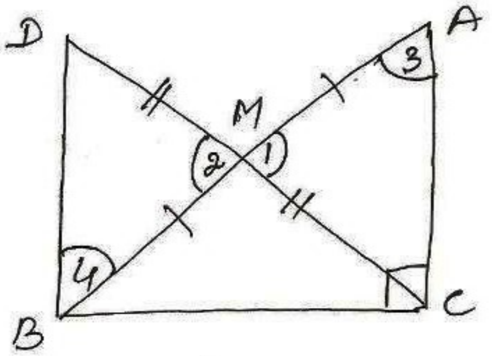
(8)



To show $\triangle AMC \cong \triangle BMD$

$\angle DBC = 90°$

$\triangle DBC \cong \triangle ACB$

$CM = \frac{1}{2} AB$

Proof In $\triangle AMC$ and $\triangle BMD$

$AM = BM$ (given)

$\angle 1 = \angle 2$ (V.O.As)

$CM = DM$ (given)

$\therefore \triangle AMC \cong \triangle BMD$ by SAS prop.

$AC = BD$ (cpct)

$\angle 3 = \angle 4$

But these are al. interior angles

$\therefore AC \parallel DB$

$\angle ACB + \angle DBC = 180°$ [co.int $\angle$s]

$90° + \angle DBC = 180°$

$\Rightarrow \angle DBC = 180° - 90°$

$= 90°$

In $\triangle DBC$ and $\triangle ACB$

$DB = AC$

$\angle DBC = \angle ACB = 90°$

$BC = CB$

$\therefore \triangle DBC \cong \triangle ACB$ by SAS prop.

$DC = AB$ (cpct)

$\frac{1}{2} DC = \frac{1}{2} AB$

$CM = \frac{1}{2} AB$ [$\because CM = DM$]