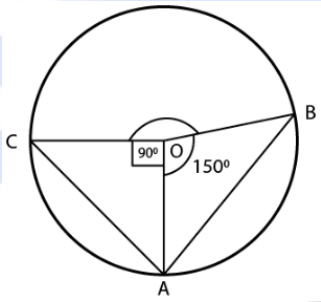
2. Three girls Reshma, Salma and Mandeep are playing a game by standing on a circle of radius. $5m$ drawn in a park. Reshma throws a ball to Salma, Salma to Mandeep, Mandeep to Reshma. If the distance between Reshma and Salma and between Salma and Mandeep is $6m$ each, what is the distance between Reshma and Mandeep?

3. A circular park of radius 20 m is situated in a colony. Three boys Ankur, Syed and David are sitting at equal distance on its boundary each having a toy telephone in his hands to talk to each other. Find the length of the string of each phone.

4. The angle subtended by an arc of a circle at the centre is double the angle subtended by it at any point on the remaining part of the circle.

5. A chord of a circle is equal to the radius of the circle, find the angle subtended by the chord at a point on the minor arc and also at a point on the major arc.

6. In Fig., two chords AB and AC of a circle subtend angles equal to 150° and 90° respectively at the centre. Find $\angle BAC$, if A B and A C lie on the opposite side of the centre.



7. 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°.

8. ΔABC and $\triangle ADC$ are two right triangles with common hypotenuse A C. Prove that $\angle CAD = \angle CBD$.

9. A quadrilateral A B C D is inscribed in a circle such that A B is a diameter and $\angle ADC = 130^\circ$. Find $\angle BAC$.

10. If diagonals of a cyclic quadrilateral are diameters of the circle through the vertices of the quadrilateral, prove that it is a rectangle.

11. If two non–parallel sides of a trapezium are equal, it is cyclic.

OR

An isosceles trapezium is always cyclic.