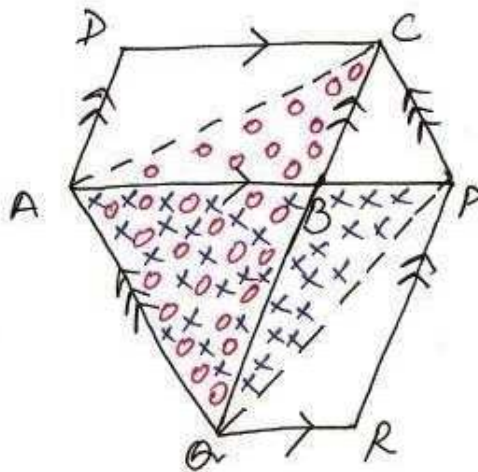


9



To Show -

$$ar(ABCD) = ar(PBQR)$$

Proof CP || AQ

$$ar(\triangle CAQ) = ar(\triangle PQA) \quad \left[ \begin{array}{l} \Delta s \text{ on same base} \\ \text{and between same} \\ \text{parallel lines} \end{array} \right]$$

$$\Rightarrow ar(\triangle ABC) + ar(\triangle BQA) = ar(\triangle QBP) + ar(\triangle BQA)$$

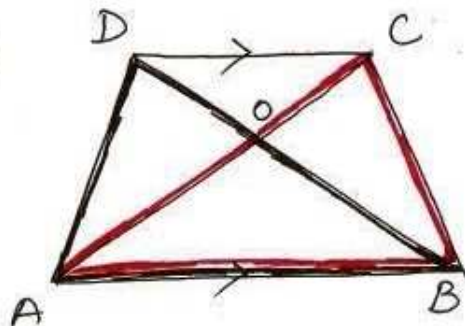
$$\Rightarrow ar(\triangle ABC) = ar(\triangle QBP)$$

$$(x2) \quad 2 ar(\triangle ABC) = 2 ar(\triangle QBP)$$

$$\Rightarrow ar(\text{diagm } ABCD) = ar(\text{diagm } PBQR)$$

[diagonal divides a  
diagm into 2  $\Delta$ s equal  
in area]

10



To Prove  $ar(AOD) = ar(BOC)$

Proof DC || AB

$$ar(\triangle DAB) = ar(\triangle CBA)$$

[ $\Delta$ s on same base and  
between same parallel  
lines]

$$\Rightarrow ar(\triangle AOD) + ar(\triangle AOB) = ar(\triangle BOC) + ar(\triangle AOB)$$

$$\Rightarrow ar(\triangle AOD) = ar(\triangle BOC)$$