

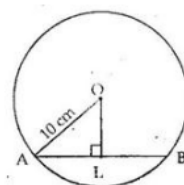


Exercise 11A

Question 1:

Let AB be a chord of the given circle with centre O and radius 10 cm. Then, OA = 10 cm and AB = 16 cm. From O, draw OL ⊥ AB. We know that the perpendicular from the centre of a circle to a chord bisects the chord.

$$\begin{aligned}\therefore AL &= \frac{1}{2} \times AB \\ &= \left(\frac{1}{2} \times 16\right) \text{ cm} = 8 \text{ cm}\end{aligned}$$



From right angled $\triangle OLA$, we have

$$\begin{aligned}OA^2 &= OL^2 + AL^2 \\ \Rightarrow OL^2 &= OA^2 - AL^2 \\ &= 10^2 - 8^2 \\ &= 100 - 64 = 36 \\ \therefore OL &= \sqrt{36} = 6 \text{ cm}\end{aligned}$$

\therefore The distance of the chord from the centre is 6 cm.

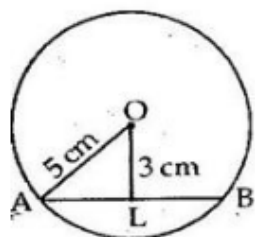
Question 2:

Let AB be the chord of the given circle with centre O and radius 5 cm.

From O, draw OL ⊥ AB

Then, OA = 5 cm and OL = 3 cm [given]

We know that the perpendicular from the centre of a circle to a chord bisects the chord.



Now, in right angled $\triangle OLA$, we have

$$\begin{aligned}OA^2 &= AL^2 + OL^2 \\ \Rightarrow AL^2 &= OA^2 - OL^2 \\ \Rightarrow AL^2 &= 5^2 - 3^2 \\ &= 25 - 9 = 16 \\ \therefore AL &= \sqrt{16} = 4 \text{ cm} \\ \text{So, } AB &= 2 AL \\ &= (2 \times 4) \text{ cm} = 8 \text{ cm}\end{aligned}$$

\therefore the length of the chord is 8 cm.

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