Exercise 4A

Question 11:
Let the required angle be $x°$
Then, its complement is $90° - x°$ and its supplement is $180° - x°$
That is we have,
$$180° - x° = 4(90° - x°)$$
$$180° - x° = 360° - 4x°$$
$$4x° - x° = 360° - 180°$$
$$3x = 180$$
$$x = \frac{180}{3} = 60°$$

∴ The required angle is 60°.

Question 12:
Let the required angle be $x°$
Then, its complement is $90° - x°$ and its supplement is $180° - x°$

$$\therefore \quad 90° - x° = \frac{1}{3}\left(180° - x°\right)$$
$$\Rightarrow \quad 90 - x = 60 - \frac{1}{3}x$$
$$\Rightarrow \quad x - \frac{1}{3}x = 90 - 60$$
$$\Rightarrow \quad \frac{2}{3}x = 30$$
$$\Rightarrow \quad x = \frac{30 \times 3}{2} = 45$$

∴ The required angle is 45°.

Question 13:
Let the two required angles be $x°$ and $180° - x°$.
Then,
$$\frac{x°}{180° - x°} = \frac{3}{2}$$
⇒ 2x = 3(180 - x)
⇒ 2x = 540 - 3x
⇒ 3x + 2x = 540
⇒ 5x = 540
⇒ x = 108
Thus, the required angles are 108° and 180° - x° = 180° - 108° = 72°.

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