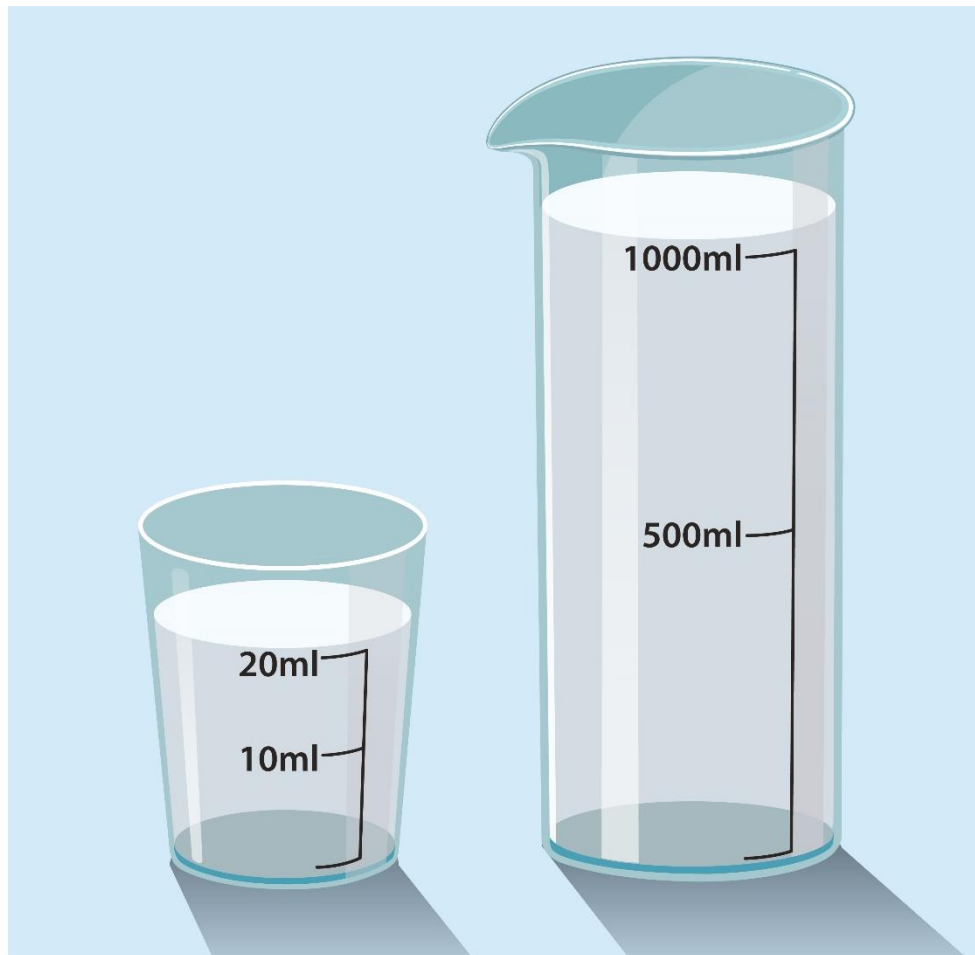


PSLE 2023 Math Question – Volume

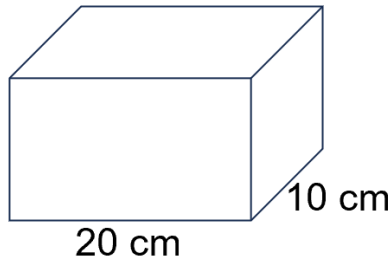


The main aim of this math revision note is to help your child become better at solving PSLE Math volume questions.

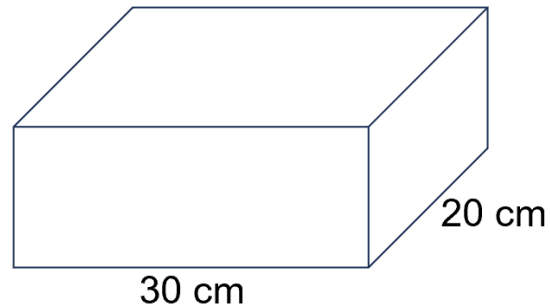
The question assesses your child's capacity to eliminate excess volume, utilize the combined base area, determine the water level, and subsequently solve the related problems.

PSLE 2023 Math Question – Volume

Tank X



Tank Y



The total amount of water in both tanks was $21\,400\text{ cm}^3$. The height of water in Tank Y was 5 cm higher than Tank X.

- What is the water level in Tank X?
- 3300 cm^3 of water was poured out from Tank Y. The water level height is now half the height of Tank Y. What is the actual height of Tank Y?

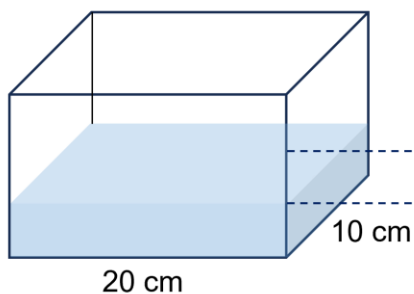
Solutions

a)

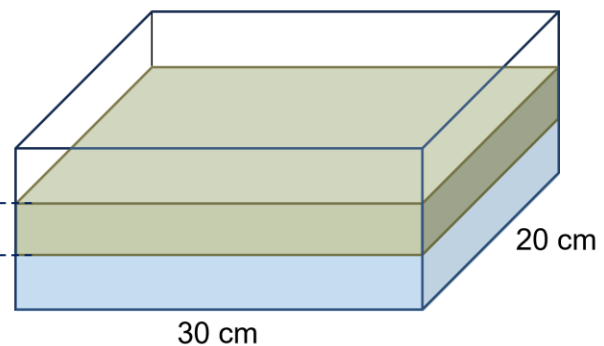
The water level in Tank Y is 5 cm higher than in Tank X.

We can find out the extra amount of water that is sitting on top of the shared heights as shown.

Tank X

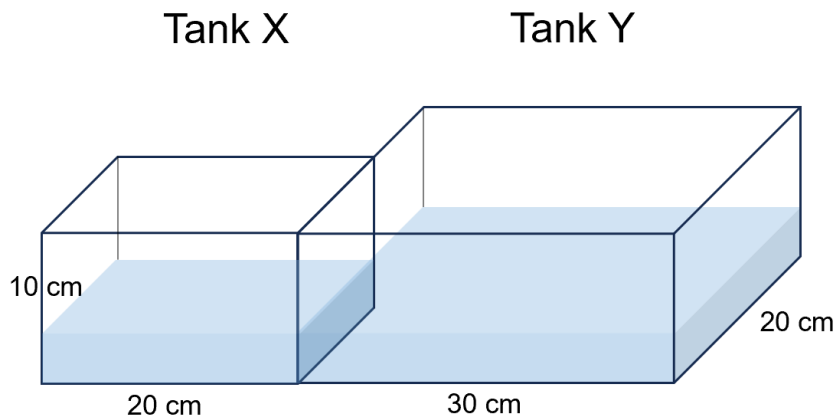


Tank Y



$$\begin{aligned}\text{Extra volume of water} &= 30\text{ cm} \times 20\text{ cm} \times 5\text{ cm} \\ &= 3000\text{ cm}^3\end{aligned}$$

$$\begin{aligned}\text{Combined volume of water (of the same height)} &= 21\,400\text{ cm}^3 - 3000\text{ cm}^3 \\ &= 18\,400\text{ cm}^3\end{aligned}$$



$$\begin{aligned}\text{Combined base area} &= 20\text{ cm} \times 10\text{ cm} + 30\text{ cm} \times 20\text{ cm} \\ &= 200\text{ cm}^2 + 600\text{ cm}^2 \\ &= 800\text{ cm}^2\end{aligned}$$

$$\begin{aligned}\text{Water level in X} &= 18\,400\text{ cm}^3 \div 800\text{ cm}^2 \\ &= 23\text{ cm}\end{aligned}$$

b)

$$\begin{aligned}\text{Water level in Tank Y before } 3300\text{ cm}^3 \text{ of water was poured out} \\ &= 23\text{ cm} + 5\text{ cm} \\ &= 28\text{ cm}\end{aligned}$$

$$\begin{aligned}\text{Volume in Tank Y before } 3300\text{ cm}^3 \text{ of water was poured out} \\ &= 28\text{ cm} \times 30\text{ cm} \times 20\text{ cm} \\ &= 16\,800\text{ cm}^3\end{aligned}$$

$$\begin{aligned}\text{Volume in Tank Y after } 3300\text{ cm}^3 \text{ of water was poured out} \\ &= 16\,800\text{ cm}^3 - 3\,300\text{ cm}^3 \\ &= 13\,500\text{ cm}^3\end{aligned}$$

$$\frac{1}{2} \text{ of Tank Y} = 13\,500 \text{ cm}^3$$

$$\frac{2}{2} \text{ of Tank Y} = 13\,500 \text{ cm}^3 \times 2 = 27\,000 \text{ cm}^3$$

$$\begin{aligned} \text{Actual height of Tank Y} &= 27\,000 \text{ cm}^3 \div 30 \text{ cm} \div 20 \text{ cm} \\ &= 45 \text{ cm} \end{aligned}$$

To Your Child's Success,



Ms Nelly Ke
Math Specialist
Jimmy Maths and Grade Solution Learning Centre

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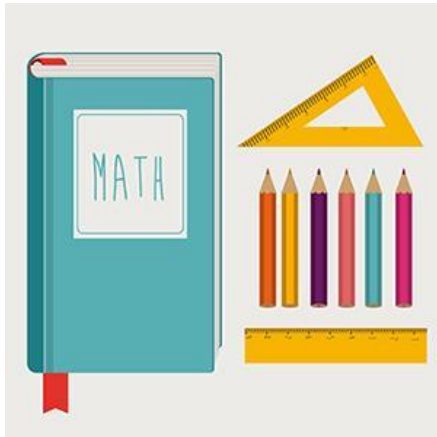
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