

Exercise 4A

Question 11:

Let the required angle be x^{O}

Then, its complement is 90° - x° and its supplement is 180° - x°

That is we have,

$$180^{\circ} - x^{\circ} = 4(90^{\circ} - x^{\circ})$$

 $180^{\circ} - x^{\circ} = 360^{\circ} - 4x^{\circ}$
 $4x^{\circ} - x^{\circ} = 360^{\circ} - 180^{\circ}$
 $3x = 180$
 $x = \frac{180}{3} = 60^{\circ}$

 \therefore The required angle is 60° .

Question 12:

Let the required angle be x^o

Then, its complement is 90° - x° and its supplement is 180° - x°

$$90^{\circ} - x^{\circ} = \frac{1}{3} \left(180^{\circ} - x^{\circ} \right)$$

$$90 - x = 60 - \frac{1}{3} \times$$

$$\Rightarrow \qquad \times -\frac{1}{3} \times = 90 - 60$$

$$\Rightarrow \qquad \frac{2}{3} \times = 30$$

$$\Rightarrow \qquad \times = \frac{30 \times 3}{2} = 45$$

 \therefore The required angle is 45°.

Question 13:

Let the two required angles be x^0 and 180° - x° .

$$\frac{x^{\circ}}{180^{\circ}-x^{\circ}}=\frac{3}{2}$$

$$\Rightarrow 2x = 3(180 - x)$$

$$\Rightarrow$$
 2x = 540 - 3x

$$\Rightarrow$$
 3x + 2x = 540

$$\Rightarrow$$
 5x = 540

Thus, the required angles are 108° and 180° - x° = 180° - 108° = 72° .

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