

Lines and angles Ex 14.2 Q21

Answer:

(i)
$$\angle \text{LMQ} = \angle \text{ALY}$$
 (Corresponding angles) $\therefore \angle \text{MLY} + \angle \text{ALY} = 180^{\circ}$ (Linear pair) $\Rightarrow 2\angle \text{ALY} + \angle \text{ALY} = 180^{\circ}$ $\Rightarrow 3\angle \text{ALY} = 180^{\circ}$ $\Rightarrow 3\angle \text{ALY} = 180^{\circ}$ $\Rightarrow \angle \text{ALY} = \frac{180^{\circ}}{3} = 60^{\circ}$ $\therefore \angle \text{LMQ} = 60^{\circ}$

(ii) $\angle \text{XLM} = \angle \text{LMQ}$ (Alternate interior angles) $\Rightarrow (2x - 10)^{\circ} = (x + 30)^{\circ}$ $\Rightarrow 2x - x = 30^{\circ} + 10^{\circ}$ $\Rightarrow x = 40^{\circ}$

(iii) $\angle \text{ALX} = \angle \text{LMP}$ (Corresponding angles) $\angle \text{ALX} + \angle \text{XLM} = 180^{\circ}$ (Linear pair) $\angle \text{XLM} = \angle \text{LMP}$ (Given) $\therefore \angle \text{LMP} + \angle \text{LMP} = 180^{\circ}$ $\Rightarrow 2\angle \text{LMP} = 180^{\circ}$ $\Rightarrow 2\angle \text{LMP} = 180^{\circ}$ $\Rightarrow \angle \text{LMP} = \frac{180^{\circ}}{2} = 90^{\circ}$ $\angle \text{XLM} = \angle \text{LMP} = 90^{\circ}$ $\angle \text{ALY} = \angle \text{XLM}$ (Vertically opposite angles) $\therefore \angle \text{ALY} = 90^{\circ}$ (iv) $\angle \text{ALY} = \angle \text{LMQ}$ (Corresponding angles) $\therefore (2x - 15)^{\circ} = (x + 40)^{\circ}$ $\Rightarrow 2x - x = 40^{\circ} + 15^{\circ}$ $\Rightarrow x = 55^{\circ}$

Lines and angles Ex 14.2 Q22

Answer:

$$\therefore x = 40^{\circ}$$

$$\angle ACB = \angle EAC$$
 (Alternate interior angles)

$$\therefore y = 55^{\circ}$$

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