

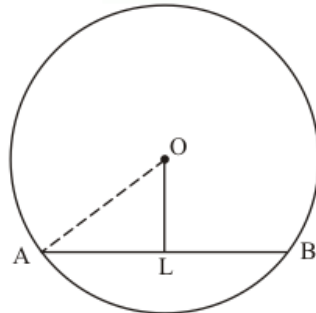


Circles Ex 16.2 Q1

Answer :

Let AB be a chord of a circle with centre O and radius 8 cm such that $AB = 12$ cm

We draw $OL \perp AB$ and join OA .



Since, the perpendicular from the centre of a circle to a chord bisects the chord.

$$\begin{aligned} AL &= LB = \frac{1}{2} \times AB \\ &= \frac{1}{2} \times 12 \\ &= 6 \end{aligned}$$

Now in $\triangle OAL$ we have

$$\begin{aligned} OL^2 &= OA^2 - AL^2 \\ &= 8^2 - 6^2 \\ &= 64 - 36 \\ &= 28 \end{aligned}$$

$$\Rightarrow OL = \sqrt{28} = 5.291$$

Hence the distance of chord from the centre 5.291cm .

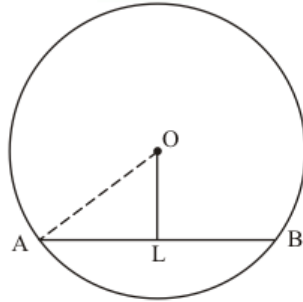
Circles Ex 16.2 Q2

Answer :

Given that $OA = 10$ cm and $OL = 5$ cm, we have to find the length of chord AB .

Let AB be a chord of a circle with centre O and radius 10 cm such that $AO = 10$ cm

We draw $OL \perp AB$ and join OA .



Since, the perpendiculars from the centre of a circle to a chord bisect the chord.

Now in $\triangle OAL$ we have

$$\begin{aligned}AL^2 &= OA^2 - OL^2 \\&= 10^2 - 5^2 \\&= 100 - 25 \\&= 75\end{aligned}$$

$$\begin{aligned}\Rightarrow AL &= \sqrt{75} \\&= 8.66\end{aligned}$$

Hence the length of chord

$$\begin{aligned}AB &= 2 \times AL \\&= 2 \times 8.66 \\&= \boxed{17.32\text{cm}}\end{aligned}$$

***** END *****