

$$23) x^\circ + 5x^\circ + 85^\circ + 123^\circ + 80^\circ = 360^\circ$$

Complete angle

$$6x^\circ + 288^\circ = 360^\circ$$

$$6x^\circ = 360^\circ - 288^\circ = 72^\circ$$

$$x = \frac{72}{6} = 12^\circ$$

$$\angle AOB = 5x^\circ = 5 \times 12^\circ = 60^\circ$$

$$\angle BOC = 12^\circ \text{ (Ans)}$$

$$24) 2y + 2y + 3\frac{1}{2}y + 2\frac{1}{2}y = 360^\circ$$

$$= 4y + \frac{7}{2}y + 2\frac{1}{2}y = 360^\circ$$

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

$$y = \frac{360}{10} = 36^\circ \text{ (Ans)}$$

~~AB, CD~~

$$25) \angle AOC + \angle COE + \angle EOB = 180^\circ$$

$$y^\circ + \angle DOF + z^\circ = 180^\circ \quad [\text{linear pair}]$$

$$\left[\begin{aligned} \angle COE &= \angle DOF \quad \text{vertically} \\ &\quad \text{opposite} \end{aligned} \right]$$

$$\Rightarrow 45^\circ + x^\circ + 90^\circ = 180^\circ \quad [\angle DOF = x^\circ]$$

$$= x^\circ + 135^\circ = 180^\circ$$

$$x^\circ = 180^\circ - 135^\circ = 45 \quad (A_3)$$

$$ii) \quad x = 3a, \quad y = 5a, \quad z = 6x$$

$$y^\circ + x^\circ + z^\circ = 180^\circ \quad (\text{linear pair})$$

$$= 5x + 3a + 6x = 180^\circ$$

$$3a + 11x = 180^\circ$$

$$3a + 11(3a) = 180^\circ$$

$$3a + 33a = 180^\circ$$

$$36a = 180^\circ$$

$$a = \frac{180^\circ}{36} = 5^\circ$$