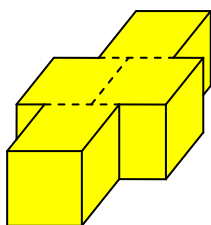


**20. [Measurement] [Examined in 2011]****Solution****Approach I – volume**

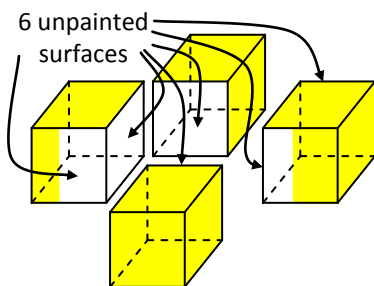
In a woodwork class, a student Jacky made a block figure of wood as shown below. The block is then dipped into a pail of paint. After the paint dried, the block is cut into 4 identical cubes along the dotted lines and taken apart. Jack measures the total unpainted area of the 4 cubes to be  $150 \text{ cm}^2$ .



☆☆☆

∴ Let  $V$  be the volume of each cube.

Labelling and counting the unpainted surfaces,



Deduce that,

$$\begin{aligned} \text{Area of the unpainted surfaces} &= 150 \text{ m}^2 \\ &= 6 \text{ surfaces} \end{aligned}$$

$$\Rightarrow 6 \times \text{side}^2 = 150$$

$$\Rightarrow 6 \times \text{side}^2 \div 6 = 150 \div 6$$

$$\Rightarrow \text{side}^2 = \frac{150}{6} = \frac{150 \cancel{75} 25}{\cancel{6} \cancel{3} 1}$$

$$\Rightarrow \text{side}^2 = \frac{150}{6} = \frac{150 \cancel{75} 25}{\cancel{6} \cancel{3} 1} = 25 \text{ cm}^2$$

$$\Rightarrow \text{side} \times \text{side} = 5 \text{ cm} \times 5 \text{ cm}$$

$$\Rightarrow \text{side} = 5 \text{ cm}$$

∴ The volume of each cube is

$$\therefore V = \text{side} \times \text{side} \times \text{side}$$

$$= 5 \text{ cm} \times 5 \text{ cm} \times 5 \text{ cm}$$

$$= 125 \text{ cm}^3 \text{ (ans)}$$

☺ **CheckBack**

There is no easy *CheckBack* option for this question.

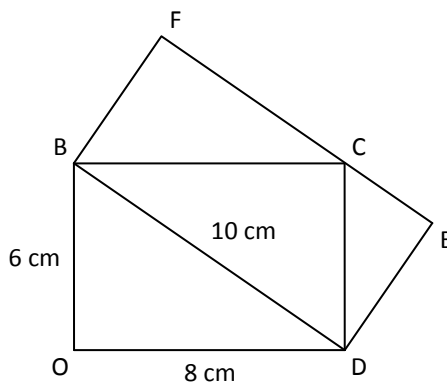
(checked)

☺ **Exam Report**

Quite a number of candidates gave the correct answer for this question.

**21. [Measurement] [Examined in 2011]****Solution****Approach I – geometry**

In the figure below, OBCD and BDEF are rectangles and point C lies on the straight line EF. OB = 6 cm, OD = 8 cm and BD = 10 cm.



☆☆☆