Lines and Angles Ex 8.1 Q4

Answer :

Let the measure of the required angle be $x°$.

Thus its complement becomes $(90 - x)^0$

According to the statement, the required angle is 30 more than half of its complementary angle that is; the required angle x becomes,

$$30 + \left(\frac{90 - x}{2} \right).$$

Thus

$$x = 30 + \left(\frac{90 - x}{2} \right)$$

$$x = \frac{60 + 90 - x}{2}$$

$$x = \frac{150 - x}{2}$$

Taking 2 on left hand side of the equation, we get

$$2x = 150 - x$$

$$2x + x = 150$$

$$3x = 150$$

$$x = \boxed{50}$$

Hence, the required angle measures 50^0.

Lines and Angles Ex 8.1 Q5

Answer :

Let the two angles be $4x$ and $5x$.

Since the angles are given as supplementary, therefore their sum must be equal to 180^0

This can also be written as

$$4x + 5x = 180$$

$$9x = 180$$

Dividing both sides of equation by 9, we get

$$x = 20$$

The two angles become

$$4x = 4(20)$$

$$= \boxed{80}$$

Also,

$$5x = 5(20)$$

$$= \boxed{100}$$

Hence, $\boxed{80^0}$ and $\boxed{100^0}$ are the measure of two supplementary angles.

Lines and Angles Ex 8.1 Q6

Answer :

Let one angle measures x^0. Then, the second angle becomes $(x+48)^0$.

Since the angles are supplementary, therefore their sum must be equal to 180^0.

Thus,

$x+(x+48) = 180^0$

$\quad 2x+48 = 180$

$\qquad 2x = 180-48$

$\qquad 2x = 132$

On dividing both sides of the equation by 2, we get

$x = \dfrac{132}{2}$

$x = \boxed{66}$

Also,

$x+48 = 66+48$

$\qquad = \boxed{114}$

Hence, the required angles measure $\boxed{66^0}$ and $\boxed{114^0}$.

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