



Mensuration I Ex 20.4 Q16

Answer :

Let altitude of the triangular field be h m

Then base of the triangular field is $3h$ m.

$$\text{Area of the triangular field} = \frac{1}{2} \times h \times 3h = \frac{3h^2}{2} \text{ m}^2 \dots\dots\dots(i)$$

The rate of cultivating the field is Rs 24.60 per hectare.

Therefore,

$$\begin{aligned} \text{Area of the triangular field} &= \frac{332.10}{24.60} = 13.5 \text{ hectare} \\ &= 135000 \text{ m}^2 \quad [\text{Since 1 hectare} = 10000 \text{ m}^2] \dots\dots\dots(ii) \end{aligned}$$

From equation (i) and (ii) we have,

$$\frac{3h^2}{2} = 135000 \text{ m}^2$$

$$3h^2 = 135000 \times 2 = 270000 \text{ m}^2$$

$$h^2 = \frac{270000}{3} \text{ m}^2 = 90000 \text{ m}^2 = (300 \text{ m})^2$$

$$\Rightarrow h = 300 \text{ m}$$

Hence,

Height of the triangular field = 300 m and base of the triangular field = $3 \times 300 \text{ m} = 900 \text{ m}$

Mensuration I Ex 20.4 Q17

Answer :

We have,

Length of a wall = 4.5 m

Breadth of the wall = 3 m

$$\text{Area of the wall} = \text{Length} \times \text{Breadth} = 4.5 \text{ m} \times 3 \text{ m} = 13.5 \text{ m}^2$$

From the figure we observed that,

Area of the window = Area of the rectangle + Area of the triangle

$$= (0.8 \text{ m} \times 0.5 \text{ m}) + \left(\frac{1}{2} \times 0.8 \text{ m} \times 0.2 \text{ m}\right) \quad [\text{Since } 1 \text{ m} = 100 \text{ cm}]$$

$$= 0.4 \text{ m}^2 + 0.08 \text{ m}^2 = 0.48 \text{ m}^2$$

$$\text{Area of two windows} = 2 \times 0.48 = 0.96 \text{ m}^2$$

$$\text{Area of the remaining wall (leaving windows)} = (13.5 - 0.96) \text{ m}^2 = 12.54 \text{ m}^2$$

Cost of painting the wall per m^2 = Rs. 15

Hence, the cost of painting on the wall = Rs. (15×12.54) = Rs. 188.1

(In the book, the answer is given for one window, but we have 2 windows.)

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