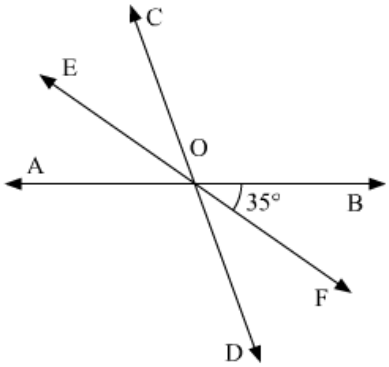
Lines and Angles Ex 8.3 Q10

Answer :

The corresponding figure is as follows:



Three concurrent lines are given as follows:

AB,*CD* and *EF*

Also, OF is the bisector of $\angle BOD$ and it is given that $\angle BOF = 35^0$ .Therefore,

$$\angle FOD = \angle BOF$$

$$\angle FOD = 35^0$$

Also,

$$\angle BOD = \angle BOF + \angle FOD$$

$$\angle BOD = 35^0 + 35^0$$

$$\angle BOD = 70^0 \qquad \text{(i)}$$

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

$$\angle AOC = \angle BOD$$

From (i) equation:

$$\angle AOC = 70^0$$

We know that $\angle AOC$ and $\angle BOC$ form a linear pair.

Thus,

$$\angle AOC + \angle BOC = 180^0$$

$$70^0 + \angle BOC = 180^0$$

$$\angle BOC = 180^0 - 70^0$$

$$\angle BOC = \boxed{110^0}$$

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

Thus,

$$\angle AOC + \angle AOD = 180^0$$

$$70^0 + \angle AOD = 180^0$$

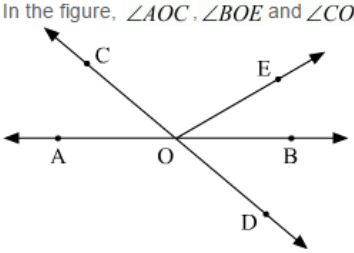
$$\angle AOD = 180^0 - 70^0$$

$$\angle AOD = \boxed{110^0}$$

Lines and Angles Ex 8.3 Q11

Answer :

In the figure, $\angle AOC$, $\angle BOE$ and $\angle COE$ form a linear pair.



Thus,

$\angle AOC + \angle BOE + \angle COE = 180^0$

It is given that $\angle AOC + \angle BOE = 70^0$, on substituting this value, we get:

$70^0 + \angle COE = 180^0$

$\angle COE = 180^0 - 70^0$

$\angle COE = 110^0$

Thus, reflex $\angle COE = 360^0 - 110^0$

Therefore, reflex $\angle COE = \boxed{250^0}$

Since $\angle AOC$ and $\angle BOD$ are vertically opposite angles, thus, these two must be equal.

Therefore,

$\angle AOC = \angle BOD$

$\angle AOC = 40^0$

But, it is given that :

$\angle AOC + \angle BOE = 70^0$

Substituting $\angle AOC = 40^0$ in above equation:

$40^0 + \angle BOE = 70^0$

$\angle BOE = 70^0 - 40^0$

$\angle BOE = \boxed{30^0}$

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