



Exercise 14A

Q1

Answer :

Given :  $l \parallel m$

$t$  is a transversal.

$$\angle 5 = 70^\circ$$

$$\angle 5 = \angle 3 = 70^\circ \quad (\text{alternate interior angles})$$

$$\angle 5 + \angle 8 = 180^\circ \quad (\text{linear pair})$$

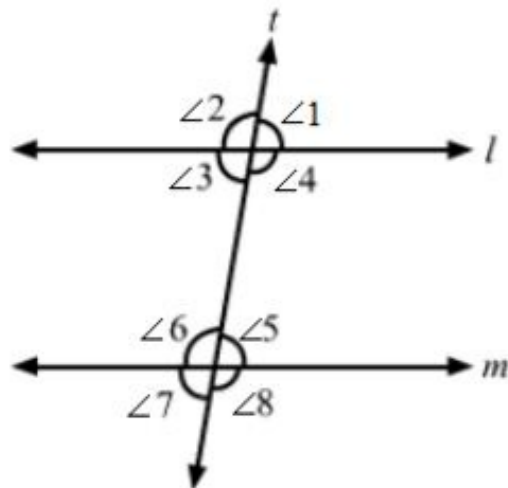
$$\text{or } 70^\circ + \angle 8 = 180^\circ$$

$$\angle 8 = 110^\circ$$

$$\angle 1 = \angle 3 = 70^\circ \quad (\text{vertically opposite angles})$$

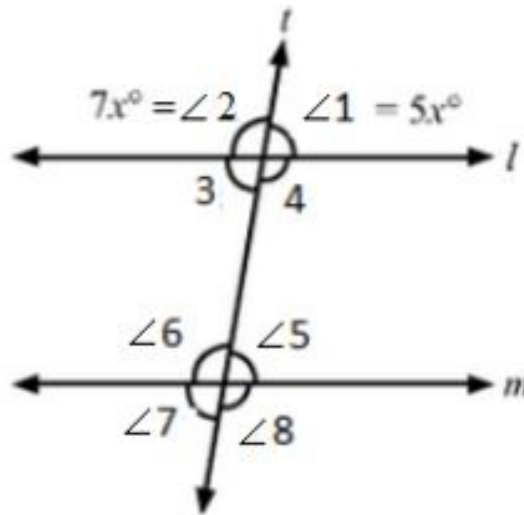
$$\angle 3 + \angle 4 = 180^\circ \quad (\text{linear pair})$$

$$\text{or } \angle 4 = 180 - \angle 3 = 180 - 70 = 110^\circ$$



Q2

Answer :



Given :  $l \parallel m$

$t$  is a transversal.

$$\angle 1 : \angle 2 = 5 : 7$$

Let the angles measure  $5x$  and  $7x$ .

$$\angle 1 + \angle 2 = 180^\circ \quad (\text{linear pair})$$

$$\therefore 5x + 7x = 180$$

$$\text{or } 12x = 180$$

$$\text{or } x = 15$$

$$\therefore \angle 1 = 5x = 5(15) = 75^\circ$$

$$\text{and } \angle 2 = 7x = 7(15) = 105^\circ$$

$$\angle 2 + \angle 3 = 180^\circ \quad (\text{linear pair})$$

$$\angle 3 = 180 - 105 = 75^\circ$$

$\angle 3 + \angle 6 = 180$  (interior angles on the same side of the transversal are supplementary)

$$\begin{aligned}
\angle 6 &= 180 - \angle 3 = 105^\circ \\
\text{and } \angle 6 &= \angle 8 = 105^\circ && \text{(vertically opposite angles)} \\
\therefore \angle 1 &= 75^\circ \\
\angle 2 &= 105^\circ \\
\angle 3 &= 75^\circ \\
\angle 8 &= 105^\circ
\end{aligned}$$

Q3

Answer :

Given :  $l \parallel m$

t is a transversal.

Let :

$$\angle 1 = (2x - 8)^\circ$$

$$\angle 2 = (3x - 7)^\circ$$

We know that the consecutive interior angles are supplementary.

$$\therefore \angle 1 + \angle 2 = 180^\circ$$

$$\text{or } (2x - 8) + (3x - 7) = 180$$

$$\text{or } 5x - 15 = 180$$

$$\text{or } 5x = 195$$

$$\text{or } x = 39$$

$$\angle 1 = (2x - 8) = (2 \times 39 - 8) = 70^\circ$$

$$\angle 2 = (3x - 7) = (3 \times 39 - 7) = 110^\circ$$

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