

CIRCLES.

1. Two chords AB and AC of a circle are equal. Prove that the centre on the circle lies of the angle bisector of $\angle BAC$.
2. In a circle of radius 5cm, AB and AC are two chords such that $AB=AC=6\text{cm}$. Find the length of the chord BC.
3. Two circles of radii 5cm and 3cm intersect at two points and the distance between their center is 4cm. Find the length of the common chord.
4. OD is perpendicular drawn from the center O to a chord AB. If BC is a diameter, show that $AC=2DO$.
5. In a circle with centre O, chord AB and CD intersect inside of the circumference at E. Prove that $\angle AOC + \angle BOD = 2\angle AEC$.
6. The quadrilateral formed by angle bisectors of a cyclic quadrilateral is also cyclic.
7. Prove that diameter subtends right angle on the circle.
8. \angle The bisector of $\angle B$ of an isosceles triangle with $AB=AC$ meets the circumcircle of $\triangle ABC$ at P. If AP and BC produced meet at Q, prove that $CQ=CA$.