28/06/2021

Ex. 6.3

1) In the given figure, $\angle SPR = 135$ and $\angle PQT = 110$.

$\angle PQT + \angle PQR = 180$

[Linear pair axiom]

$\Rightarrow 110 + \angle PQR = 180$

$\Rightarrow \angle PQR = 180 - 110 = 70$

Also $\angle SPR + \angle QPR = 180$

[Linear pair axiom]

$\Rightarrow 135 + \angle QPR = 180$

$\Rightarrow \angle QPS = 180 - 135 = 45$

Now, in the triangle PQR

$\angle PQR + \angle PRQ + \angle QPR = 180$

[Angle sum property of a triangle]

$\Rightarrow 70 + \angle PRQ + 45 = 180$

$\angle PRQ + 115 = 180$

$\angle PRQ = 180 - 115$

$= 65$

Hence, $\angle PRQ = 65$

2.) Ans: In the given figure

$\angle X = 62$ and $\angle XYZ = 54$

$\angle XYZ + \angle XZY + \angle YXZ = 180$

[Angle sum property of a triangle]

$\Rightarrow 54 + \angle XZY + 62 = 180$

$\angle XZY + 116 = 180$

$\angle XZY = 180 - 116$

$= 64$

$\angle OZX = \frac{1}{2} \times \angle XZY$

$= \frac{1}{2} \times 64 = 32$

Similarly, $\angle OYZ = \frac{1}{2} \times 54 = 27$

Now, in $\triangle OYZ$, we have

$\angle OYZ + \angle OZY + \angle YOZ = 180$

Angle sum property of triangle

$\Rightarrow 27 + 32 + \angle XOZ = 180$

$\Rightarrow \angle XOZ = 180 - 59 = 121$

Hence, $\angle OZY = 32$ and

$\angle XOZ = 121$

6.3

3) Since $AB \parallel DE$ and AE is a transversal

$\angle BAC = \angle CED$

$35^\circ = \angle CED$

$\therefore \angle CED = 35^\circ$

In $\triangle CDE$,

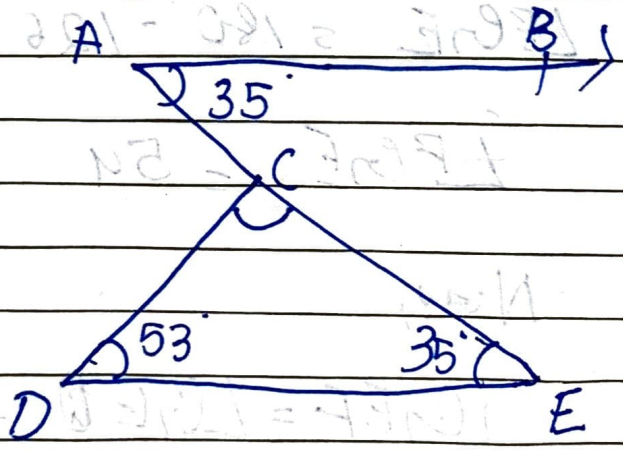
$\angle CDE + \angle CED + \angle DCE = 180^\circ$

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

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

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

$\angle DCE = 92^\circ$



Ex 6.2

4.) It is given that PQ // ST

We draw a line xy // ST

So, xx // PQ, ie. PQ // st // xy

Since PQ // xy & QR is the transversal

So, $\angle PQR + \angle QRK = 180^\circ$

$110^\circ + \angle QRK = 180^\circ$

$\angle QRK = 180^\circ - 110^\circ$

$\angle QRK = 70^\circ$

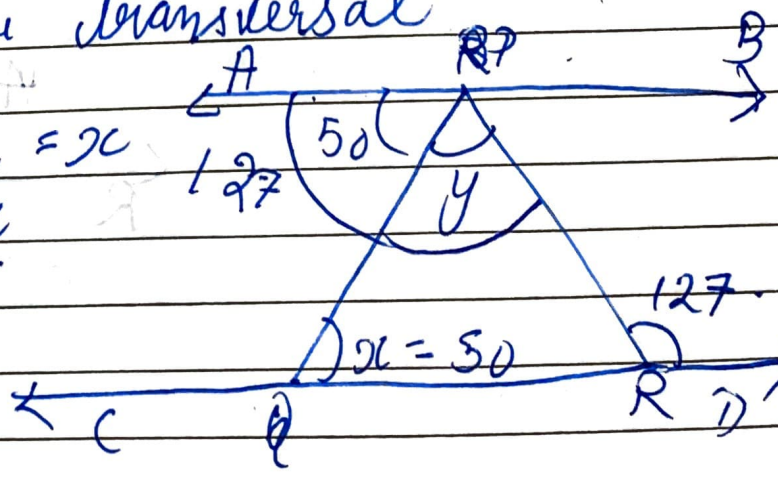
5.) Now, AB // CD

and PQ is the transversal

Hence, $\angle APQ = x$

$50^\circ = x$

$x = 50^\circ$



Similarly

AB // CD

and PR is the transversal

Hence $\angle APR = \angle PRD$.

$\angle APR = \angle PRD$

$50 + y = 127$

$y = 127 - 50$

$y = 77$

Hence, $x = 50$ and $y = 77$

6) Here AB is incident ray and BC is reflected ray

From law of reflection

$\angle 1 = \angle 2$

$\angle 3 = \angle 4$