

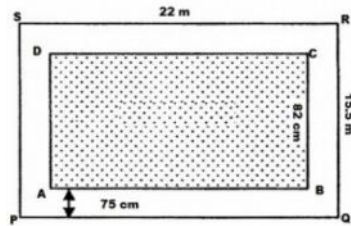


### Mensuration I Ex 20.2 Q13

**Answer :**

We have,

Length of the hall  $PQ = 22$  m and breadth of the hall  $QR = 15.5$  m



$$\therefore \text{Area of the school hall } PQRS = 22 \text{ m} \times 15.5 \text{ m} = 341 \text{ m}^2$$

$$\text{Length of the carpet } AB = 22 \text{ m} - (0.75 \text{ m} + 0.75 \text{ m}) = 20.5 \text{ m} \quad [\text{Since } 100 \text{ cm} = 1 \text{ m}]$$

$$\text{Breadth of the carpet } BC = 15.5 \text{ m} - (0.75 \text{ m} + 0.75 \text{ m}) = 14 \text{ m}$$

$$\therefore \text{Area of the carpet } ABCD = 20.5 \text{ m} \times 14 \text{ m} = 287 \text{ m}^2$$

$$\begin{aligned} \text{Area of the strip} &= \text{Area of the school hall } PQRS - \text{Area of the carpet } ABCD \\ &= 341 \text{ m}^2 - 287 \text{ m}^2 \\ &= 54 \text{ m}^2 \end{aligned}$$

Again,

$$\text{Area of the 1 m length of carpet} = 1 \text{ m} \times 0.82 \text{ m} = 0.82 \text{ m}^2$$

Thus,

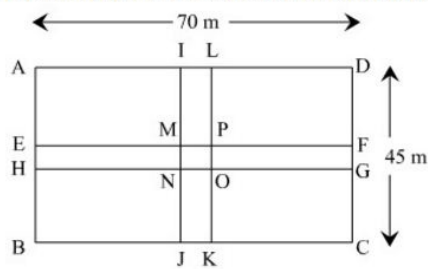
$$\text{Length of the carpet whose area is } 287 \text{ m}^2 = 287 \text{ m}^2 \div 0.82 \text{ m}^2 = 350 \text{ m}$$

$$\text{Cost of the 350 m long carpet} = \text{Rs. } 18 \times 350 = \text{Rs. } 6300$$

### Mensuration I Ex 20.2 Q14

**Answer :**

Let  $ABCD$  be the rectangular park then  $EFGH$  and  $IJKL$  the two rectangular roads with width 5 m.



$$\text{Length of the rectangular park } AD = 70 \text{ m}$$

$$\text{Breadth of the rectangular park } CD = 45 \text{ m}$$

$$\therefore \text{Area of the rectangular park} = \text{Length} \times \text{Breadth} = 70 \text{ m} \times 45 \text{ m} = 3150 \text{ m}^2$$

$$\text{Area of the road } EFGH = 70 \text{ m} \times 5 \text{ m} = 350 \text{ m}^2$$

$$\text{Area of the road } JKIL = 45 \text{ m} \times 5 \text{ m} = 225 \text{ m}^2$$

Clearly area of  $MNOP$  is common to the two roads.

$$\text{Thus, Area of } MNOP = 5 \text{ m} \times 5 \text{ m} = 25 \text{ m}^2$$

Hence,

$$\begin{aligned} \text{Area of the roads} &= \text{Area } (EFGH) + \text{Area } (JKIL) - \text{Area } (MNOP) \\ &= (350 + 225) \text{ m}^2 - 25 \text{ m}^2 = 550 \text{ m}^2 \end{aligned}$$

Again, it is given that the cost of constructing the roads = Rs. 105 per  $\text{m}^2$

Therefore,

$$\begin{aligned} \text{Cost of constructing } 550 \text{ m}^2 \text{ area of the roads} &= \text{Rs. } (105 \times 550) \\ &= \text{Rs. } 57750. \end{aligned}$$

\*\*\*\*\* END \*\*\*\*\*

