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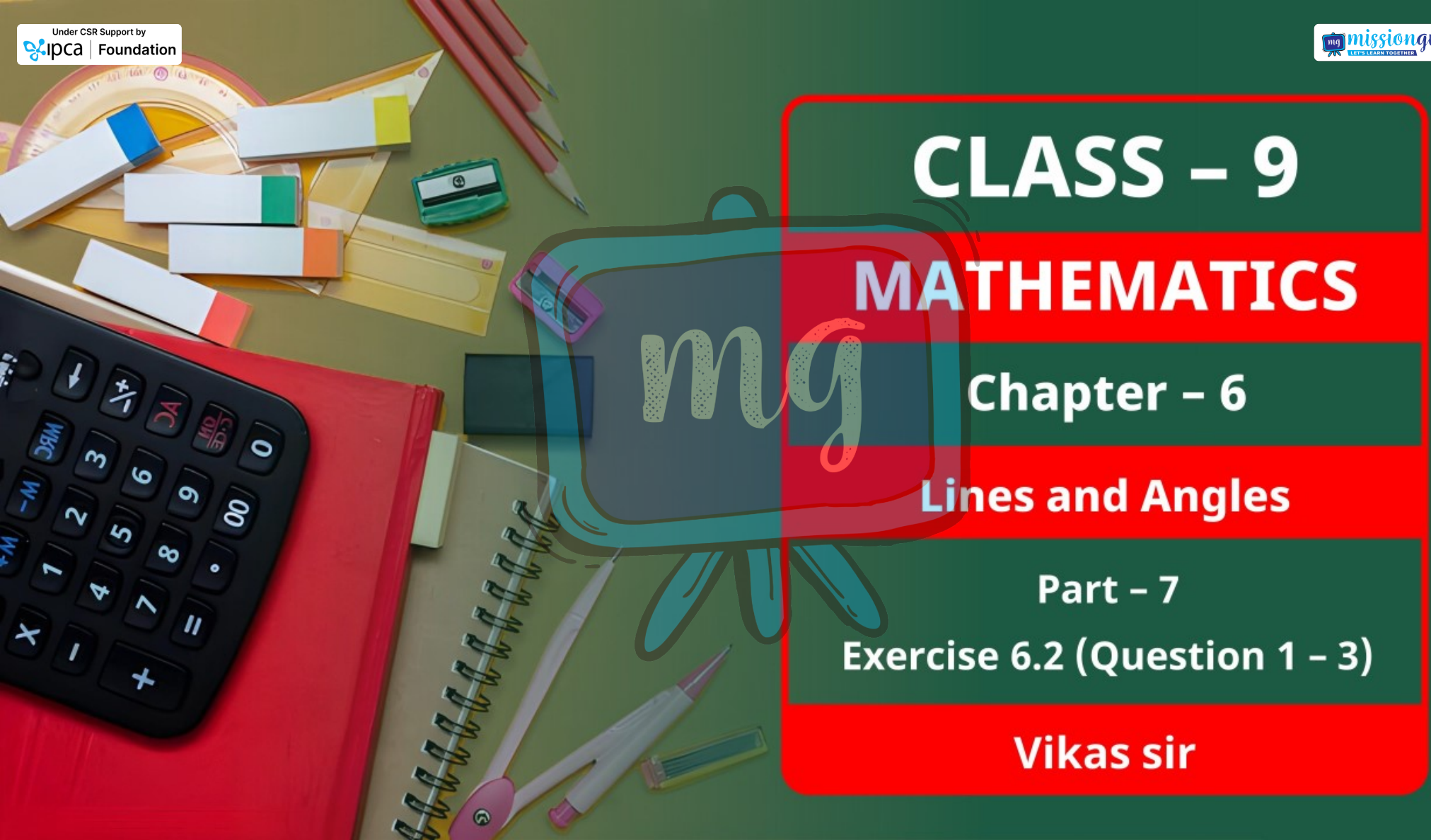

CLASS – 9

MATHEMATICS

Chapter – 6

Lines and Angles

Part – 7

Exercise 6.2 (Question 1 – 3)

Vikas sir

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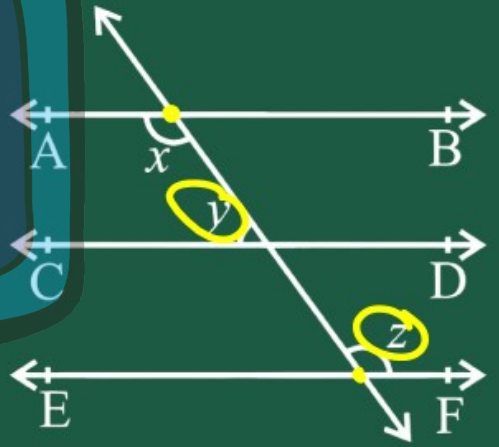
1. In Figure, if AB || CD, CD || EF and y : z = 3 : 7, find x.

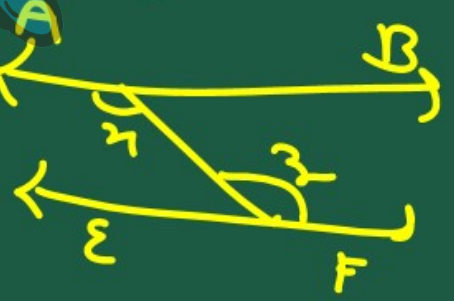
AB || CD

CD || EF

∴ AB || EF

∠x = ∠z [Alternate interior angle]





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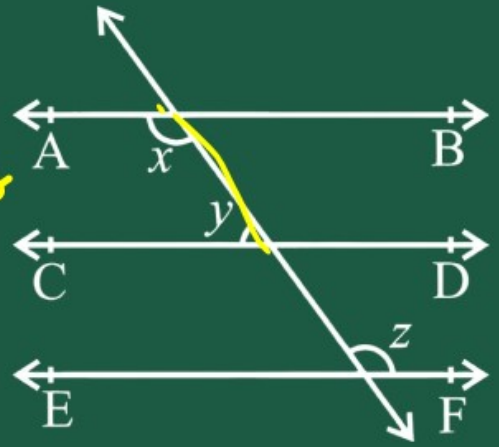
$\boxed{x = z}$

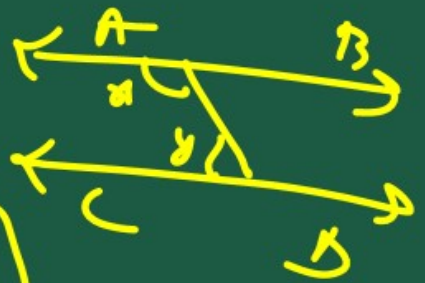
Line, AB || CD

$x + y = 180^\circ$ [Co-interior angle]

$\boxed{z + y = 180^\circ}$ — (1)

[$\because x = z$ Proved above]





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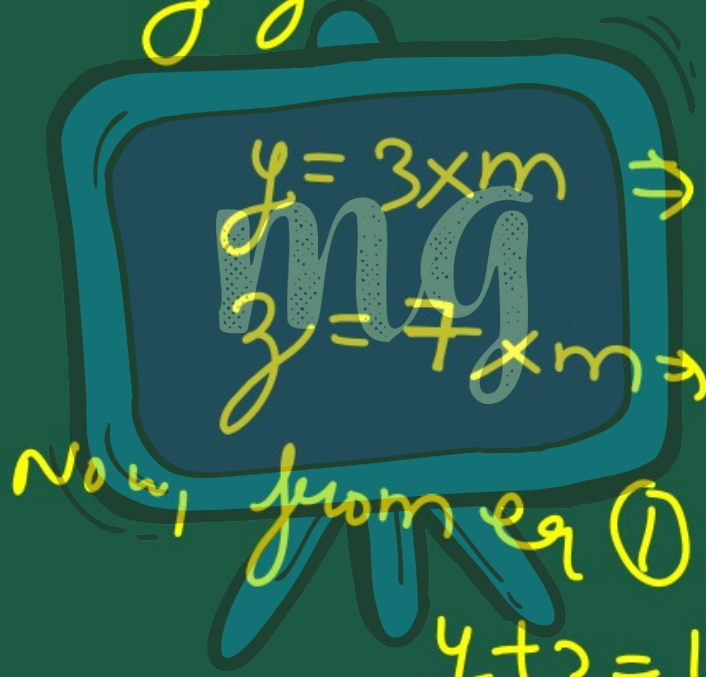

$y : z = 3 : 7$

$y = 3 \times m \Rightarrow y = 3m$

$z = 7 \times m \Rightarrow z = 7m$

Now, from eq (1)

$y + z = 180^\circ$

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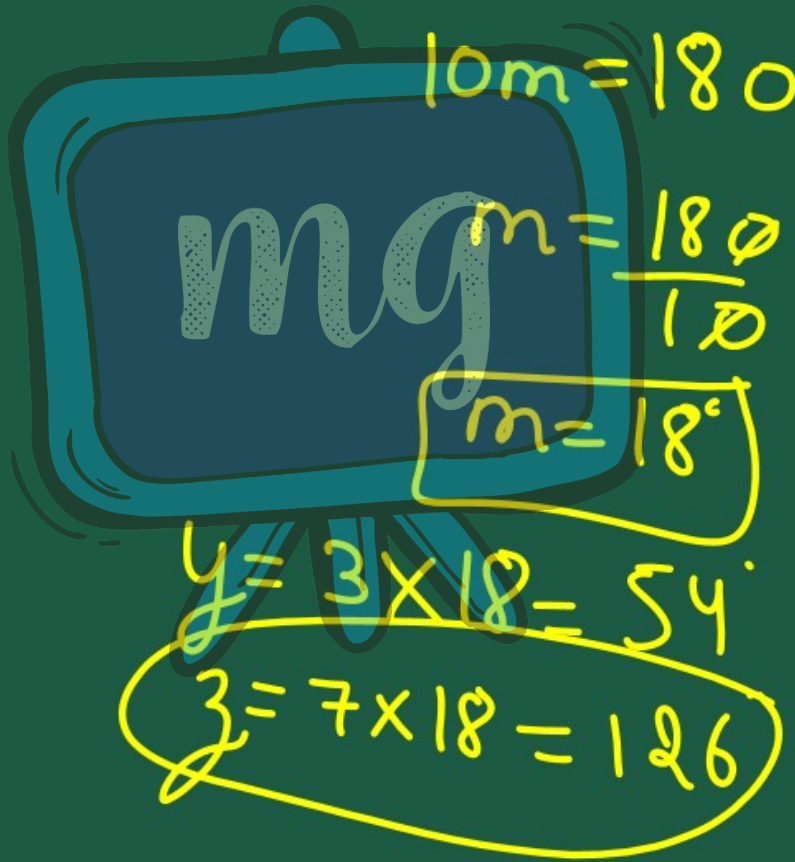

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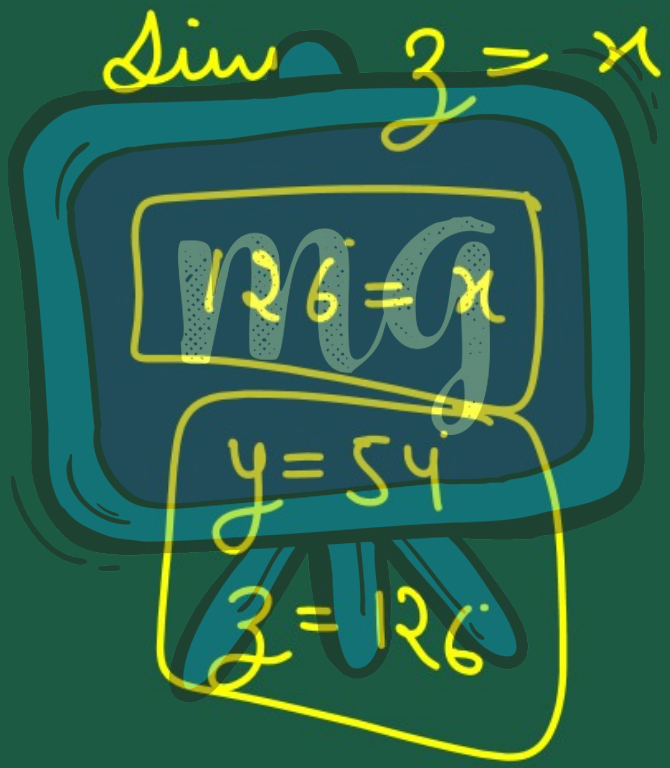

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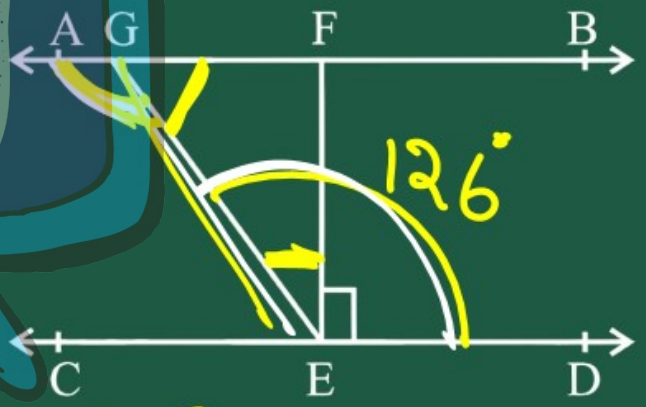
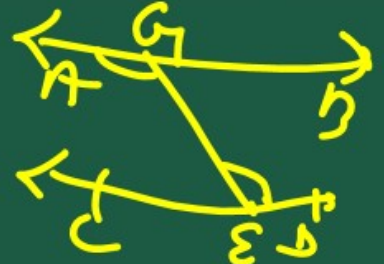
2. In Figure, if AB || CD, EF ⊥ CD and ∠GED = 126°, find ∠AGE, ∠GEF and ∠FGE

Given
AB || CD
GE is transversal
∠AGE = ∠GED
[Alternate interior angle





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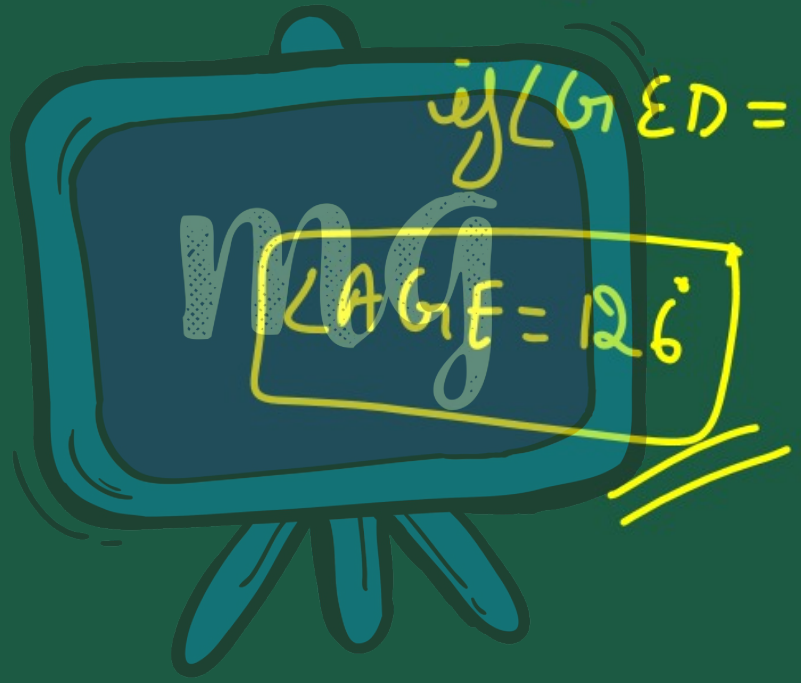

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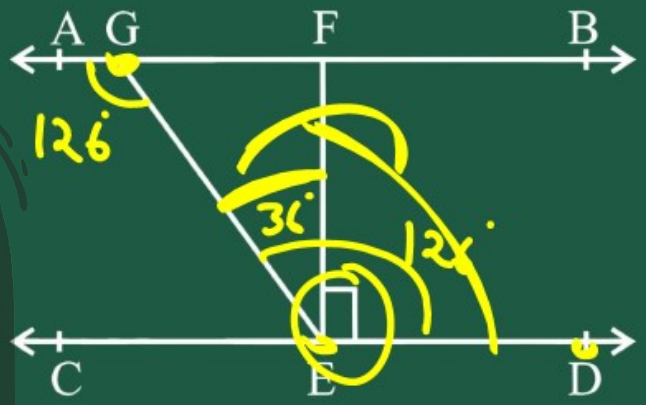

$\angle GED = \angle GEF + \angle FED$

$126^\circ = \angle GEF + 90^\circ$

$126^\circ = \angle GEF + 90^\circ$

$\angle GEF = 126^\circ - 90^\circ$

$\angle GEF = 36^\circ$

$[\because FE \perp CD]$

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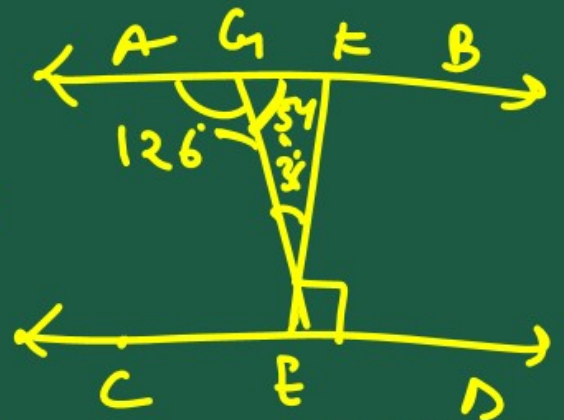
$\angle AGE + \angle FGE = 180^\circ$ [L.P]

[$\because$ AB is St. line]

$126^\circ + \angle FGE = 180^\circ$

$\angle FGE = 180^\circ - 126^\circ$

$\angle FGE = 54^\circ$



$\angle AGE = 126^\circ$

$\angle GEF = 36^\circ$

$\angle FGE = 54^\circ$

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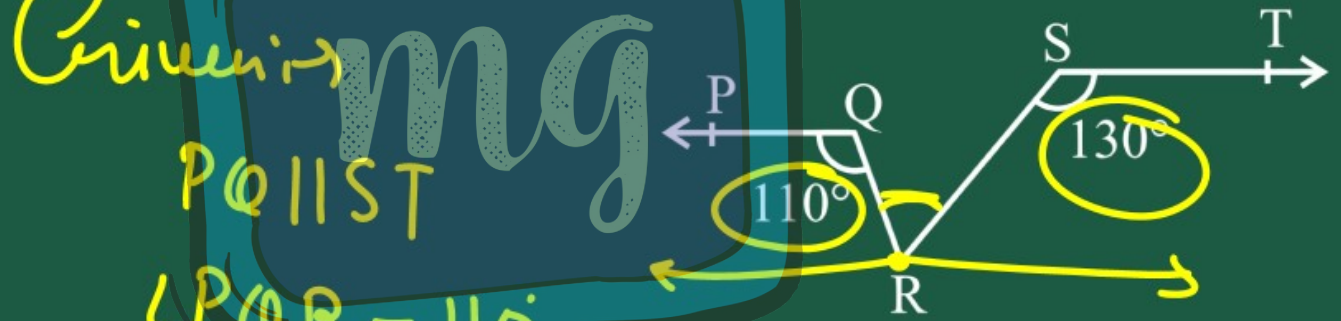
3. In Figure, if PQ | | ST, ∠PQR = 110° and ∠RST = 130°, find ∠QRS.



Given:→
PQ || ST
∠PQR = 110°
∠RST = 130°

To find:→ ∠QRS

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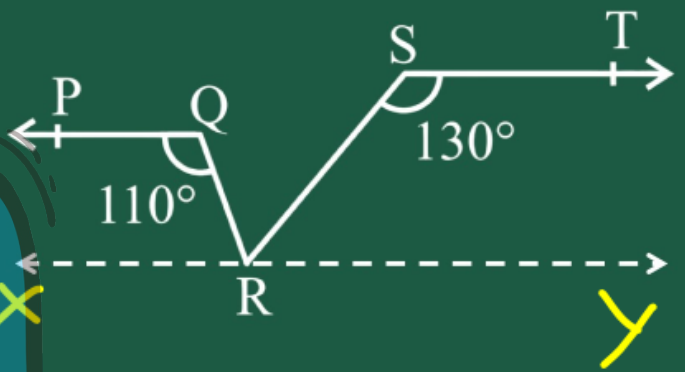
Construction :→

Constructing XY passes through R point.

St XY ∥ PQ.



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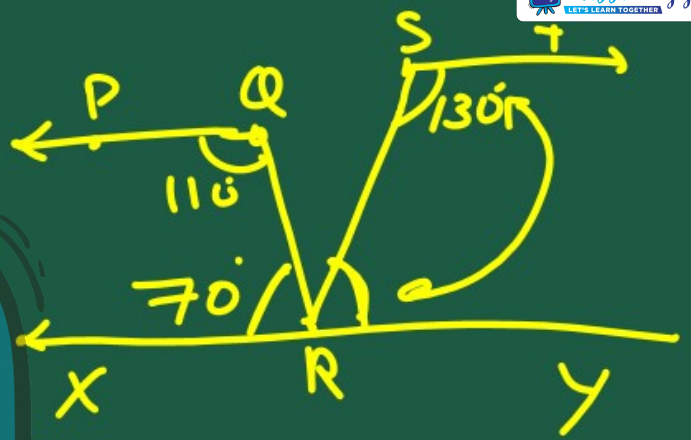
Sol:- $PQ \parallel ST$ [Given]



$PQ \parallel XY$ [Construct]

$ST \parallel XY$ Also

Since $PQ \parallel XY$, QR is transversal

$\angle PQR + \angle QRX = 180°$ [$\because$ Co-interior]

$110° + \angle QRX = 180°$

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

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

$\angle QRX = 70^\circ$

$ST \parallel XY$, SR is transversal

$\angle RST + \angle SRY = 180^\circ$ [co-interior angles]

$130^\circ + \angle SRY = 180^\circ$

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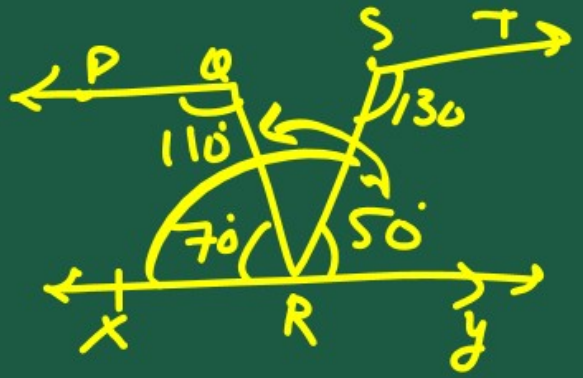
$130^\circ + \angle SRY = 180^\circ$

$\angle SRY = 180^\circ - 130^\circ$

$\angle SRY = 50^\circ$



Since XY is St. line

$\angle SRX + \angle SRY = 180^\circ$ [Linear Pair]

$\angle QRX + \angle QRS + \angle SRY = 180^\circ$

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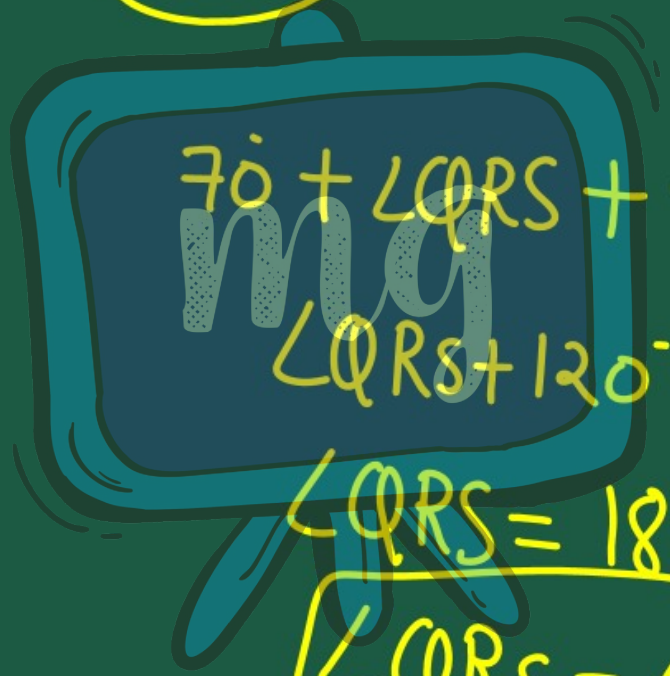
$\angle QRX + \angle QRS + \angle SRY = 180$



$70 + \angle QRS + 50 = 180$

$\angle QRS + 120 = 180$

$\angle QRS = 180 - 120$

$\angle QRS = 60$

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