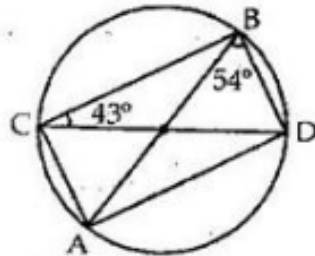




### Exercise 11B

Question 6:



(i) Angles in the same segment of a circle are equal.  
 $\angle ABD$  and  $\angle ACD$  are in the segment  $AD$ .

$$\begin{aligned}\therefore \angle ACD &= \angle ABD \\ &= 54^\circ \quad [\text{Given}]\end{aligned}$$

(ii) Angles in the same segment of a circle are equal.  
 $\angle BAD$  and  $\angle BCD$  are in the segment  $BD$ .

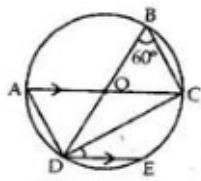
$$\begin{aligned}\therefore \angle BAD &= \angle BCD \\ &= 43^\circ \quad [\text{Given}]\end{aligned}$$

(iii) Consider the  $\triangle ABD$ .

By Angle sum property we have

$$\begin{aligned}\angle BAD + \angle ADB + \angle DBA &= 180^\circ \\ \Rightarrow 43^\circ + \angle ADB + 54^\circ &= 180^\circ \\ \Rightarrow \angle ADB &= 180^\circ - 97^\circ = 83^\circ \\ \Rightarrow \angle BDA &= 83^\circ\end{aligned}$$

Question 7:



Angles in the same segment of a circle are equal.

$\angle CAD$  and  $\angle CBD$  are in the segment  $CD$ .

$$\therefore \angle CAD = \angle CBD = 60^\circ \quad [\text{Given}]$$

We know that an angle in a semi circle is a right angle.

$$\therefore \angle ADC = 90^\circ \quad [\text{angle in a semicircle}]$$

$$\begin{aligned}\therefore \angle ACD &= 180^\circ - (\angle ADC + \angle CAD) \\ &= 180^\circ - (90^\circ + 60^\circ) \\ &= 180^\circ - 150^\circ = 30^\circ\end{aligned}$$

$$\therefore \angle CDE = \angle ACD = 30^\circ \quad \left[ \begin{array}{l} AC \parallel DE \text{ and } CD \text{ is a transversal,} \\ \text{thus alternate angles are equal} \end{array} \right]$$

\*\*\*\*\* END \*\*\*\*\*

