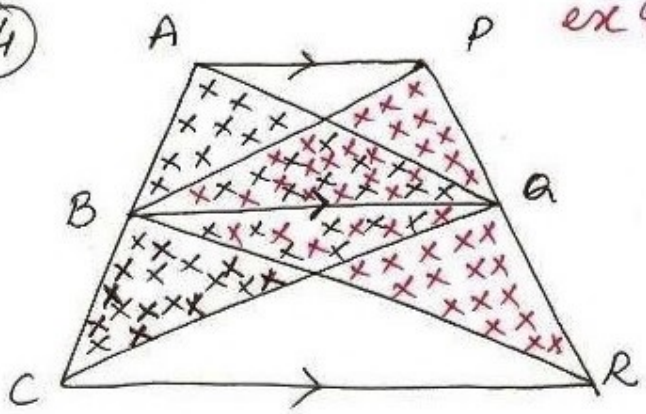
(14) ex 9.3



To prove - $ar(AQC) = ar(PBR)$

Proof $ar(\triangle ABQ) = ar(\triangle PQB) \cdots (1)$ [$\triangle$s on same base and between same parallel lines] (do)

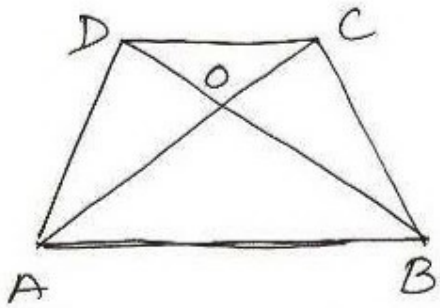
$ar(\triangle CBQ) = ar(\triangle RQB) \cdots (11)$

(1) + (11)

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

$\Rightarrow ar(\triangle AQC) = ar(\triangle PBR)$

(15)



To prove $\square ABCD$ is a trap.

Proof $ar(\triangle AOD) = ar(\triangle BOC)$ (given)

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

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

But these are $\triangle$s on same base and equal in area

$\therefore$ DC $\parallel$ AB