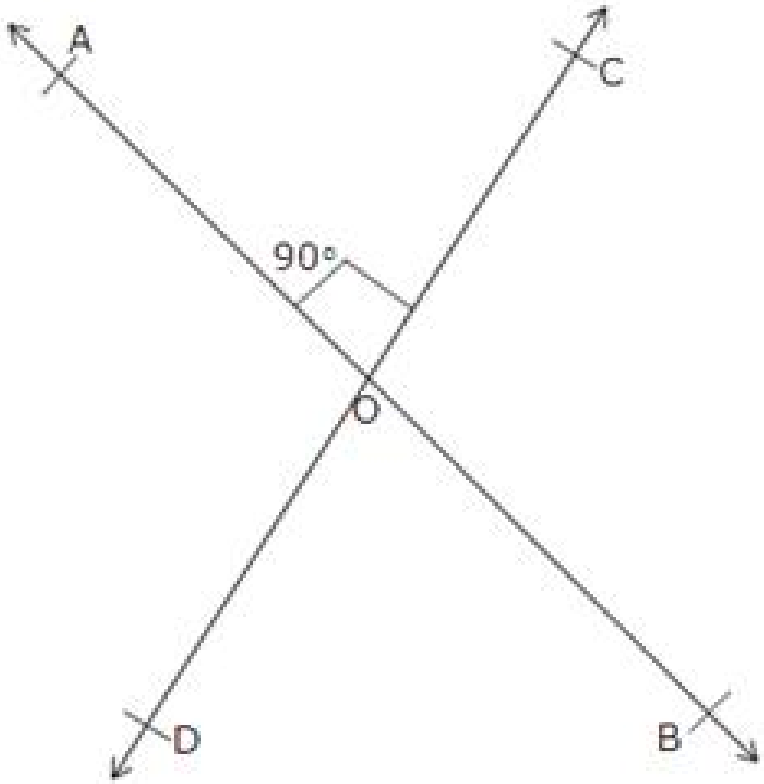
Exercise 4B

Question 10:

Let two straight lines AB and CD intersect at O and let $\angle AOC = 90^{\circ}$.



Now, $\angle AOC = \angle BOD$ [Vertically opposite angles]

$\Rightarrow \angle BOD = 90^{\circ}$

Also, as $\angle AOC$ and $\angle AOD$ form a linear pair.

$\Rightarrow 90^{\circ} + \angle AOD = 180^{\circ}$

$\Rightarrow \angle AOD = 180^{\circ} - 90^{\circ} = 90^{\circ}$

Since, $\angle BOC = \angle AOD$ [Verticallty opposite angles]

$\Rightarrow \angle BOC = 90^{\circ}$

Thus, each of the remaining angles is 90°.

Question 11:

Since, $\angle AOD$ and $\angle BOC$ are vertically opposite angles.

$\therefore \angle AOD = \angle BOC$

Now, $\angle AOD + \angle BOC = 280^{\circ}$ [Given]

$\Rightarrow \angle AOD + \angle AOD = 280^{\circ}$

$\Rightarrow 2\angle AOD = 280^{\circ}$

$\Rightarrow \angle AOD = 280/2 = 140^{\circ}$

$\Rightarrow \angle BOC = \angle AOD = 140^{\circ}$

As, $\angle AOC$ and $\angle AOD$ form a linear pair.

So, $\angle AOC + \angle AOD = 180^{\circ}$

$\Rightarrow \angle AOC + 140^{\circ} = 180^{\circ}$

$\Rightarrow \angle AOC = 180^{\circ} - 140^{\circ} = 40^{\circ}$

Since, $\angle AOC$ and $\angle BOD$ are vertically opposite angles.

$\therefore \angle AOC = \angle BOD$

$\Rightarrow \angle BOD = 40^{\circ}$

$\therefore$ $\angle BOC = 140^{O}$, $\angle AOC = 40^{O}$, $\angle AOD = 140^{O}$ and $\angle BOD = 40^{O}$.

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