

Surface Areas and Volume of a Cuboid and Cube Ex 18.2 Q12

Answer:

Volume of the gold sheet,

$$(V) = \frac{1}{2} \,\mathrm{m}^3$$

Area it covers,

$$(A) = 1 \text{ hectare}$$
$$= 10^4 \text{ m}^2$$

Let.

 $t \rightarrow$ Thickness of the sheet

We know that,

$$t = \frac{V}{A}$$

$$= \frac{1/2}{10^4} \text{ m}$$

$$= \frac{1}{20,000} \text{ m}$$

$$= \frac{1}{20,000} \times 100 \text{ cm} \qquad \{1 \text{m} = 100 \text{ cm}\}$$

$$= \frac{1}{200} \text{ cm}$$

Thickness of the sheet is $\frac{1}{200}$ cm.

Surface Areas and Volume of a Cuboid and Cube Ex 18.2 Q13

Answer:

Let.

 $a \rightarrow \text{Side of the cube}$

 $V \rightarrow \text{Volume of the cube}$

 $a_1, a_2, a_3 \rightarrow$ Sides of the three smaller cubes

 $v_1, v_2, v_3 \rightarrow \text{Volumes of the three smaller cubes}$

We have.

$$a = 12 \,\mathrm{cm}$$
.

$$a_1 = 6 \,\mathrm{cm}$$

$$a_2 = 8 \,\mathrm{cm}$$

We know that,

$$V = v_1 + v_2 + v_3$$

$$a^3 = a_1^3 + a_2^3 + a_3^3$$

$$12^3 = 6^3 + 8^3 + a_3^3$$

$$1728 = 216 + 512 + a_3^3$$

$$a_3^3 = 1728 - (216 + 512)$$

$$= 1000$$

$$a_3 = 10 \text{ cm}$$

$$\begin{cases} \text{Since, } V = a^3 \\ \text{Since, }$$

Edge of the third smaller cube is 10cm

Surface Areas and Volume of a Cuboid and Cube Ex 18.2 Q14

Answer:

Dimensions of the cinema hall are,

Length $(l) = 100 \,\mathrm{m}$

Breath $(b) = 50 \,\mathrm{m}$

Height(h) = 18 m

Each person requires $150 \,\mathrm{m}^3$ of air (say, ν)

We are asked to find the number of persons who can sit in the cinema hall

 $V \rightarrow$ Volume of the hall, then

The number of people that can sit in the hall,

$$= \frac{V}{v}$$

$$= \frac{lbh}{150}$$

$$= \frac{100 \times 50 \times 18}{150}$$

$$= 600$$

Maximum 600 people can sit in the hall.