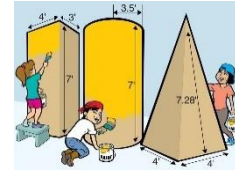




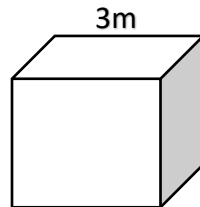
Grade 8 - Mathematics

Surface Area and Volume 3



Memo

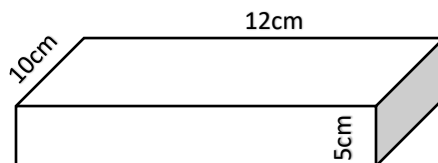
1. Calculate the volume and capacity (in *kl*) of the following cube.



$$\begin{aligned} V &= l \times b \times h \\ &= 3\text{m} \times 3\text{m} \times 3\text{m} \\ &= 27\text{m}^3 \end{aligned}$$

$$\begin{aligned} \text{C: } 1\text{m}^3 &= 1000\text{l} \\ 27\text{m}^3 &= 27\,000\text{l} \\ 27\,000\text{l} &= 27\text{kl} \end{aligned}$$

2. Calculate the volume and capacity (in *l*) of the following rectangular prism.



$$\begin{aligned} V &= l \times b \times h \\ &= 12\text{cm} \times 10\text{cm} \times 5\text{cm} \\ &= 600\text{cm}^3 \end{aligned}$$

$$\begin{aligned} \text{C: } 1\text{cm}^3 &= 1\text{ml} \\ 600\text{cm}^3 &= 600\text{ml} \\ 600\text{ml} &= 0,6\text{l} \end{aligned}$$



WorksheetCloud

3. Jack has a sandbox in his yard. The measurements of the sandbox are 3m long, 2m wide and 1m deep.
- How many litres of sand will he need to fill this box?
 - What will the sand cost if it is sold in bags of 1,5kl at a price of R36 per bag?

$$\begin{aligned} \text{a. } V \text{ of sandbox} &= l \times b \times h \\ &= 3\text{m} \times 2\text{m} \times 1\text{m} \\ &= 6\text{m}^3 \end{aligned}$$

$$\begin{aligned} \text{C: } 1\text{m}^3 &= 1000\text{l} \\ 6\text{m}^3 &= 6000\text{l} \end{aligned}$$

$$\begin{aligned} \text{b. } 6000\text{l} &= 6\text{kl} \\ 6\text{kl} \div 1,5\text{kl} &= 4 \text{ bags} \\ 4 \times \text{R}36 &= \text{R}144 \end{aligned}$$

4. Thabo uses a rectangular container to fill up a tub. The container is 12cm tall and has a square base. The sides of the base are 6cm. It will take 8 containers to fill up the tub. What is the capacity of the tub in l?

$$\begin{aligned} V \text{ of container} &= l \times b \times h \\ &= 12\text{cm} \times 6\text{cm} \times 6\text{cm} \\ &= 432\text{cm}^3 \end{aligned}$$

$$\begin{aligned} V \text{ of 8 containers} &= 432\text{cm}^3 \times 8 \\ &= 3\,456\text{cm}^3 \end{aligned}$$

$$\begin{aligned} \text{C: } 1\text{cm}^3 &= 1\text{ml} \\ 3\,456\text{cm}^3 &= 3\,456\text{ml} \\ 3\,456\text{ml} &= 3,456\text{l} \end{aligned}$$

The capacity of the tub is 3,456l