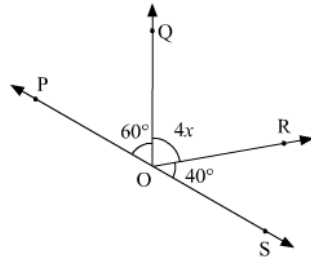




Lines and Angles Ex 8.2 Q10

Answer :

The figure is given as follows:



It is given that POS is a line.

Therefore, $\angle POQ$, $\angle ROS$ and $\angle QOR$ form a linear pair. Thus, their sum must be equal to 180° .

$$\angle POQ + \angle ROS + \angle QOR = 180^\circ$$

It is given that $\angle POQ = 60^\circ$, $\angle ROQ = 4x$ and $\angle SOR = 40^\circ$. Therefore, we get:

$$\begin{array}{rclcl} 600 + 4x + 400 & = & 1800 & & 4x + 1000 = 1800 \\ 1000 & & & & 4x = 1800 - 1000 \\ & & & & 4x = 800 \\ & & & & x = 200 \end{array}$$

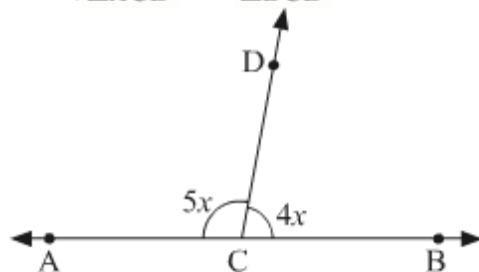
Hence, the required value of x is 20° .

Lines and Angles Ex 8.2 Q11

Answer :

It is given that ACB is a line in the figure given below.

Thus, $\angle ACD$ and $\angle BCD$ form a linear pair.



Therefore, their sum must be equal to 180° .

Or, we can say that

$$\angle ACD + \angle BCD = 180^\circ$$

Also, $\angle ACD = 4x$ and $\angle BCD = 5x$. This further simplifies to :

$$4x + 5x = 180$$

$$9x = 180$$

$$x = \frac{180}{9}$$

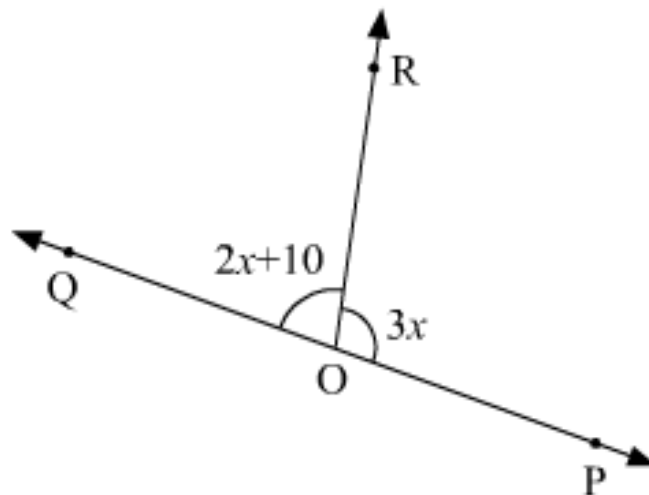
$$x = 20$$

Hence, the value of x is 20° .

Lines and Angles Ex 8.2 Q12

Answer :

Here we have POQ as a line



So, $\angle POR$ and $\angle QOR$ form a linear pair.

Therefore, their sum must be equal to 180° .

Or, we can say that

$$\angle POR + \angle QOR = 180^\circ$$

$$\angle POR + \angle QOR = 180^\circ$$

It is given that $\angle POR = (3x)^\circ$ and $\angle QOR = (2x+10)^\circ$. On substituting these values above, we get :

$$3x + (2x+10) = 180$$

$$3x + 2x + 10 = 180$$

$$5x + 10 = 180$$

$$5x = 180 - 10$$

$$5x = 170$$

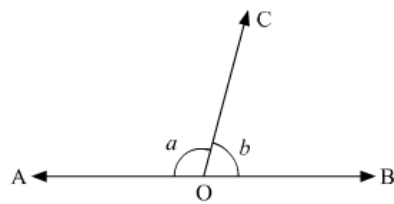
$$x = \frac{170}{5}$$

$$x = \boxed{34}$$

Hence, the value of x is 34° .

Answer :

It is given that in the figure given below; a is greater than b by one-third of a right angle.



Or we can say that, the difference between a and b is $\frac{1}{3}(90^\circ)$.

That is;

$$a - b = \frac{1}{3}(90^\circ)$$

$$a - b = 30^\circ \quad (i)$$

Also a and b form a linear pair. Therefore, their sum must be equal to 180° .

We can say that:

$$a + b = 180^\circ \quad (ii)$$

***** END *****