ANSWER WORKSHEET 1

1. (i) a^3

   (ii) 1×100^3 = **1000 000 cm^3**

2. (i) Volume = l x b x h

   $= 3 \times 2 \times 6$

   = **36 cm^3**

   Total surface area = 2(lb + bh + hl)

   $= 2 [(3 \times 2) + (2 \times 6) + (6 \times 3)]$

   $= 2[6 + 12 + 18]$

   $= 2 \times 36 =$ **72cm^2**

(ii) Volume = $\pi r^2 h$

   $= \dfrac{22}{7} \times \cancel{7} \times 7 \times 12$

   $= 22 \times 7 \times 12 =$ **1848 cm^3**

   Total surface area = 2πr(r + h)

   $= 2 \times \dfrac{22}{7} \times 7 \times (7+12)$

   $= 2 \times \dfrac{22}{\cancel{7}} \times \cancel{7} \times 19$

   $= 2 \times 22 \times 19 =$ **836 cm^2**

(iii) Volume = l x b x h

   $= 120 \times 10 \times 96$

   = **115200mm^3**

   Total surface area = 2(lb + bh + hl)

$$= 2[\,(120 \times 10) + (10 \times 96) \times (96 \times 120)]$$

$$= 2(\,1200 + 960 + 11520)$$

$$= 2 \times 13680 = \textbf{27360 mm}^2$$

(iv) Volume $= \pi r^2 h$

$$= \frac{22}{7} \times \frac{1.2}{2} \times \frac{1.2}{2} \times 4$$

$$= \frac{22}{7} \times 0.6 \times 0.6 \times 4$$

$$= \frac{31.68}{7} = \textbf{4.53 m}^3 \textbf{ (approx.)}$$

Total surface area $= 2\pi r(r + h)$

$$= 2 \times \frac{22}{7} \times 0.6 \times (0.6 + 4)$$

$$= 2 \times \frac{22}{7} \times 0.6 \times 4.6$$

$$= \frac{121.44}{7} = \textbf{17.35 m}^3 \textbf{ (approx.)}$$

(v) Volume = Volume of bigger cuboid + Volume of smaller cuboid

$$= (l_{bigger} \times b_{bigger} \times h_{bigger}) + (l_{smaller} \times b_{smaller} \times h_{smaller})$$

$$= (12 \times 8 \times 5) + (7 \times 3 \times 2)$$

$$= 480 + 42 = \textbf{522cm}^3$$

Total surface area $= 2(5 \times 12) + 2(5 \times 8) + 2(12 \times 8) + 2(2 \times 7) + 2(3 \times 2)$

$$= (2 \times 60) + (2 \times 40) + (2 \times 96) + (2 \times 14) + (2 \times 6)$$

$$= 120 + 80 + 192 + 28 + 12$$

$$= \textbf{432 cm}^2$$

3. Volume of prism = base area x height

Base area of the given prism is a TRAPEZIUM

Therefore, Base area = Area of trapezium

$$= \frac{1}{2} \text{ x sum of parallel sides x height}$$

$$= \frac{1}{2} \text{ x } (8 + 5) \text{ x } 6$$

$$= \frac{1}{2} \text{ x } 13 \text{ x } 6^{3}$$

$$= 13 \text{ x } 3 = 39 \text{ cm}^{2}$$

Volume of prism = base area x height

$$= 39 \text{ x } 12 = \textbf{468cm}^{3}$$