



#### Exercise 4C

Question 16:

(i) Lines  $l$  and  $m$  will be parallel if  $3x - 20 = 2x + 10$

[Since, if corresponding angles are equal, lines are parallel]

$$\Rightarrow 3x - 2x = 10 + 20$$

$$\Rightarrow x = 30$$

(ii) Lines will be parallel if  $(3x + 5)^\circ + 4x^\circ = 180^\circ$

[if sum of pairs of consecutive interior angles is  $180^\circ$ , the lines are parallel]

$$\text{So, } (3x + 5) + 4x = 180$$

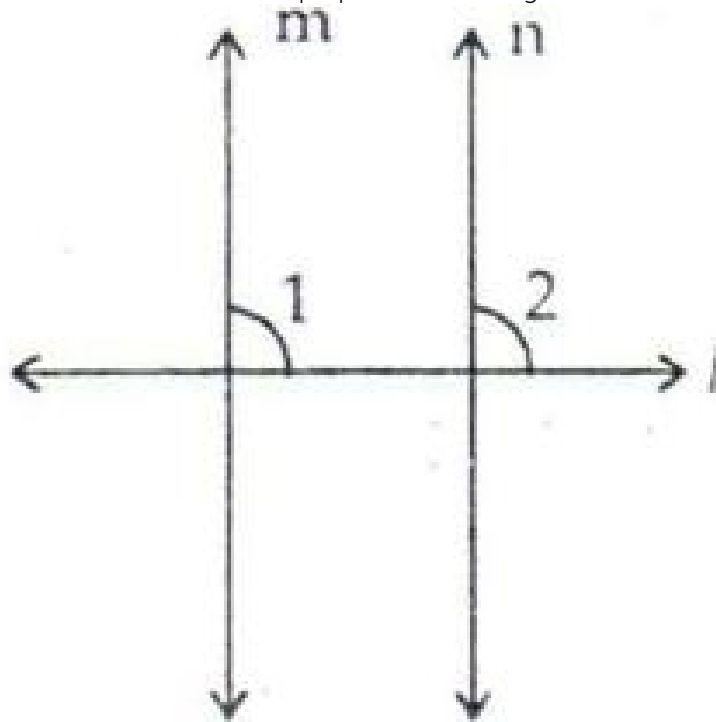
$$\Rightarrow 3x + 5 + 4x = 180$$

$$\Rightarrow 7x = 180 - 5 = 175$$

$$\Rightarrow x = 175/7 = 25$$

Question 17:

Given: Two lines  $m$  and  $n$  are perpendicular to a given line  $l$ .



To Prove:  $m \parallel n$

Proof : Since  $m \perp l$

$$\text{So, } \angle 1 = 90^\circ$$

Again, since  $n \perp l$

$$\angle 2 = 90^\circ$$

$$\therefore \angle 1 = \angle 2 = 90^\circ$$

But  $\angle 1$  and  $\angle 2$  are the corresponding angles made by the transversal  $l$  with lines  $m$  and  $n$  and they are proved to be equal.

Thus,  $m \parallel n$ .

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