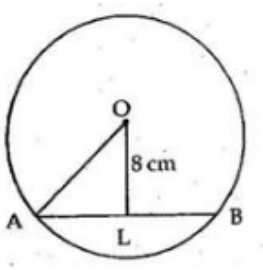
Exercise 11A

Question 3:

Let AB be the chord of the given circle with centre O. Draw $OL \perp AB$.



Then, OL is the distance from the centre to the chord.
So, we have AB = 30 cm and OL = 8 cm

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

$$\therefore \quad AL = \frac{1}{2} \times AB$$

$$= \left(\frac{1}{2} \times 30\right) \text{ cm} = 15 \text{ cm}$$

Now, in right angled ΔOLA we have,

$$OA^2 = OL^2 + AL^2$$

$$= 8^2 + 15^2$$

$$= 64 + 225 = 289$$

$$\therefore \quad OA = \sqrt{289} = 17 \text{ cm}$$

$\therefore$ the radius of the circle is 17 cm.

********** END **********