Home Assignment

Ex - 14 (A)

(23) In this figure,

$5x + x + 80° + 123° + 85° = 360°$ (Angles at a point)

$\Rightarrow 6x + 80° + 123° + 85° = 360°$

$\Rightarrow 6x + 288° = 360°$

$\Rightarrow 6x = 360° - 288° = 72°$

$\Rightarrow x = \frac{72°}{6} = 12°$

Now, $\angle AOB = 5x = 5 \times 12° = 60°$

and $\angle BOC = x = 12°$

(24) In the figure,

$3\frac{1}{2}y° + 2y° + 2y° + 2\frac{1}{2}y° = 360°$ (Angles at a point)

$\Rightarrow \frac{7}{2}y° + 2y° + 2y° + \frac{5}{2}y° = 360°$

$\Rightarrow \frac{7}{2}y° + \frac{5}{2}y° + 4y° = 360°$

$\Rightarrow \frac{11y^\circ}{2} + 4y^\circ = 360^\circ$

$\Rightarrow 6y^\circ + 4y^\circ = 360^\circ$

$\Rightarrow 10y^\circ = 360^\circ$

$\Rightarrow y = \frac{360^\circ}{10} = 36^\circ$

$\therefore \angle AOB = 3\frac{1}{2}y^\circ = \frac{7}{2}y^\circ = \frac{7}{2} \times 36^\circ$

$= 126^\circ$

$\angle BOC = 2y^\circ = 2 \times 36 = 72^\circ$

$\angle COD = 2y^\circ = 72^\circ$

$\angle DOA = 2\frac{1}{2}y^\circ = \frac{5}{2}y^\circ$

$= \frac{5}{2} \times 36^\circ = 90^\circ$

(25) AB, CD, EF are intersecting each other at O.
and $\angle DOF = x^\circ$, $\angle AOC = y^\circ$
and $\angle BOE = z^\circ$,
But $\angle DOB = \angle AOC = y^\circ$
(Vertically opposite angles)
Similarly, $\angle COE = \angle DOF = x^\circ$
and $\angle AOF = \angle BOE = z^\circ$
$\because$ (D) is a straight line
$\therefore \angle COE + \angle BOE + \angle DOB = 180^\circ$
$\Rightarrow x^\circ + z^\circ + y^\circ = 180^\circ$
$\Rightarrow x^\circ + y^\circ + z^\circ = 180^\circ$

(i) If $y = 45^\circ$ and $z = 90^\circ$, then
$\Rightarrow x^\circ + 45^\circ + 90^\circ = 180^\circ$
$\Rightarrow x^\circ + 135^\circ = 180^\circ$

$\therefore x° = 180° - 135° = 45°$

(ii) If $x = 3a, y = 5x, z = 6x$,
then $x + y + z = 180°$
$\Rightarrow x + 5x + 6x = 180° \Rightarrow 12x = 180°$

$$x = \frac{180°}{12} = 15°$$

But $x = 3a$
$\therefore 3a = 15 \Rightarrow a = \frac{15°}{3} = 5°$

Hence $a = 5°$