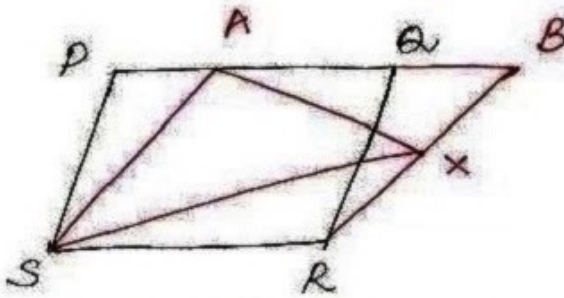


5



To Prove $ar(PQRS) = ar(ABRS)$

$$ar(\Delta AXS) = \frac{1}{2} ar(PQRS)$$

Proof - $ar(\Delta AXS) = \frac{1}{2} ar(\text{figm } ABRS) \dots \textcircled{1}$

[Δ and figm are
same base and same
parallel lines]

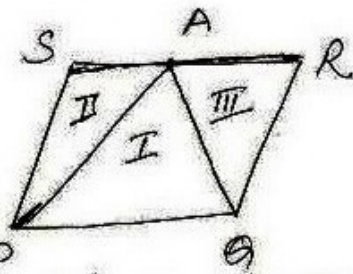
$$ar(\text{figm } ABRS) = ar(\text{figm } PQRS) \dots \textcircled{2}$$

[figms on same base
and between same
parallel lines]

from $\textcircled{1}$ and $\textcircled{2}$

$$ar(\Delta AXS) = \frac{1}{2} ar(\text{figm } PQRS)$$

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\therefore she will sow wheat in ΔI and pulses in ΔII and ΔIII
or pulses in ΔI and wheat in ΔII and ΔIII

(i) field is divided into 3 parts

(ii) each part is a Δ

(iii) $ar(\Delta I) = \frac{1}{2} ar(\text{figm } PQRS) \dots \textcircled{1}$ [Δ and figm on
same base
and same
parallel lines]

$$ar(\Delta I) + ar(\Delta II) + ar(\Delta III)$$

$$= ar(\text{figm } PQRS)$$

$$\frac{1}{2} ar(\text{figm } PQRS) + ar(\Delta II) + ar(\Delta III) = ar(\text{figm } PQRS)$$

$$\Rightarrow ar(\Delta II) + ar(\Delta III) = \frac{1}{2} ar(\text{figm } PQRS) \dots \textcircled{2}$$

from $\textcircled{1}$, $\textcircled{2}$

$$ar(\Delta I) = ar(\Delta II) + ar(\Delta III)$$