



Mensuration I Ex 20.1 Q19

Answer :

We have,

Length of a room = 6.6 m

Breadth of a room = 5.6 m

Area of a room = Length x Breadth = 6.6 m x 5.6 m = 36.96 m²

Width of a carpet = 70 cm = 0.7 m [Since 1 m = 100 cm]

Length of a carpet = $\frac{\text{Area of a room}}{\text{Width of a carpet}} = \frac{36.96 \text{ m}^2}{0.7 \text{ m}} = 52.8 \text{ m}$

Cost of 52.8 m long roll of carpet = Rs. 3960

Therefore,

Cost of 1 m long roll of carpet = Rs. $\frac{3960}{52.8} = \text{Rs. } 75$

Mensuration I Ex 20.1 Q20

Answer :

We have,

Length of a room = 9 m

Breadth of a room = 8 m

Height of a room = 6.5 m

Area of 4 walls = 2(l + b)h

$$= 2(9 \text{ m} + 8 \text{ m}) \times 6.5 \text{ m} = 2 \times 17 \text{ m} \times 6.5 \text{ m} = 221 \text{ m}^2$$

Length of a door = 2 m

Breadth of a door = 1.5 m

Area of a door = Length x Breadth = 2 m x 1.5 m = 3 m²

Length of a window = 1.5 m

Breadth of a window = 1 m

Since, area of one window = Length x Breadth = 1.5 m x 1 m = 1.5 m²

Thus,

Area of 3 such windows = 3 x 1.5 m² = 4.5 m²

Area to be white-washed = Area of 4 walls – (Area of one door + Area of 3 windows)

Area to be white-washed = [221 – (3 + 4.5)] m²

$$= (221 - 7.5) \text{ m}^2 = 213.5 \text{ m}^2$$

Cost of white-washing for 1 m² area = Rs. 3.80

∴ Cost of white-washing for 213.5 m² area = Rs. (213.5 x 3.80) = Rs. 811.30

Mensuration I Ex 20.1 Q21

Answer :

We have,

Length of the hall = 36 m

Breadth of the hall = 24 m

Let h be the height of the hall.

Now, in papering the wall, we need to paper the four walls excluding the floor and roof of the hall.

So, the area of the wall which is to be papered = Area of 4 walls

$$= 2h(l + b)$$

$$= 2h(36 + 24) = 120h \text{ m}^2$$

Now, area left for the door and the windows = 80 m^2

So, the area which is actually papered = $(120h - 80) \text{ m}^2$

Again,

The cost of papering the walls at Rs 8.40 per m^2 = Rs. 9408.

$$\Rightarrow (120h - 80) \text{ m}^2 \times \text{Rs. } 8.40 \text{ per m}^2 = \text{Rs. } 9408$$

$$\Rightarrow (120h - 80) \text{ m}^2 = \frac{\text{Rs. } 9408}{\text{Rs. } 8.40}$$

$$\Rightarrow (120h - 80) \text{ m}^2 = 1120 \text{ m}^2$$

$$\Rightarrow 120h \text{ m}^2 = (1120 + 80) \text{ m}^2$$

$$\Rightarrow 120h \text{ m}^2 = 1200 \text{ m}^2$$

$$\therefore h = \frac{1200 \text{ m}^2}{120 \text{ m}} = 10 \text{ m}$$

Hence, the height of the wall would be 10 m.

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