Exercise 13A

Question 6:

Length of wall = 15m
Breadth of wall = 0.3m
Height of wall = 4m

$\therefore$ Volume of the wall = $(15 \times 0.3 \times 4)\ m^3 = 18 m^3$

$$\text{Volume of mortar} = \left(\frac{1}{12} \times 18\right) = 1.5\ m^3$$

$$\text{Volume of wall} = (18 - 1.5)m^3 = 16.5 = \frac{33}{2}\ m^3$$

Length of brick = 22 cm
Breadth of brick = 12.5 cm
Height of brick = 7.5 cm

$$\therefore \text{ Volume of 1 brick} = \left(\frac{22}{100} \times \frac{12.5}{100} \times \frac{7.5}{100}\right) m^3$$

$$= \left(\frac{33}{16000}\right) m^3$$

$$\therefore \text{Number of bricks} = \frac{\text{Volume of bricks}}{\text{Volume of 1brick}}$$

$$= \left(\frac{33}{2} \times \frac{16000}{33}\right) = 8000$$

Question 7:

External length of cistern = 1.35 m = 135 cm
External breadth of cistern = 1.08 m =108 cm
External height of cistern = 90cm
$\therefore$ External volume of cistern = $(135 \times 108 \times 90)\ cm^3$
$= 1312200\ cm^3$

Internal length of cistern = $(135 - 2 \times 2.5)$ cm
$= (135 - 5)$ cm $= 130$ cm
Internal breadth of cistern = $(108 - 2 \times 2.5)$ cm
$= (108 - 5)$ cm $= 103$ cm
Internal height of cistern = $(90 - 2.5)$ cm $= 87.5$ cm
$\therefore$ Capacity of the cistern = Internal volume of cistern
$= (130 \times 103 \times 87.5)\ cm^3$
$= 1171625\ cm^3$

Volume of the iron used = External volume of the cistern
-Internal volume of the cistern
$= (1312200 - 1171625)\ cm^3$
$= 140575\ cm^3$

********** END **********