



Exercise 10A

Question 7:

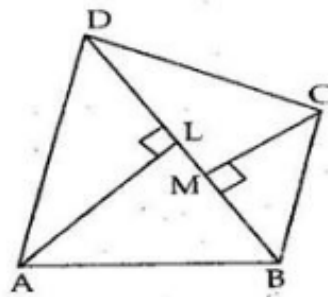
Given: ABCD is a quadrilateral and BD is one of its diagonals.

$AL \perp BD$  and  $CM \perp BD$

To Prove: area (quad. ABCD)

$$= \frac{1}{2} \times BD \times (AL + CM)$$

Proof:



$$\text{Area of } \triangle BAD = \frac{1}{2} \times BD \times AL$$

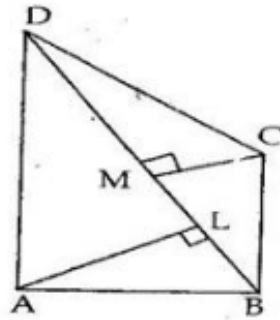
$$\text{Area of } \triangle CBD = \frac{1}{2} \times BD \times CM$$

$$\begin{aligned} \therefore \text{Area of quad. ABCD} &= \text{Area of } \triangle ABD + \text{Area of } \triangle CBD \\ &= \frac{1}{2} \times BD \times AL + \frac{1}{2} \times BD \times CM \\ \therefore \text{Area of quad. ABCD} &= \frac{1}{2} \times BD [AL + CM] \end{aligned}$$

Question 8:

$$\begin{aligned}\text{Area of } \triangle BAD &= \frac{1}{2} \times BD \times AL \\ &= \left( \frac{1}{2} \times 14 \times 8 \right) \text{ cm}^2 = 56 \text{ cm}^2\end{aligned}$$

$$\begin{aligned}\text{Area of } \triangle CBD &= \frac{1}{2} \times BD \times CM \\ &= \left( \frac{1}{2} \times 14 \times 6 \right) \text{ cm}^2 = 42 \text{ cm}^2\end{aligned}$$



$$\begin{aligned}\therefore \text{ area of quad. } ABCD &= \text{Area of } \triangle ABD + \text{Area of } \triangle CBD \\ &= (56 + 42) \text{ cm}^2 = 98 \text{ cm}^2\end{aligned}$$

\*\*\*\*\* END \*\*\*\*\*