

5) b)

Answer

$$\text{Length of box} = 5 \text{ cm} \rightarrow 5 \text{ cm} \div 5 \text{ cm} = 1$$

$$\text{Width of box} = 20 \text{ cm} \rightarrow 20 \text{ cm} \div 5 \text{ cm} = 4$$

$$\text{Height of box} = 10 \text{ cm} \rightarrow 10 \text{ cm} \div 5 \text{ cm} = 2$$

$$\begin{aligned} \text{Number of cubes} &= 1 \times 4 \times 2 && 1 \\ &= 8 && \end{aligned}$$

Answer: 8 1

Total: 2

Method

Divide the length of the box by the side length of the cube to find out how many cubes fit along the length.

Repeat this calculation for the width and the height of the box.

Multiply the three results together to find the total number of cubes that will fit in the box.

Top Tip

In questions about fitting a small item into a large item, look at each dimension separately as shown in the method above.

For this particular question, you could have divided the volume of the box (1000 cm^3) by the volume of a cube ($5 \times 5 \times 5 = 125 \text{ cm}^3$) and got the same answer. However, this method will not always give you the correct answer.

For example, if 2 cm cubes were used, this method would give you an answer of $1000 \text{ cm}^3 \div 8 \text{ cm}^3 = 125$ cubes. When, in reality, you can only fit 2 cubes along the 5 cm length of the box, so the correct answer is $2 \times 10 \times 5 = 100$ cubes.