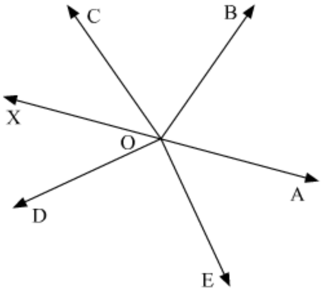
Lines and Angles Ex 8.2 Q4

Answer :

Let us draw AOX a straight line.



$\angle AOE$, $\angle DOE$ and $\angle DOX$ form a linear pair. Thus, their sum should be equal to 180^0.

Or, we can say that:

$\angle AOE + \angle DOE + \angle DOX = 180^0$ (I)

Similarly, $\angle AOB$, $\angle BOC$ and $\angle COX$ form a linear pair. Thus, their sum should be equal to 180^0.

Or, we can say that:

$\angle AOB + \angle BOC + \angle COX = 180^0$ (II)

On adding (I) and (II), we get:

$\angle AOB + \angle BOC + (\angle COX + \angle DOX) + \angle AOE + \angle DOE = 180^0 + 180^0$

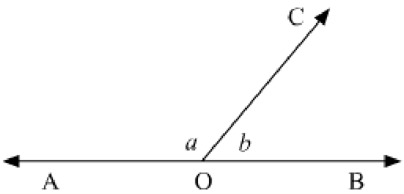
$\boxed{\angle AOB + \angle BOC + \angle COD + \angle AOE + \angle DOE = 360^0}$

Hence proved.

Lines and Angles Ex 8.2 Q5

Answer :

In the figure given below, it is given that $\angle AOC$ and $\angle BOC$ forms a linear pair.



Thus, the sum of $\angle AOC$ and $\angle BOC$ should be equal to 180^0.

Or, we can say that:

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

From the figure above, $\angle AOC = a$ and $\angle BOC = b$

Therefore,

$a + b = 180$

$a = 180 - b \qquad \text{(i)}$

It is given that:

$a - 2b = 30$

$a = 30 + 2b \qquad \text{(ii)}$

On comparing (i) and (ii), we get:

$180 - b = 30 + 2b$

$$-b-2b=30-180$$
$$-3b=-150$$
$$b=\frac{-150}{-3}$$
$$b=\boxed{50}$$

Putting $b=50$ in (i), we get :

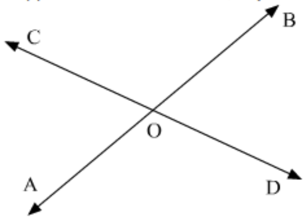
$$a=180-b$$
$$a=180-50$$
$$a=\boxed{130}$$

Hence, the values for a and b are $\boxed{130}$ and $\boxed{50}$ respectively.

Lines and Angles Ex 8.2 Q6

Answer :

Suppose we have two lines, say AB and CD intersect at a point, O as shown in the figure below:



Then there are 4 pairs of adjacent angles formed, namely:

$\angle AOC$ and $\angle BOC$
$\angle BOC$ and $\angle DOB$
$\angle AOC$ and $\angle AOD$
$\angle DOB$ and $\angle AOD$

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