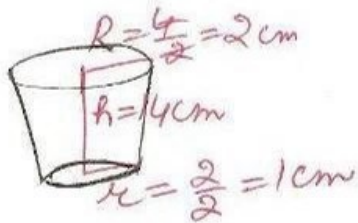


ex 13.4

①



Capacity of glass

$$= \frac{1}{3} \pi h (R^2 + r^2 + Rr)$$

$$= \frac{1}{3} \times \frac{22}{7} \times 4 (2^2 + 1^2 + 2 \times 1)$$

$$= \frac{44}{3} \times 7$$

$$= \frac{308}{3}$$

$$= 102.67 \text{ cm}^3$$

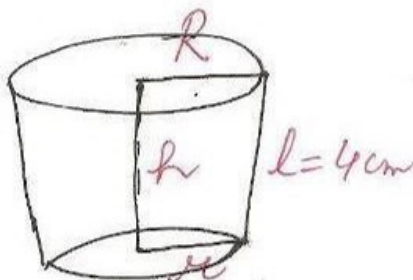
$$= \frac{22}{7} [15(4+10) + 4^2]$$

$$= \frac{22}{7} (210 + 16)$$

$$= \frac{22}{7} \times 226$$

$$= \frac{4972}{7} = 710.28 \text{ cm}^2$$

②



CSA of frustum

$$= (\pi R + \pi r) l$$

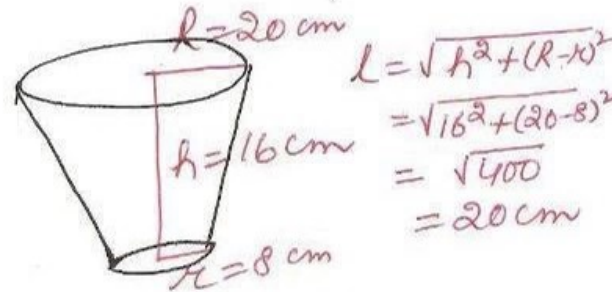
$$= (2\pi R + 2\pi r) \frac{l}{2} \quad [\text{Mul and div. by 2}]$$

$$= (18 + 6) \times \frac{4}{2}$$

$$= 24 \times 2$$

$$= 48 \text{ cm}^2$$

④



Volume of milk

$$= \frac{1}{3} \pi h (R^2 + r^2 + Rr)$$

$$= \frac{1}{3} \times 3.14 \times 16 (20^2 + 8^2 + 20 \times 8)$$

$$= \frac{3.14 \times 16}{3} \times 4 \times 4 (5^2 + 2^2 + 5 \times 2)$$

[taking 4x4 common]

$$= \frac{3.14 \times 16 \times 16}{3} \times 39$$

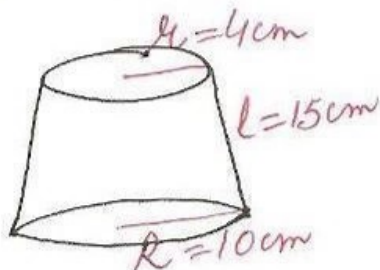
$$= 10449.92 \text{ cm}^3$$

$$= 10.44992 \text{ l}$$

$$= 10.45 \text{ l}$$

Cost of milk = 20 × 10.49 = Rs 209

③



area of material used

$$= \pi l (r + R) + \pi r^2$$

$$= \pi [l(r + R) + r^2]$$

Metal sheet used

$$= \pi l (R + r) + \pi r^2$$

$$3.14 = \pi [l(R + r) + r^2]$$

$$3.14 = 3.14 [20(20 + 8) + 8^2]$$

$$3.14 = 3.14 (560 + 64)$$

$$= 3.14 \times 624$$

$$= 1959.36 \text{ cm}^2$$

Cost = 8 × 1959.36 = Rs 156.75