

PHYSICS – Grade 8 Worksheet Week 1 – solutions

1.

- a. Volume is the space occupied by an object.
- b. m^3
- c. cm^3 , l, ml, cl, mm^3 (any 3 of)

2.

- a. $33000 \text{ mm}^3 = 33000/1000 = 33 \text{ cm}^3$
- b. $25 \text{ m}^3 = 25 \times 1000000 = 25000000 \text{ cm}^3$
- c. $1.3 \text{ cm}^3 = 1.3 \times 1000 = 1300 \text{ mm}^3$

3.

- a. A regular solid is one which has a well-defined shape.
- b. Any example of a cube or cuboid or sphere or cylinder or cone.
- c.

(i)

$$\begin{aligned}\text{Volume of cube} &= 1 \times 1 \times 1 \\ &= 1 \times 1 \times 1 = 1 \text{ cm}^3\end{aligned}$$

(ii)

$$\begin{aligned}\text{Volume of cube} &= 1 \times 1 \times 1 \\ &= 2 \times 2 \times 2 = 8 \text{ cm}^3\end{aligned}$$

(iv)

$$\begin{aligned}\text{Volume of cuboid} &= l \times w \\ &\times h = 8 \times 5 \times 13 = 520 \text{ cm}^3\end{aligned}$$

(v)

$$\begin{aligned}\text{Volume of cuboid} &= l \times w \\ &\times h = 8 \times 5 \times 7 = 280 \text{ cm}^3\end{aligned}$$

4.

- a. Rock, seashell, stone, used eraser, jewelry (any sensible example)
- b.

- i. Avoid parallax error when reading the volumes.
Avoid splashing when placing the ring in the water.
Place the measuring cylinder on a flat horizontal surface.

ii. $\text{Volume of ring} = V_2 - V_1 = 68 - 64 = 4 \text{ cm}^3$

5. One common error in measurement is parallax error.

- a. Parallax error is the wrong positioning of the eye when reading a scale.
- b. Parallax error is avoided by placing the line of sight perpendicular to the scale at the reading.

c. The second position of the eye

6.

a. Density is mass per unit volume.

b. kg/m^3

c. Convert the following:

i. $2.34 \text{ g/cm}^3 = 2.34 \times 1000 = 2340 \text{ kg/m}^3$

ii. $0.345 \text{ g/cm}^3 = 0.345 \times 1000 = 345 \text{ kg/m}^3$

iii. $1100 \text{ kg/m}^3 = 1100/1000 = 1.1 \text{ g/cm}^3$

iv. $987 \text{ kg/m}^3 = 987/1000 = 0.987 \text{ g/cm}^3$