Exercise 11.5

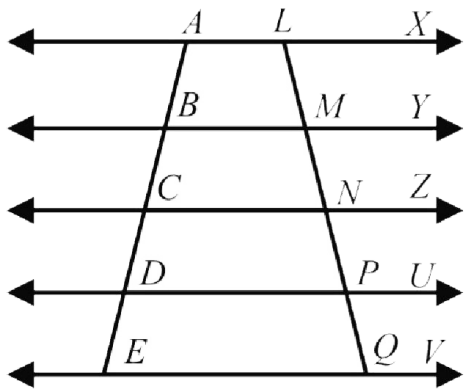
Q.1 **In the given figure**

$\overleftrightarrow{AX} \parallel \overleftrightarrow{BY} \parallel \overleftrightarrow{CZ} \parallel \overleftrightarrow{DU} \parallel \overleftrightarrow{EV}$ and $\overline{AB} = \overline{BC} = \overline{CD} = \overline{DE}$

If $\overline{MN} = 1cm$ then find the length of $\overline{LN}$ and $\overline{LQ}$

$\therefore \overline{PQ} \cong \overline{NP} \cong \overline{MN} \cong \overline{LM}$

$MN = 1cm$



Given

$\overline{AP} \cong \overline{PQ} \cong \overline{QR} \cong \overline{RS} \cong \overline{ST}$

Therefore, $\overline{LN} = \overline{LM} + \overline{MN}$

$\overline{LM} = \overline{MN}$

so, $\overline{LN} = \overline{MN} + \overline{MN}$

$\overline{LN} = 1 + 1$

$\overline{LN} = 2cm$

$\overline{LM} = \overline{NP} = \overline{PQ} = \overline{MN} = 1cm$

$So, \overline{LM} = 1cm, \overline{NP} = 1cm, \overline{PQ} = 1cm$

$LQ = \overline{LM} + \overline{MN} + \overline{NP} + \overline{PQ}$

$LQ = 1 + 1 + 1 + 1$

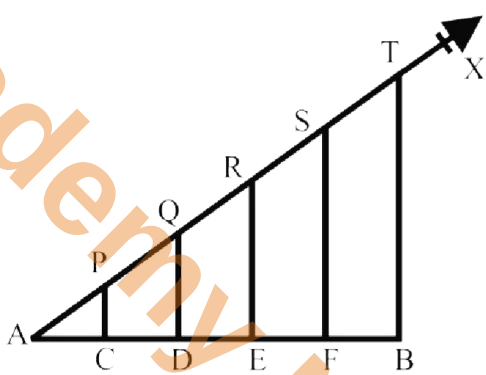
$LQ = 4cm$

Q.2 **Take a line segment of length** $5.5cm$ **and divide it into five congruent parts**

[Hint: draw an acute angle $\angle B$ **AX. On** $\overline{AX}$ *take* $\overline{AP} \cong \overline{PQ} \cong \overline{RS} \cong \overline{ST}$ **join** ***T*** **to** ***B*** **draw lines parallel to** $\overline{TB}$ **from the point** ***P,Q R*** **and** ***S.***

Proof

Construction:



(i) Take a line segment $AB = 5.5cm$

(ii) Draw any acute angle $\angle BAX$

(iii) Draw arcs on $\overrightarrow{AX}$ which are $\overline{AP} \cong \overline{PQ} \cong \overline{QR} \cong \overline{RS} \cong \overline{ST}$

(iv) Join T to B

(v) Draw lines $\overline{SF}, \overline{RE}, \overline{QD}, \& \overline{PC}$ Parallel to $\overline{TB}$.

Result line segment $\overline{AB}$ is divided into congruent line segments $\overline{AC} \cong \overline{CD} \cong \overline{DE} \cong \overline{EF} \cong \overline{FB}$.