



#### Lines and Angles Ex 8.1 Q4

**Answer :**

Let the measure of the required angle be  $x^\circ$ .

Thus its complement becomes  $(90 - x)^\circ$

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  $50^\circ$ .

#### 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  $180^\circ$

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

#### Lines and Angles Ex 8.1 Q6

**Answer :**

Let one angle measures  $x^{\circ}$  . Then, the second angle becomes  $(x + 48)^{\circ}$  .

Since the angles are supplementary, therefore their sum must be equal to  $180^{\circ}$  .

Thus,

$$x + (x + 48) = 180^{\circ}$$

$$2x + 48 = 180$$

$$2x = 180 - 48$$

$$2x = 132$$

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

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

$$x = \boxed{66}$$

Also,

$$x + 48 = 66 + 48$$

$$= \boxed{114}$$

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

\*\*\*\*\* END \*\*\*\*\*