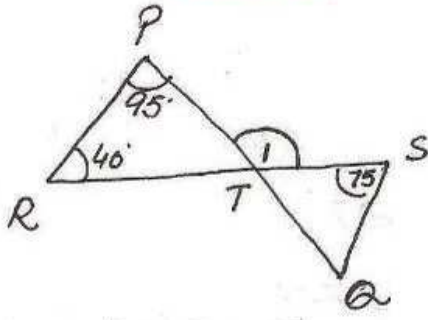


④



to find $\angle STQ$

Sol $\angle 1 = \angle P + \angle R$ (exterior angle prop of Δ)

$$= 95 + 40$$

$$= 135^\circ$$

NCERT Solutions by Dev Anoop (Bathinda)

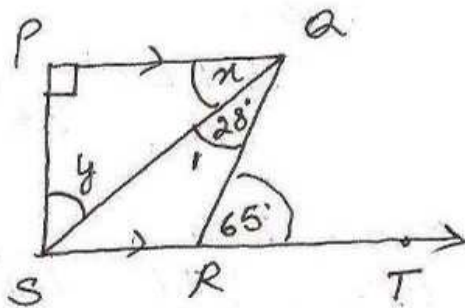
$$\angle 1 = \angle S + \angle Q \quad (\text{do})$$

$$135 = 75 + \angle Q$$

$$\Rightarrow \angle Q = 135 - 75$$

$$= 60^\circ$$

⑤



to find x, y

Sol $PQ \parallel ST$
 $\angle PQR = \angle QRT$ (alternate interior angles)

$$x + 28 = 65$$

$$\Rightarrow x = 65 - 28$$

$$= 37^\circ$$

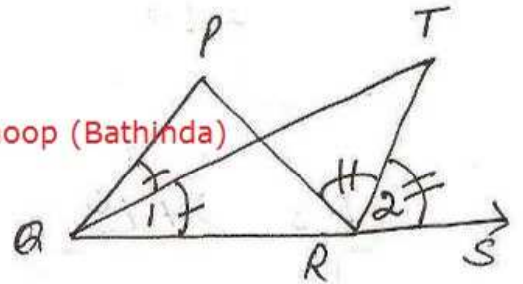
In ΔSPQ
 $\angle P + x + y = 180$ (angle sum prop of Δ)

$$90 + 37 + y = 180$$

$$\Rightarrow y = 180 - 127$$

$$= 53^\circ$$

⑥



to prove $\angle QTR = \frac{1}{2} \angle QPR$
 proof $\angle PRS = \angle P + \angle QAR$ ①
 [exterior \angle prop. of Δ]

$$\angle 2 = \angle T + \angle S \quad (\text{do})$$

$$\times 2$$

$$2\angle 2 = 2\angle T + 2\angle S$$

$$\angle PRS = 2\angle T + \angle QAR \dots \text{②}$$

$\left[\begin{array}{l} \because RT \text{ bisects } \angle PRS \\ \therefore ST \text{ bisects } \angle QAR \end{array} \right.$

From ① and ②

$$\angle P + \angle QAR = 2\angle T + \angle QAR$$

$$\Rightarrow \angle P = 2\angle T$$

$$\Rightarrow \angle QTR = \frac{1}{2} \angle QPR$$