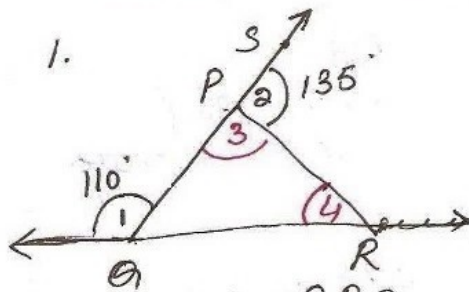


Class IX

Ch. Lines and Angles

Ex 6.3



to find $\angle PRA$

Sol $\angle 2 + \angle 3 = 180^\circ$ (linear pair axiom)

$$135 + \angle 3 = 180^\circ$$

$$\Rightarrow \angle 3 = 180^\circ - 135^\circ = 45^\circ$$

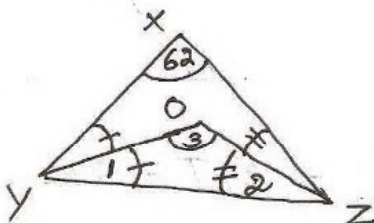
$$\angle 1 = \angle 3 + \angle 4 \text{ (exterior angle prop of } \Delta)$$

$$110^\circ = 45^\circ + \angle 4$$

$$\Rightarrow \angle 4 = 110^\circ - 45^\circ$$

$$\angle PRA = 65^\circ$$

②



to find $\angle OZY, \angle YOZ$

solution

In ΔXYZ

$$\angle X + \angle XYZ + \angle XZY = 180^\circ \text{ (angle sum prop. of } \Delta)$$

$$62^\circ + 54^\circ + \angle XZY = 180^\circ$$

$$\Rightarrow \angle XZY = 180^\circ - 62^\circ - 54^\circ = 64^\circ$$

$$\begin{aligned} \angle 1 &= \frac{1}{2} \angle XYZ \quad [\because YO \text{ bisects } \angle XYZ] \\ &= \frac{1}{2} \times 54 \\ &= 27^\circ \end{aligned}$$

$$\begin{aligned} \angle 2 &= \frac{1}{2} \angle XZY \quad [\because ZO \text{ bisects } \angle XZY] \\ &= \frac{1}{2} \times 64 \\ &= 32^\circ \end{aligned}$$

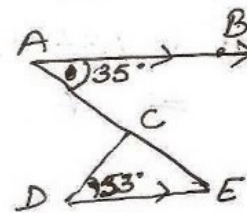
In ΔYOZ

$$\angle 1 + \angle 2 + \angle 3 = 180^\circ \text{ (angle sum prop of } \Delta)$$

$$27^\circ + 32^\circ + \angle 3 = 180^\circ$$

$$\begin{aligned} \angle 3 &= 180^\circ - 59^\circ \\ &= 121^\circ \end{aligned}$$

③



to find $\angle DCE$

Sol $AB \parallel DE$
 $\therefore \angle E = \angle A = 35^\circ$ (alt. int. ls)

In ΔDCE

$$\angle DCE + \angle D + \angle E = 180^\circ \text{ (angle sum prop of } \Delta)$$

$$\angle DCE + 53 + 35 = 180$$

$$\Rightarrow \angle DCE = 180^\circ - 88 = 92^\circ$$