

$$= \frac{\pi r^2}{5/7}$$

$$= \frac{22}{7} \times 5 \times 5 \times \frac{7}{5}$$

$$= 110$$

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

$$= \sqrt{\left(\frac{21}{2}\right)^2 - 5^2}$$

$$= \sqrt{\frac{441 - 100}{4}}$$

$$= \frac{\sqrt{341}}{2}$$

volume of air in tent

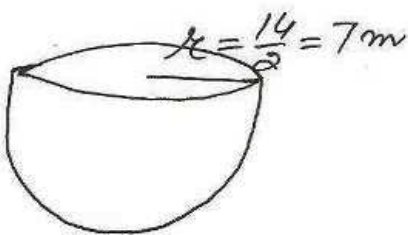
$$= \frac{1}{3} \pi r^2 h$$

$$= \frac{1}{3} \times \frac{22}{7} \times 5 \times 5 \times \frac{\sqrt{341}}{2}$$

$$= \frac{275 \sqrt{341}}{21} \text{ m}^3$$

$$= 241.73 \text{ m}^3$$

④



capacity of tank

$$= \frac{2}{3} \pi r^3$$

$$= \frac{2}{3} \times \frac{22}{7} \times 7 \times 7 \times 7$$

$$= \frac{2156}{3} \text{ m}^3$$

$$= \frac{2156}{3} \text{ kl} \quad [\because 1\text{m}^3 = 1\text{kl}]$$

water in tank = 50kl.

volume that is pumped in to fill tank

$$= \frac{2156}{3} - 50$$

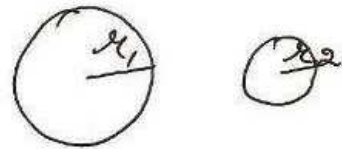
$$= \frac{2156 - 150}{3}$$

$$= \frac{2006}{3}$$

$$= 668.67 \text{ kl}$$

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⑤



$$\frac{V_1}{V_2} = \frac{64}{27}$$

$$\frac{\frac{4}{3} \pi r_1^3}{\frac{4}{3} \pi r_2^3} = \left(\frac{4}{3}\right)^3$$

$$\Rightarrow \left(\frac{r_1}{r_2}\right)^3 = \left(\frac{4}{3}\right)^3$$

$$\Rightarrow \frac{r_1}{r_2} = \frac{4}{3} \dots \text{①}$$

$$\frac{SA_1}{SA_2} = \frac{4\pi r_1^2}{4\pi r_2^2}$$

$$= \left(\frac{r_1}{r_2}\right)^2$$

$$= \left(\frac{4}{3}\right)^2 \text{ (use ①)}$$

$$= \frac{16}{9}$$

$$\therefore SA_1 : SA_2 = 16 : 9$$