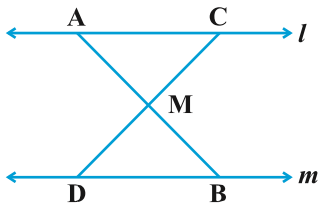
Exercise 7.3

Question 8:

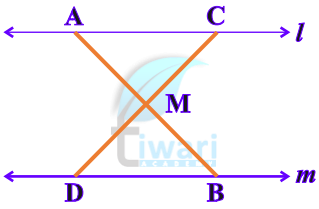
In Figure, $l \parallel m$ and M is the mid-point of a line segment AB. Show that M is also the mid – point of any line segment CD, having its end points on l and m, respectively.



Answer 8:

Given: M is the mid-point of a line segment AB and $l \parallel m$.

To Prove: M is the mid-point of a line segment CD.



Proof: In ΔAMC & ΔBMD

$\angle CAM = \angle DBM$ [∵ Alternate angles]

$AM = BM$ [∵ Given]

$\angle AMC = \angle BMD$ [∵ Vertically opposite angles]

$\Rightarrow \Delta AMC \cong \Delta BMD$ [∵ ASA rule]

$\Rightarrow CM = DM$ [∵ CPCT]

$\Rightarrow$ M is the mid-point of a line segment CD.

Hence Proved.