

Worksheet: Circles

Odisha State Board · Class 9 · Mathematics · 12 questions · 26 marks

Name: _____

Date: _____

Score: _____ / 26

Q1. A chord of length 16 cm is at perpendicular distance 6 cm from the centre. Find the radius. [1 mark]

Q2. An arc subtends an angle of 100° at the centre. What angle does it subtend at a point on the major arc? [1 mark]

Q3. In a circle, AB is a diameter and P is a point on the circle. What is $\angle APB$? [1 mark]

Q4. In cyclic quadrilateral ABCD, $\angle A = 80^\circ$. Find $\angle C$. [1 mark]

Q5. In a circle, points A, B, C, D lie on the same arc. If $\angle ACB = 40^\circ$, find $\angle ADB$. [1 mark]

Q6. In a circle of radius 13 cm, a chord is at distance 5 cm from the centre. Find the length of the chord. [2 marks]

Q7. Two chords of a circle, $AB = 16$ cm and $CD = 12$ cm. The perpendicular from the centre to AB is 6 cm. Find the perpendicular distance from the centre to CD. (Radius is the same circle.) [2 marks]

Q8. In a circle, an arc subtends an angle of 130° at the centre. Find the angles subtended at any point on (a) the major arc, (b) the minor arc. [3 marks]

Q9. In cyclic quadrilateral ABCD, $A : B = 2 : 3$. If $C = 70^\circ$, find A, B, D. [3 marks]

Q10. Two equal chords AB and CD of a circle intersect at point P inside the circle. Prove that $PA = PD$ (or equivalently, the segments from P to corresponding endpoints are equal). [3 marks]

Q11. Prove Theorem 4 for the case where the centre lies INSIDE $\angle APB$ (where $\angle APB$ is the inscribed angle). [4 marks]

Q12. Prove: if a parallelogram is cyclic, it must be a rectangle. [4 marks]
