

8.1 p. 432 #3

9d

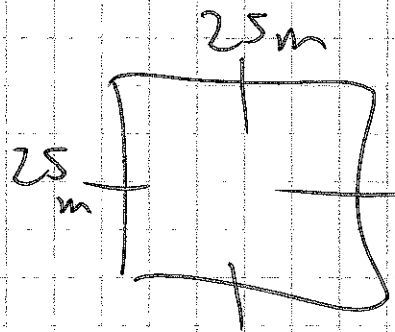
a) i)  $P = 100 \text{ cm.}$

$$w = \frac{P}{4}$$

S1  $w = \frac{100}{4} = 25 \text{ m.}$

S2  $A = 25(25) = 625 \text{ m}^2$

$\therefore$  max area of  $625 \text{ m}^2$  with a given perimeter of  $100 \text{ cm.}$



b) i)  $A = 1 \text{ m}^2.$

$$w = \sqrt{1} = 1$$

$$w = 1$$

$$P = 4(1) = 4 \text{ m.}$$

$\therefore$  minimum length of wood is the perimeter of  $4 \text{ m}$  with a given area of  $1 \text{ m}^2$ .

