



### Exercise 13A

Question 17:

Let each side of the cube be  $a$  cm

Then, the lateral surface area of the cube  $= (4a^2) \text{ cm}^2$

$$\therefore 4a^2 = 900$$

$$\Rightarrow a^2 = \frac{900}{4} = 225$$

$$\therefore a = \sqrt{225} = 15 \text{ cm}$$

$$\begin{aligned}\therefore \text{Volume of the cube} &= a^3 \\ &= (15)^3 = (15 \times 15 \times 15) \text{ cm}^3 \\ &= 3375 \text{ cm}^3.\end{aligned}$$

Question 18:

$$\text{Volume of the cube} = 512 \text{ cm}^3 \quad [\text{Volume} = a^3]$$

$$\therefore \text{Each edge of the cube} = \sqrt[3]{512} = 8 \text{ cm}.$$

$$\begin{aligned}\therefore \text{Surface area of cube} &= 6a^2 \\ &= 6 \times (8)^2 \text{ cm}^2 \\ &= (6 \times 64) \text{ cm}^2 \\ &= 384 \text{ cm}^2\end{aligned}$$

Question 19:

$$\begin{aligned}\text{Volume of the new cube} &= [(3)^3 + (4)^3 + (5)^3] \text{ cm}^3 \\ &= (27 + 64 + 125) \text{ cm}^3 \\ &= 216 \text{ cm}^3\end{aligned}$$

$$\text{Now edge of this cube} = a \text{ cm}$$

$$\text{And, } a^3 = 216$$

$$\therefore a = 6 \text{ cm}$$

$$\begin{aligned}\text{Lateral surface area of the new cube} &= 4a^2 \text{ cm}^2. \\ &= 4 \times (6)^2 \text{ cm}^2 \\ &= (4 \times 36) \text{ cm}^2 \\ &= 144 \text{ cm}^2\end{aligned}$$

$$\therefore \text{The lateral surface area of the new cube formed} = 144 \text{ cm}^2.$$

Question 20:

$$1 \text{ hectare} = 10000 \text{ m}^2$$

$$\text{Area} = 2 \text{ hectares} = 2 \times 10000 \text{ m}^2$$

$$\text{Depth of the ground} = 5 \text{ cm} = \frac{5}{100} \text{ m}$$

$$\begin{aligned}\text{Volume of water} &= (\text{area} \times \text{depth}) \\ &= \left( 2 \times 10000 \times \frac{5}{100} \right) \text{ m}^3 \\ &= 1000 \text{ m}^3\end{aligned}$$

$$\therefore \text{Volume of water that falls} = 1000 \text{ m}^3$$

\*\*\*\*\* END \*\*\*\*\*

