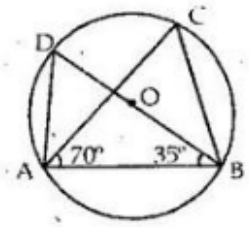
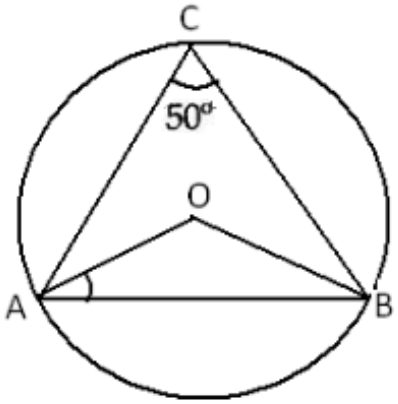
Exercise 11B

Question 4:



It is clear that, BD is the diameter of the circle.
Also we know that, the angle in a semicircle is a right angle.
$\therefore \angle BAD = 90°$
Now consider the triangle, ΔBAD
$\Rightarrow \angle ADB = 180° - (\angle BAD + \angle ABD)$ [Angle sum property]
$\Rightarrow \quad = 180° - (90° + 35°)$ [$\angle BAD = 90°$ and $\angle ABD = 35°$]
$\Rightarrow \quad = 180° - 125°$
$\Rightarrow \angle ADB = 55°$
Angles in the same segment of a circle are equal.
$\therefore \angle ACB = \angle ADB = 55°$
$\therefore \angle ACB = 55°$

Question 5:



The angle subtended by an arc of a circle at the centre is double the angle subtended by the arc at any point on the circumference.

$\therefore \quad \angle AOB = 2\angle ACB$

$= 2 \times 50°$ [Given]

$\Rightarrow \quad \angle AOB = 100°$ ....(1)

Consider the triangle ΔOAB

$OA = OB$ [radius of the circle]

$\angle OAB = \angle OBA$ [base angles of an isosceles triangle are equal]

Thus we have

$\angle OAB = \angle OBA$ ....(2)

By angle sum property, we have

Now $\angle AOB + \angle OAB + \angle OBA = 180°$

$\Rightarrow \quad 100° + 2\angle OAB = 180°$ [from (1) and (2)]

$\Rightarrow \quad 2\angle OAB = 180° - 100° = 80°$

$\Rightarrow \quad \angle OAB = \frac{80°}{2} = 40°$

$\therefore \quad \angle OAB = 40°$

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