CIRCLES

PERPENDICULAR FROM THE CENTRE TO A CHORD

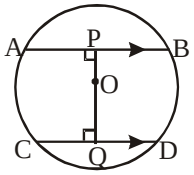
EXERCISE

Q.1 AB and CD are two parallel chords of a circle such that AB = 10 cm and CD = 24 cm. If the chords are on the opposite sides of the centre and the distance between them is 17 cm, find the radius of the circle.

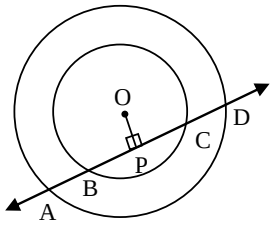
Q.2 If two chords of a circle are equally inclined to the diameter through their point of intersection, prove that the chords are equal.

Q.3 Two equal chords AB and CD of a circle with centre O, when produced meet at a point E. Prove that BE = DE and AE = CE.

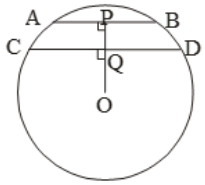
Q.4 O is the centre of the circle with radius 5 cm. OP ⊥ AB, OQ ⊥ CD, AB || CD, AB = 8 cm and CD = 6 cm. Determine PQ.



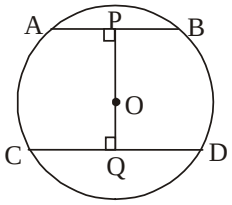
Q.5 If a line intersects two concentric circles (circles with the same centre) with centre O at A, B, C and D, Prove that AB = CD (figure)



Q.6 In Figure O is the centre of the circle of radius 5 cm. OP ⊥ AB, OQ ⊥ CD, AB || CD, AB = 6 cm and CD = 8 cm. Determine PQ.



Q. 7 In Figure O is the centre of the circle of radius 5 cm. OP $\perp$ AB, OQ $\perp$ CD, AB || CD, AB = 6 cm and CD = 8 cm. Determine PQ.



Q.8 In Figure $\overset{\frown}{AB} \cong \overset{\frown}{AC}$ and O is the centre of the circle. Prove that OA is the perpendicular bisector of BC.

Q.9 Two parallel chords of lengths 30 cm and 16 cm are drawn on the opposite sides of the centre of a circle of radius 17 cm. Find the distance between the chords.

Q.10 Two parallel chords of lengths 80 cm and 18 cm are drawn on the same side of the centre of a circle of radius 41 cm. Find the distance between the chords.

Q.11 Two parallel chords AB and CD are 3.9 cm apart and lie on the opposite sides of the centre of a circle. If AB = 1.4 cm and CD = 4 cm, find the radius of the circle.

Q.12 AB and CD are two parallel chords of lengths 8 cm and 6 cm respectively. If they are 1 cm apart and lie on the same side of the centre of the circle, find the radius of the circle.

ANSWER KEY

1. the radius of the circle is 13 cm.

4. PQ = 7 cm.

6. 1 cm

7. 7 cm

9. 23 cm

10. 31 cm

11. 2.5 cm

12. 5 cm