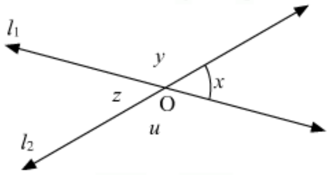
Lines and Angles Ex 8.3 Q1

Answer :

It is given that lines l_1 and l_2 intersect at a point O.



Therefore, (u, z) and (x, y) are the two linear pairs are formed.

Thus,

$$u + z = 180^0$$

Also,

$$x + y = 180^0$$

It is given that $x = 45$, putting this value above, we get:

$$45^0 + y = 180^0$$
$$y = 180^0 - 45^0$$
$$y = \boxed{135^0}$$

Also we have a two pairs of vertically opposite angles in the figure, that is, (u, y) and (x, z).

We know that, if two lines intersect, then the vertically opposite angles are equal.

Thus,

$$u = y$$

$$u = \boxed{135^0}$$

And

$$z = x$$

$$z = \boxed{45^0}$$

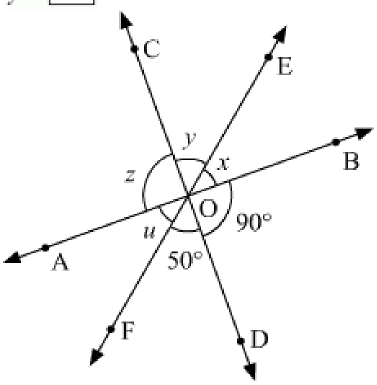
Lines and Angles Ex 8.3 Q2

Answer :

It is given that the lines AB, CD and EF intersect at a point.

Therefore, vertically opposite angles should be equal

$y = \boxed{50^0}$



Also, $\angle FOD$, $\angle BOD$ and $\angle BOE$ form a linear pair.

Therefore,

$\angle FOD + \angle BOD + \angle BOE = 180^0$

Substituting $\angle FOD = 50^0$, $\angle BOD = 90^0$ and $\angle BOE = x^0$ in equation above:

$$50^0 + 90^0 + x = 180^0$$
$$140^0 + x = 180^0$$
$$x = 180^0 - 140^0$$
$$x = \boxed{40^0}$$

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

Therefore,

$$\angle AOC = \angle BOD$$

Substituting $\angle AOC = z$, $\angle BOD = 90^0$ in equation above:

$$z = \boxed{90^0}$$

Similarly, $\angle AOF$, $\angle BOE$ are vertically opposite angles.

Therefore,

$$\angle AOF = \angle BOE$$

Substituting $\angle AOF = u$, $\angle BOE = 40^0$ in equation above:

$$u = \boxed{40^0}$$

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