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.

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

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

Therefore,

Area of the triangular field = $\frac{332.10}{24.60} = 13.5\ \text{hectare}$

= 135000 m^2 [Since 1 hectare = 10000 m^2].....(ii)

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

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

$3h^2$ = 135000 x 2 = 270000 m^2

$h^2 = \frac{270000}{3}\ \mathrm{m}^2$=90000 m2 = $(300\ \mathrm{m})^2$

$\Rightarrow h$ = 300 m

Hence,

Height of the triangular field = 300 m and base of the triangular field = 3 x 300 m = 900 m

Mensuration I Ex 20.4 Q17

Answer :

We have,

Length of a wall = 4.5 m

Breadth of the wall =3 m

Area of the wall = Length x Breadth = 4.5 m x 3 m = 13.5 m^2

From the figure we observed that,

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

= (0.8 m x 0.5 m) + ($\frac{1}{2}$ x 0.8 m x 0.2 m) [Since 1 m = 100 cm]

= 0.4 m^2 + 0.08 m^2 = 0.48 m^2

Area of two windows = 2 x 0.48 = 0.96 m^2

Area of the remaining wall (leaving windows) = (13.5 − 0.96)m^2 = 12.54 m^2

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

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

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

********** END **********