23. In the given figure, find $\angle AOB$ and $\angle BOC$.

Ans:-

Q3. AQ, Sum of all angles $= 360°$

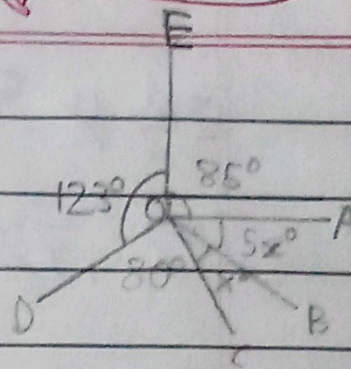$\Rightarrow 123 + 85 + 80 + 5x + x = 360$

$\Rightarrow 208 + 80 + 5x + x = 360$

$\Rightarrow 288 + 6x = 360$

$\Rightarrow 6x = 360 - 288$

$\Rightarrow 6x = 72$

$\Rightarrow x = \dfrac{72}{6} = 12$

$\therefore \angle BOC = x = 12°$ and $\angle AOB = 5x = 12 \times 5 = 60°$

24. Find each angle shown in the figure.

Ans - AQ, Sum of all angles $= 360°$

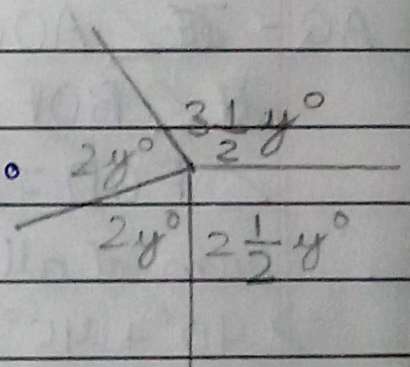$\Rightarrow 3\frac{1}{2}y + 2\frac{1}{2}y + 2y + 2y = 360°$

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

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

$\Rightarrow \dfrac{20}{2}y = 360° \Rightarrow 10y = 360°$

$\Rightarrow y = \dfrac{360}{10} = 36°$

$\therefore$ The angles are $2y = 36 \times 2 = 72°$, $2y = 36 \times 2$
$= 72°$, $3\frac{1}{2}y = \frac{7}{2}y = \frac{7}{2} \times \overset{18}{36} = 126°$ and

$$2\frac{1}{2}y = \frac{5}{2}y = \frac{5}{2} \times \overset{18}{36} = 90°$$

$$= 72°, 72°, 126° \text{ and } 90°$$

25. AB, CD and EF are three lines intersecting at the same point.
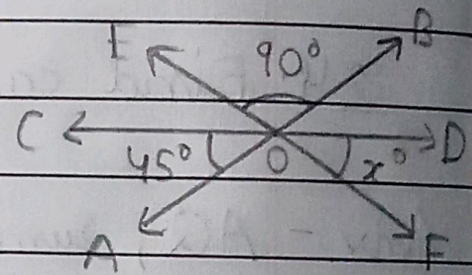
(i) Find x, if $y = 45°$ and $Z = 90°$

(ii) Find a, if $x = 3a$, $y = 5x$ and $z = 6x$

Ans-(i) Let the centre be O

$AQ - \cancel{x°} \angle AOC = \angle DOB = 45°$

$\cancel{x°} \angle BOF = \angle FOA = 90°$

$\angle FOD = \angle COE = x°$

∴ Sum of all angles $= 360°$

$\Rightarrow 90° + 45° + \cancel{x} 45° + 90° + x° + x° \cancel{x} = 360°$

$\Rightarrow 90° + 90° + 90° + 2x = 360°$

$\Rightarrow 270° + 2x = 360°$

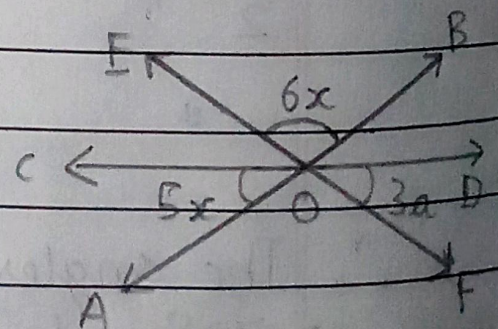$\Rightarrow 2x = 360 - 270 = 90° \Rightarrow x = \dfrac{\overset{45}{90}}{2} = 45°$

(ii) Let the centre be O

$AQ - \angle AOC = \angle DOB = 5x$

$\angle BOE = \angle FOA = 6x$

$\angle FOD = \angle COF = 3a$

$x = 3a$

$$\therefore \quad 6x + 5x + 3a + 6x + 5x + 3a = 360°$$
$$\Rightarrow 22x + 6a = 360°$$
$$\Rightarrow 66a + 6a = 360°$$
$$\Rightarrow 72a = 360° \Rightarrow a = \frac{360}{72}^{5} = 5°$$