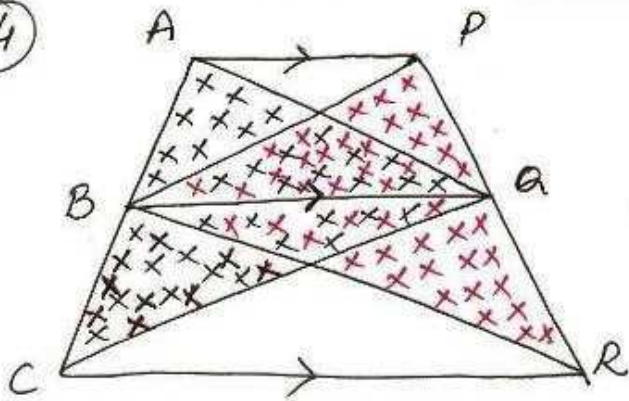


ex 9.3

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(14)



To prove - $\text{ar}(\triangle ABC) = \text{ar}(\triangle PQR)$

Proof $\text{ar}(\triangle ABQ) = \text{ar}(\triangle PQB) \dots \textcircled{i}$ [Δ s on same base and between same parallel lines] (do)

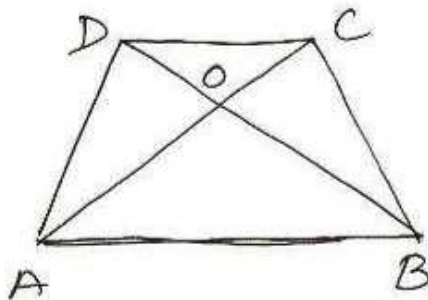
$$\text{ar}(\triangle CBQ) = \text{ar}(\triangle RQB) \dots \textcircled{ii}$$

$$\textcircled{i} + \textcircled{ii}$$

$$\text{ar}(\triangle ABQ) + \text{ar}(\triangle CBQ) = \text{ar}(\triangle PQB) + \text{ar}(\triangle RQB)$$

$$\Rightarrow \text{ar}(\triangle ABC) = \text{ar}(\triangle PQR)$$

(15)



To prove $\square ABCD$ is a trap.

Proof $\text{ar}(\triangle AOD) = \text{ar}(\triangle BOC)$ (given)

$$\text{ar}(\triangle AOD) + \text{ar}(\triangle AOB) = \text{ar}(\triangle BOC) + \text{ar}(\triangle AOB)$$

$$\Rightarrow \text{ar}(\triangle DAB) = \text{ar}(\triangle CBA)$$

But these are Δ s on same base and equal in area

$$\therefore DC \parallel AB$$

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