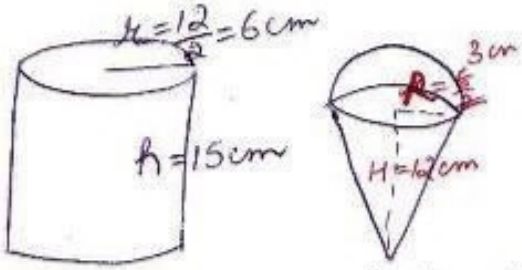
⑤



$$\text{no. of cones} = \frac{\text{vol of cyl}}{\text{vol of ice cream in one cone}}$$

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

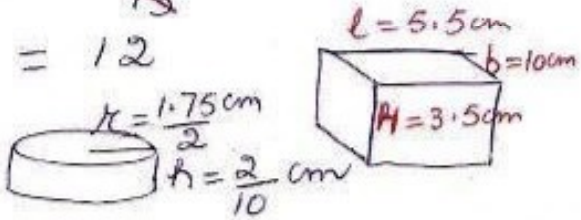
$$= \frac{\pi r^2 h}{\frac{1}{3}\pi R^2 (H+R)}$$

$$= \frac{6\times6\times15}{\frac{1}{3}\times3\times3\times(12+3)}$$

$$= \frac{6\times6\times5}{15}$$

$$= 12$$

⑥



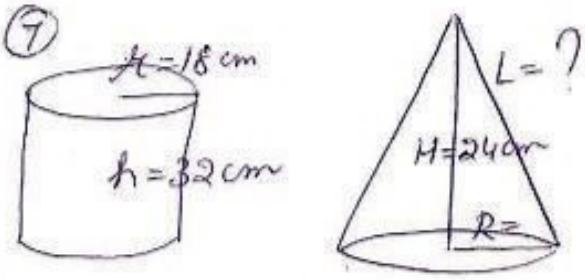
$$\text{no of coins} = \frac{\text{vol of cuboid}}{\text{vol of 1 coin}}$$

$$= \frac{lbH}{\pi r^2 h}$$

$$= \frac{5.5\times10\times3.5}{\frac{22}{7}\times\frac{1.75}{2}\times\frac{1.75}{2}\times\frac{2}{10}}$$

$$= 400$$

⑦



vol of conical heap = vol. of bucket

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

$$\frac{1}{3}R^2\times24 = 18\times18\times32$$

$$R^2 = 18\times18\times4$$

$$\Rightarrow R = \sqrt{18\times18\times2\times2}$$

$$= 36\text{ cm}$$

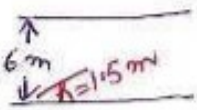
$$L = \sqrt{R^2+H^2}$$

$$= \sqrt{36^2+24^2}$$

$$= \sqrt{12^2(9+4)}$$

$$= 12\sqrt{13}\text{ cm}$$

⑧



area of field $H = \frac{8}{100}$ m

distance covered by water in 30 min $= \frac{10}{2}$

$= 5$ km

$= 5000$ m

vol of water flowing out = vol of water collected

lbh = area of field $\times H$

$$5000\times6\times1.5 = \text{area}\times\frac{8}{100}$$

$$\text{area} = 15000\times1.5\times25$$

$$= 562500\text{ m}^2$$

$$= 56.25\text{ hectares}$$