

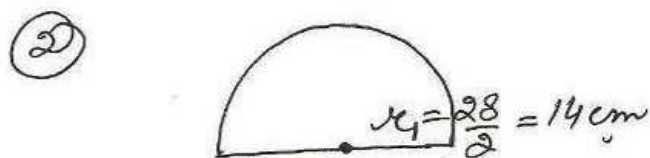
volume of iron used =  $\pi h (R^2 - r^2)$

$$= \frac{22}{7} \times 100 (8^2 - 6^2)$$

$$= \frac{2200}{7} (8-6)(8+6)$$

$$= \frac{2200}{7} \times 2 \times 14$$

$$= 8800 \text{ cm}^3$$



length of arc =  $\pi r_1$

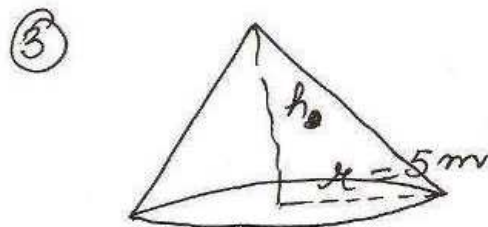
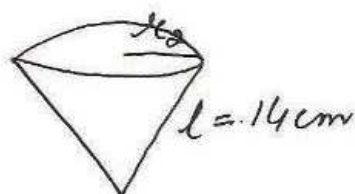
$$= \frac{22}{7} \times 14$$

$$= 44 \text{ cm}$$

circumference of cone base = length of arc = 44 cm

$$2\pi r_2 = 44$$

$$2 \times \frac{22}{7} r_2 = 44$$



area of cloth = CSA of tent

$$165 = \pi r l$$

$$\Rightarrow \frac{22}{7} \times 5 l = 165$$

$$\Rightarrow l = \frac{21}{2} \text{ m}$$

no of students who can sit inside =  $\frac{\text{area of base}}{\text{area occupied by 1 stud.}}$

$$\Rightarrow r_2 = 7 \text{ cm}$$

slant height (l) of cone =  $r_1$

$$= 14 \text{ cm}$$

$$h = \sqrt{l^2 - r_1^2}$$

$$= \sqrt{14^2 - 7^2}$$

$$= \sqrt{7^2(2^2 - 1^2)}$$

$$= 7\sqrt{4-1}$$

$$= 7\sqrt{3} \text{ cm}$$

volume of conical vessel =  $\frac{1}{3} \pi r_2^2 h$

$$= \frac{1}{3} \times \frac{22}{7} \times 7 \times 7 \times 7\sqrt{3}$$

$$= \frac{1078\sqrt{3}}{3} \text{ cm}^3$$