



Surface Areas and Volume of a Cuboid and Cube Ex 18.1 Q12

Answer :

We know,

Length of the iron tank (l) = 12 m

Width of the iron tank (b) = 9 m

Depth of the iron tank (h) = 4 m

Width of the iron sheet (w) = 2 m

Rate of the iron sheet (r) = Rs.5 per metre

We need to find the cost of iron sheet used

Total surface area of the iron tank,

$$\begin{aligned} A &= 2(lb + bh + hl) \\ &= 2(12 \times 9 + 9 \times 4 + 4 \times 12) \\ &= 2(108 + 36 + 48) \\ &= 2(192) \\ &= 384 \text{ m}^2 \end{aligned}$$

Length of the iron sheet required,

$$\begin{aligned} L &= \frac{A}{w} \\ &= \frac{384}{2} \\ &= 192 \text{ m} \end{aligned}$$

Cost of the required iron sheet,

$$\begin{aligned}
 C &= L \times r \\
 &= 192 \times 5 \\
 &= \text{Rs.}960
 \end{aligned}$$

The total cost of iron sheet used is Rs.960 .

Surface Areas and Volume of a Cuboid and Cube Ex 18.1 Q13

Answer :

The shelter is a box-like structure and hence cubical.

We have,

Length of the cuboid (l) = 4 m

Breadth of the cuboid (b) = 3 m

Height of the cuboid (h) = 2.5 m

The total surface area of the cuboid,

$$A_1 = 2(lb + bh + hl)$$

The area of the base,

$$A_2 = (l \times b)$$

The quantity of tarpaulin required,

$$= A_1 - A_2$$

$$= 2(lb + bh + hl) - (lb)$$

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

$$= 4 \times 3 + 2(2.5)(4 + 3)$$

$$= 12 + 35$$

$$= 47 \text{ m}^2$$

So the quantity of tarpaulin required is 47 m² .

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