



Exercise 13A

Question 1:

(i) length = 12 cm, breadth = 8 cm and height = 4.5 cm

∴ Volume of cuboid = $l \times b \times h$

$$= (12 \times 8 \times 4.5) \text{ cm}^3 = 432 \text{ cm}^3$$

∴ Lateral surface area of a cuboid = $2(l + b) \times h$

$$= [2(12 + 8) \times 4.5] \text{ cm}^2$$

$$= (2 \times 20 \times 4.5) \text{ cm}^2 = 180 \text{ cm}^2$$

∴ Total surface area cuboid = $2(lb + bh + lh)$

$$= 2(12 \times 8 + 8 \times 4.5 + 12 \times 4.5) \text{ cm}^2$$

$$= 2(96 + 36 + 54) \text{ cm}^2$$

$$= (2 \times 186) \text{ cm}^2$$

$$= 372 \text{ cm}^2$$

(ii) Length 26 m, breadth = 14 m and height = 6.5 m

∴ Volume of a cuboid = $l \times b \times h$

$$= (26 \times 14 \times 6.5) \text{ m}^3$$

$$= 2366 \text{ m}^3$$

∴ Lateral surface area of a cuboid = $2(l + b) \times h$

$$= [2(26 + 14) \times 6.5] \text{ m}^2$$

$$= (2 \times 40 \times 6.5) \text{ m}^2$$

$$= 520 \text{ m}^2$$

∴ Total surface area = $2(lb + bh + lh)$

$$= 2(26 \times 14 + 14 \times 6.5 + 26 \times 6.5)$$

$$= 2(364 + 91 + 169) \text{ m}^2$$

$$= (2 \times 624) \text{ m}^2 = 1248 \text{ m}^2$$

(iii) Length = 15 m, breadth = 6 m and height = 5 dm = 0.5 m

∴ Volume of a cuboid = $l \times b \times h$

$$= (15 \times 6 \times 0.5) \text{ m}^3 = 45 \text{ m}^3$$

∴ Lateral surface area = $2(l + b) \times h$

$$= [2(15 + 6) \times 0.5] \text{ m}^2$$

$$= (2 \times 21 \times 0.5) \text{ m}^2 = 21 \text{ m}^2$$

∴ Total surface area = $2(lb + bh + lh)$

$$= 2(15 \times 6 + 6 \times 0.5 + 15 \times 0.5) \text{ m}^2$$

$$= 2(90 + 3 + 7.5) \text{ m}^2$$

$$= (2 \times 100.5) \text{ m}^2$$

$$= 201 \text{ m}^2$$

(iv) Length = 24 m, breadth = 25 cm = 0.25 m, height = 6 m.

∴ Volume of cuboid = $l \times b \times h$

$$= (24 \times 0.25 \times 6) \text{ m}^3$$

$$= 36 \text{ m}^3$$

∴ Lateral surface area = $2(l + b) \times h$

$$= [2(24 + 0.25) \times 6] \text{ m}^2$$

$$= (2 \times 24.25 \times 6) \text{ m}^2$$

$$= 291 \text{ m}^2$$

∴ Total surface area = $2(lb + bh + lh)$

$$= 2(24 \times 0.25 + 0.25 \times 6 + 24 \times 6) \text{ m}^2$$

$$\begin{aligned} &= 2(6+1.5+144) \text{ m}^2 \\ &= (2 \times 151.5) \text{ m}^2 \\ &= 303 \text{ m}^2. \end{aligned}$$

***** END *****