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°, the lines are parallel]
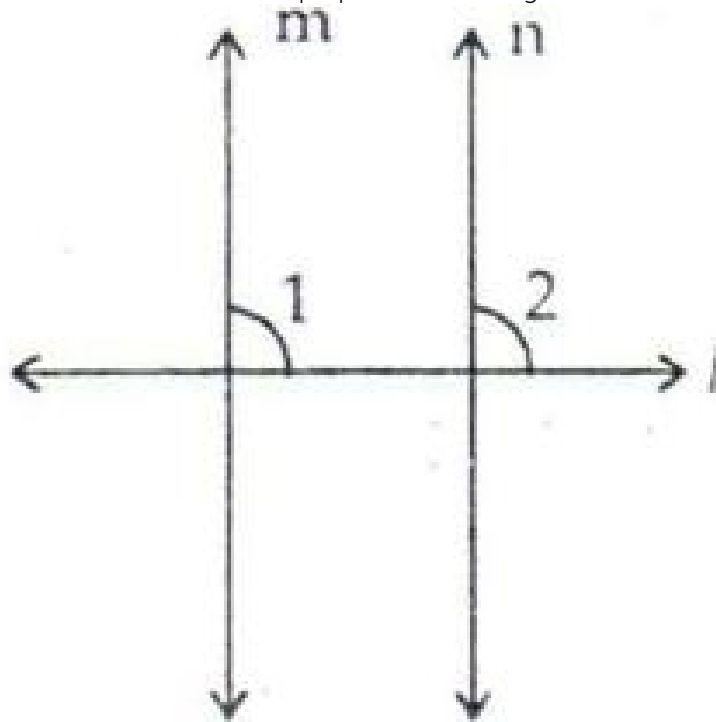So, $(3x + 5) + 4x = 180$
$\Rightarrow 3x + 5 + 4x = 180$
$\Rightarrow 7x = 180 - 5 = 175$
$\Rightarrow x = 175/7 = 25$

Question 17:
Given: Two lines m and n are perpendicular to a given line l.

To Prove: m ∥ n
Proof : Since m ⊥ l
So, $\angle 1 = 90^\circ$
Again, since n ⊥ l
$\angle 2 = 90^\circ$
∴ $\angle 1 = \angle 2 = 90^\circ$
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 ∥ n.

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