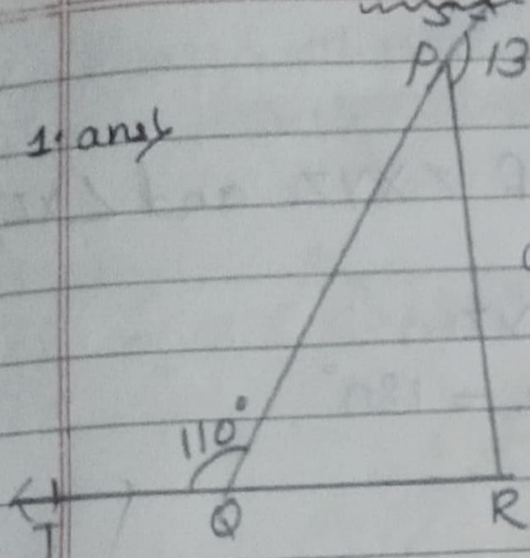
C.W
22.06.21

Ch-6

Ex-6.3



1. ans)

Given, Sides QP and RQ of ΔPQR are produced to point S and T respectivly $\angle SPR = 135°$
$\angle PQT = 110°$
SQ is a line and QR stand on it.

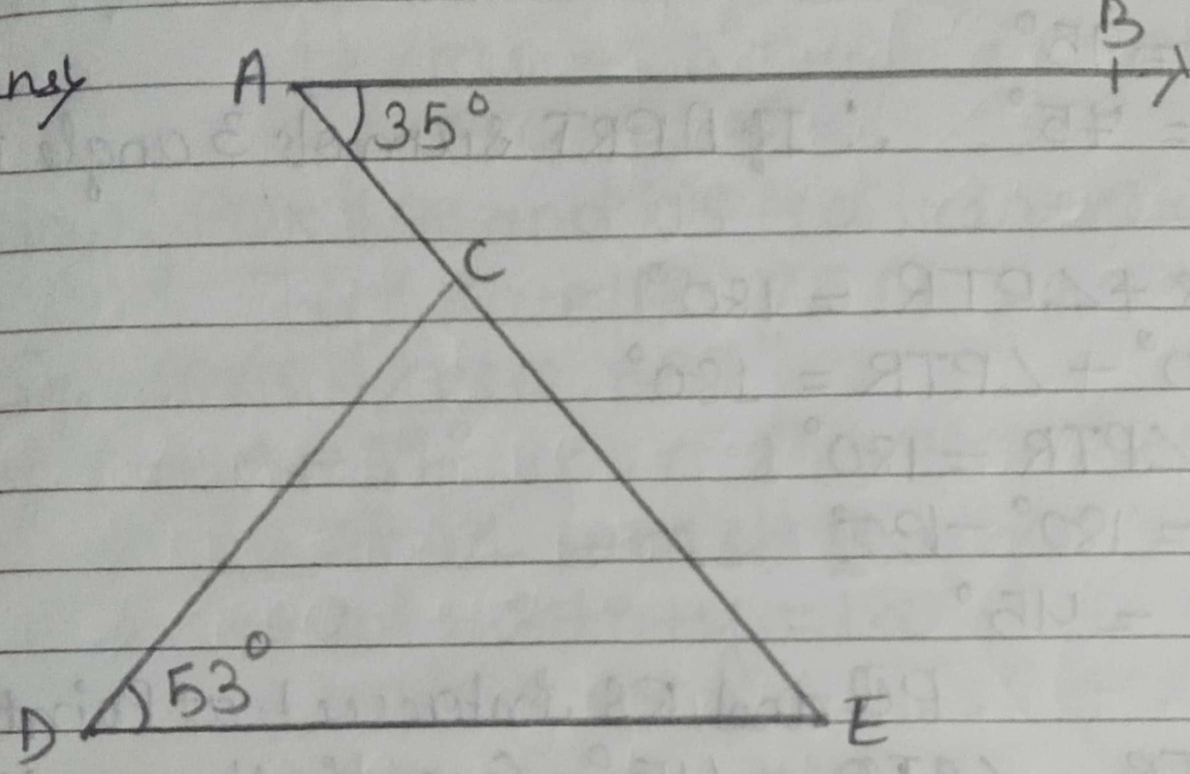
So, $\angle SPR + \angle RPQ = 180°$ (linear pair)
$\Rightarrow RPQ = 180° - 135°$
$\Rightarrow \angle RPQ = 45°$

TR is a line
QS stand on it

So, $\angle TQP + \angle RQP = 180°$ (linear pair)
$\Rightarrow 110° + \angle RQP = 180°$
$\Rightarrow \angle PQR = 180° - 110°$
$\Rightarrow \angle PQR = 70°$

Sum of three angles of $\Delta = 180°$
So, $\angle PQR + \angle QPR + \angle PRQ = 180°$
$\Rightarrow 70° + 45° + \angle PRQ = 180°$
$\Rightarrow 125° + \angle PRQ = 180°$
$\Rightarrow \angle PRQ = 180° - 125°$
$\Rightarrow \angle PRQ = 55°$

3. ans



Given, AB ∥ DE and AE is a transversal

$\angle BAE = \angle AED = 35^\circ$ (alternet interior ang

In $\triangle CDE$ sum of 3 angle traingle $= 180^\circ$

$\angle DCE + \angle CED + \angle CDE = 180^\circ$

$\Rightarrow \angle DCE + 35^\circ + 53^\circ = 180^\circ$

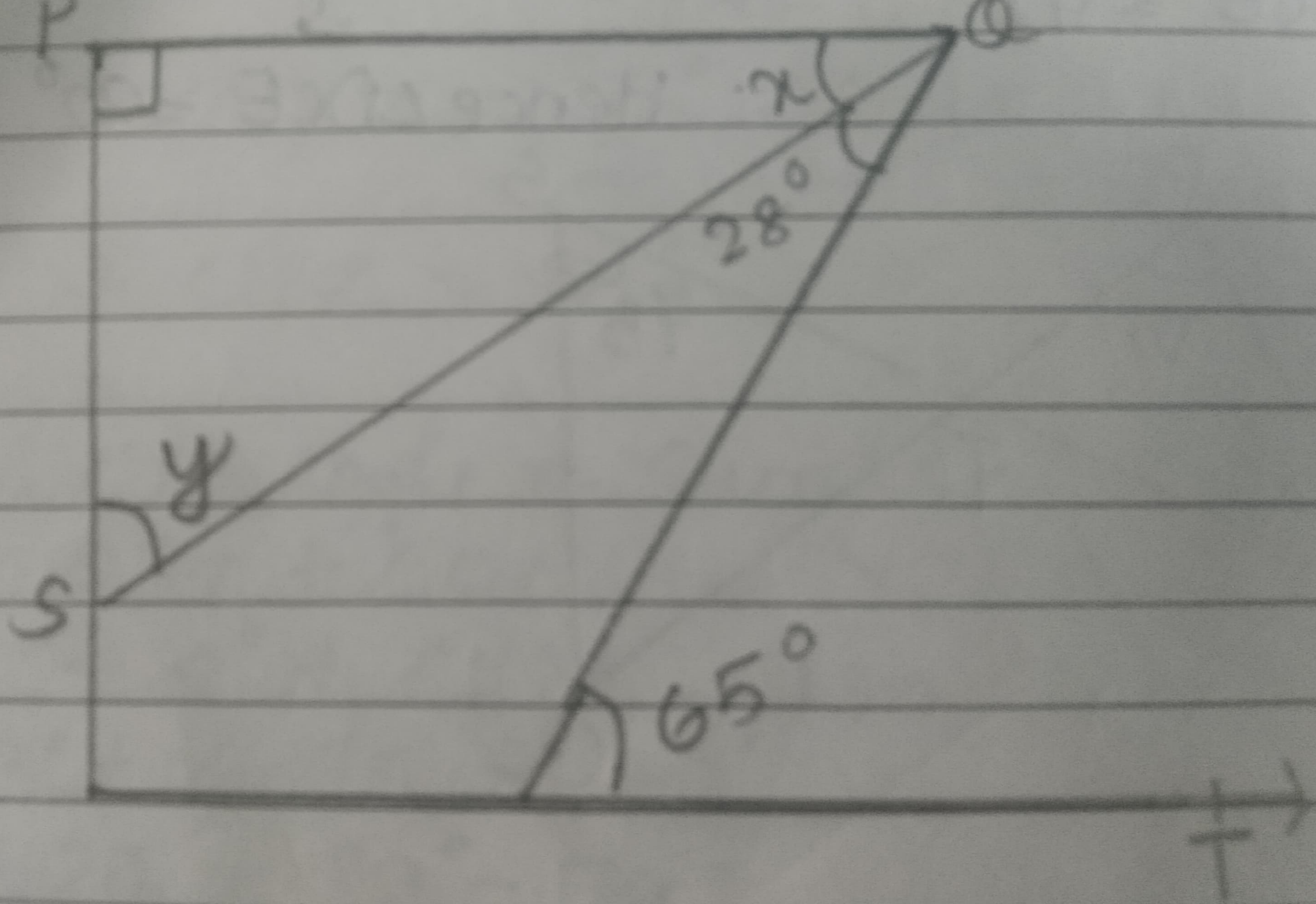
$\Rightarrow \angle DCE + 88^\circ = 180^\circ$

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

$\Rightarrow \angle DCE = 92^\circ$

Hence $\angle DCE = 92^\circ$

5. ans)



Using exterior angle property in ΔSRQ
we have $\angle QRT = \angle SQR + \angle RSQ$.

$\Rightarrow 65^\circ = 28^\circ + \angle RSQ$

$\Rightarrow \angle RSQ = 65^\circ - 28^\circ$

$\Rightarrow \angle RSQ = 37^\circ$

Now, PQR ∥ SR and QS is a transversal intersect at S and Q

So, $\angle PQS = \angle RSQ = 37^\circ$

$\Rightarrow x = 37^\circ$

In Δ sum of 3 angle $\angle = 180^\circ$

$\Rightarrow 90^\circ + 37^\circ + y = 180^\circ$

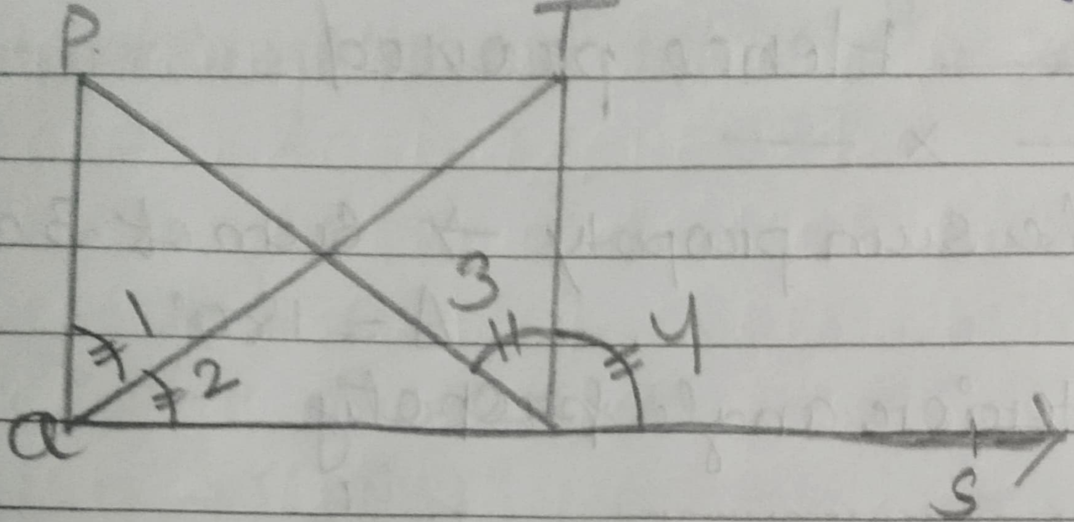
$\Rightarrow 127^\circ + y = 180^\circ$

$\Rightarrow y = 180^\circ - 127^\circ$

$\Rightarrow y = 53^\circ$

Hence, $x = 37^\circ$
$y = 53^\circ$

6. ans)



Let, PQT $= \angle 1$

TQR $= \angle 2$

PRT $= \angle 3$

TRS $= \angle 4$

Given, $\angle 3 = \angle 4$

$\Rightarrow 2\angle 3 = 2\angle 4 = \angle PRS \longrightarrow$ (i)

$\Rightarrow \angle 1 = \angle 2$.

$\Rightarrow 2\angle 1 = 2\angle 2$

$\Rightarrow 2\angle 1 = 2\angle 2 = \angle PQR \longrightarrow$ (ii)

$\angle PRS = \angle P + \angle PQR \longrightarrow$ (iii) (By interior angle property)

Now, from equation (i) we can put $2\angle 3$ OR $2\angle 4$. In place of $\angle PRS$ and also $2\angle 1$ OR $2\angle 2$ in place of $\angle PQR$ in equation (iii)

Hence, by suitable resplacement

$$2\angle 4 = \angle P + 2\angle 2 \rightarrow \text{(iv)}$$

Now, $\triangle TQR$ $\angle 4 = \angle 2 + \angle T \rightarrow$ (v)

(exteriore angle propoty)

putting value of $\angle 4$ in equation iv we get

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

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

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

$$\Rightarrow 2\angle QTR = \angle QPR$$

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

Hence proved

x

Angle sum propoty → Sum of 3 angles of $\triangle = 180^\circ$

exteriore angle propoty