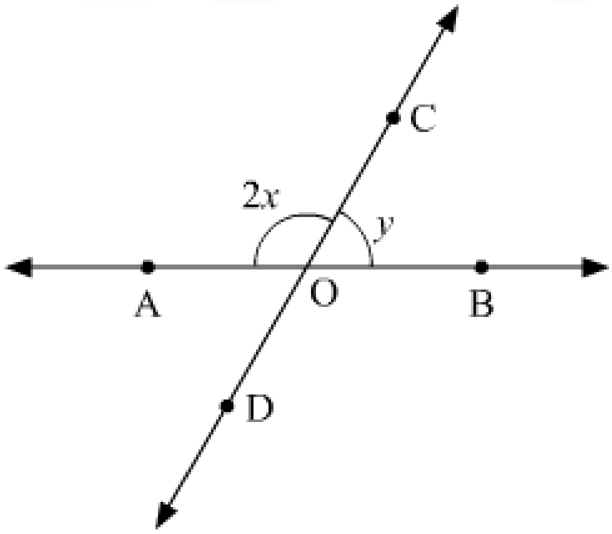
Lines and Angles Ex 8.3 Q8

Answer :

Rays AB and CD intersect at point O.



Therefore, $\angle AOC$ and $\angle BOC$ form a linear pair.

Thus,

$$\angle AOC + \angle BOC = 180^0$$
$$2x + y = 180^0 \qquad (\mathrm{I})$$

(i)

On substituting $x = 60^0$:

$$2x + y = 180^0$$
$$2(60^0) + y = 180^0$$
$$120^0 + y = 180^0$$
$$y = 180^0 - 120^0$$

$$y = \boxed{60^0}$$

(ii)

On substituting $y = 40^0$:

$$2x + y = 180^0$$

$$2x + 40^0 = 180^0$$

$$2x = 180^0 - 40^0$$

$$2x = 140^0$$

$$x = \frac{140^0}{2}$$

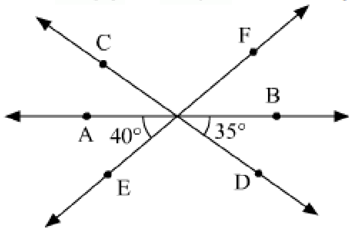
$$x = \boxed{70^0}$$

Lines and Angles Ex 8.3 Q9

Answer :

It is given that AB and CD intersect at a point O

Thus $\angle AOC$ and $\angle BOD$ are vertically opposite angles, therefore, these must be equal.



That is,

$\angle AOC = \angle BOD$

$\angle AOC = \boxed{35^0}$

Similarly, EF and AB intersect at a point O.

Thus $\angle BOF$ and $\angle AOE$ are vertically opposite angles, therefore, these must be equal.

That is,

$\angle BOF = \angle AOE$

$\angle BOF = \boxed{40^0}$

Similarly, EF and CD intersect at a point O.

Thus $\angle COF$ and $\angle EOD$ are vertically opposite angles, therefore, these must be equal.

That is,

$\angle COF = \angle DOE \qquad (I)$

Also, $\angle DOE$, $\angle BOD$ and $\angle AOE$ form a linear pair. Therefore, their sum must be equal to 180^0 .

$$\angle DOE + \angle BOD + \angle AOE = 180^0$$
$$\angle DOE + 35^0 + 40^0 = 180^0$$
$$\angle DOE + 75^0 = 180^0$$
$$\angle DOE = 180^0 - 75^0$$
$$\angle DOE = \boxed{105^0}$$

Putting $\angle DOE = 100^0$ in (I):

$$\angle COF = \boxed{105^0}$$

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