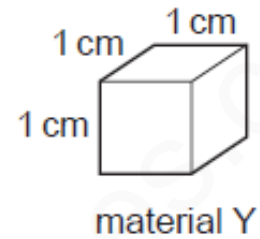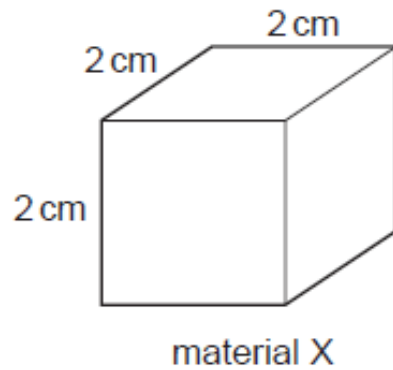# MEASUREMENT, DENSITY, MASS AND VOLUME-SET-2-MS

1 The cubes shown are made of different materials, but they have the same mass.

material X   material Y

The density of material X is $1\,g/cm^3$.

What is the density of material Y?

A $\frac{1}{8}\,g/cm^3$ **B** $\frac{1}{2}\,g/cm^3$ **C** $2\,g/cm^3$ **D** $8\,g/cm^3$

2   A student needs to find the density of a large cubic block of wood.

Which two pieces of apparatus should she use?

   A   balance and metre rule

   B   balance and thermometer

   C   measuring cylinder and metre rule

   D   measuring cylinder and thermometer

3   In an experiment, a student measures the time taken for an object to fall to the ground. He carries out the experiment ten times. The table shows his results.
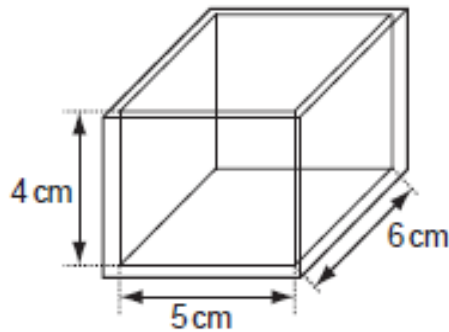
time / s	26.4	26.8	26.4	24.4	24.0	26.8	25.4	23.4	26.4	24.0

Which value should the student use?
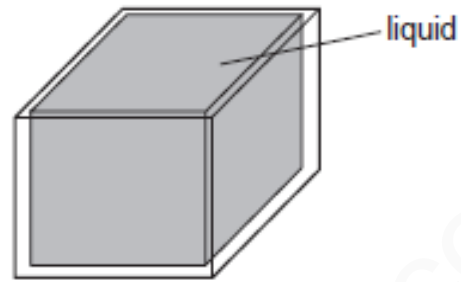
A   24.0 s   **B**   25.4 s   **C**   26.4 s   **D**   26.8 s

4

The diagrams show a glass tank with inside measurements of 5 cm × 6 cm × 4 cm.


mass = 40 g   total mass = 220 g

The tank has a mass of 40 g when empty. When the tank is filled with a liquid, the tank and liquid have a total mass of 220 g.

What is the density of the liquid?

A $\dfrac{220}{(5 \times 6 \times 4)}$ g/cm³

B $\dfrac{(220 - 40)}{(5 \times 6 \times 4)}$ g/cm³

C $\dfrac{(5 \times 6 \times 4)}{220}$ g/cm³

D $\dfrac{(5 \times 6 \times 4)}{(220 - 40)}$ g/cm³

5 A girl uses a rule to measure the length of a metal rod. Because the end of the rule is damaged, she places one end of the rod at the 1 cm mark as shown.
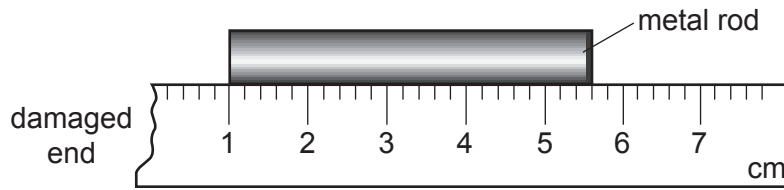

How long is the metal rod?

A 43 mm   **B** 46 mm   **C** 53 mm   **D** 56 mm

Which of the following statements is correct?

A   Mass and weight are different names for the same thing.

B   The mass of an object is different if the object is taken to the Moon.

C   The weight of a car is one of the forces acting on the car.

D   The weight of a chocolate bar is measured in kilograms.

6 The masses of a measuring cylinder before and after pouring some liquid are shown in the diagram.
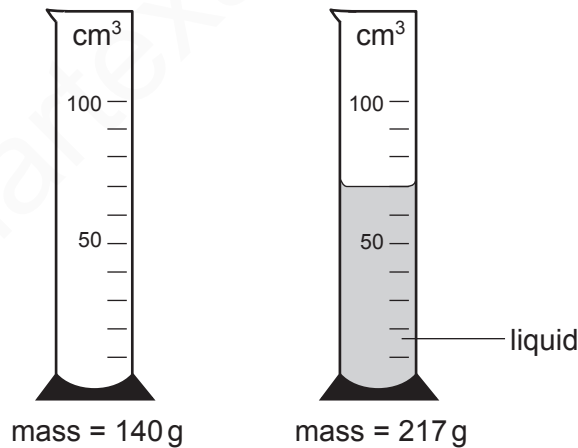
What is the density of the liquid?

A $\dfrac{217}{52}$ g/cm^3 **B** $\dfrac{217}{70}$ g/cm^3 **C** $\dfrac{77}{52}$ g/cm^3 **D** $\dfrac{77}{70}$ g/cm^3

7 A student tries to find the density of a metal block. First he measures the weight with a forcemeter (spring balance). Next he measures the sides of the block using a rule, in order to calculate the volume of the block. Finally he divides the weight by the volume to find the density.
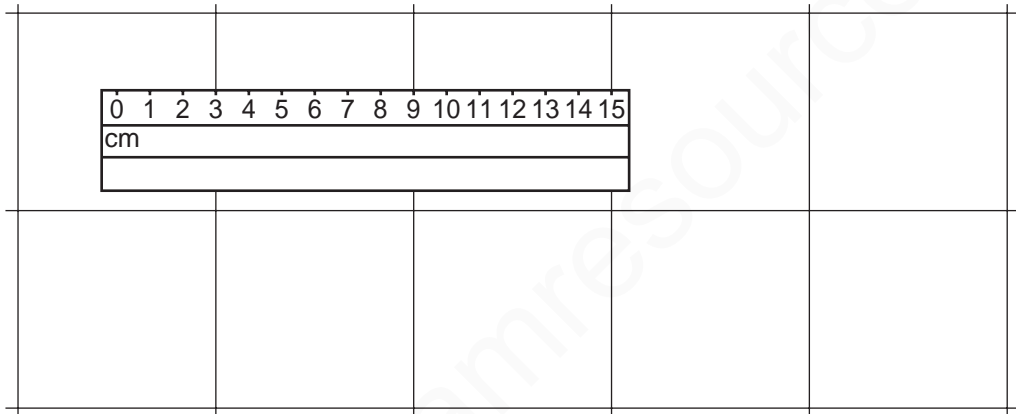
The student has made a mistake.

Why does his method **not** give the density?

A Density is volume divided by weight.

B He should have measured the surface area, not the volume.

C He should have used the mass in his calculation, not the weight.

D Weight is not measured with a forcemeter (spring balance).

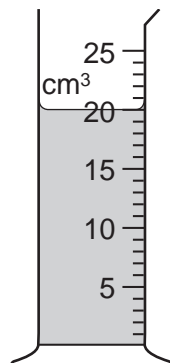**8** A floor is covered with square tiles. The diagram shows a ruler on the tiles.

How long is one tile?

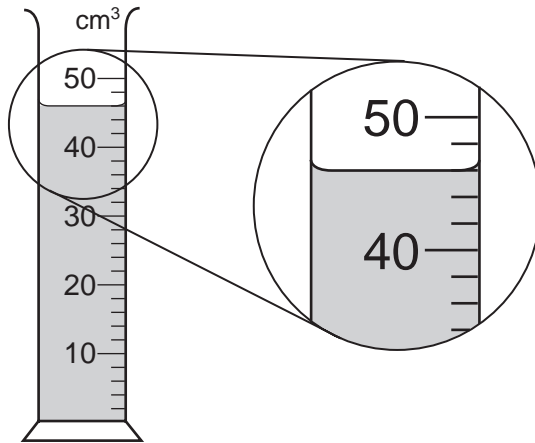**A**   3 cm   **B**   6 cm   **C**   9 cm   **D**   12 cm

9 The diagram shows some liquid in a measuring cylinder. The mass of the liquid is 16 g.

What is the density of the liquid?

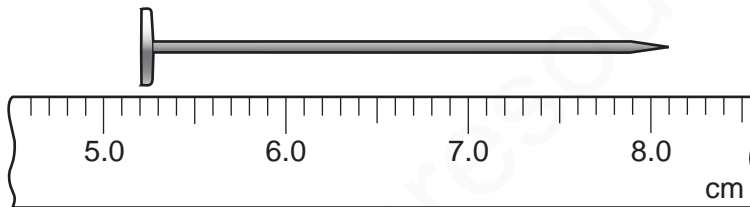**A**   320 g/cm^3 **B**   36 g/cm^3 **C**   1.25 g/cm^3 **D**   0.8 g/cm^3

10 A measuring cylinder is used to measure the volume of a liquid.

What is the volume of the liquid?

A 43 cm^3 **B** 46 cm^3 **C** 48 cm^3 **D** 54 cm^3
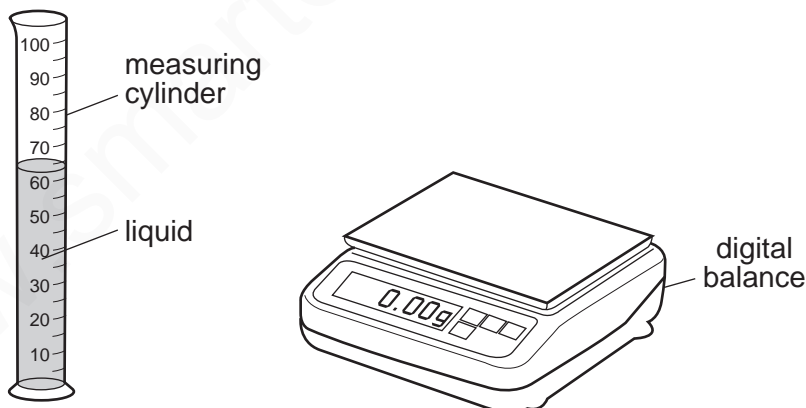
11 A ruler is used to measure the length of a nail.

What is the length of the nail?

A 1.3 cm **B** 2.9 cm **C** 5.2 cm **D** 8.1 cm

12 A student pours liquid into a measuring cylinder.

The student records the volume of the liquid from the scale on the measuring cylinder. He then puts the measuring cylinder containing the liquid on a balance and records the mass.

What else needs to be measured before the density of the liquid can be calculated?

A the depth of the liquid in the measuring cylinder

B the mass of the empty measuring cylinder

C the temperature of the liquid in the measuring cylinder

D the volume of the empty measuring cylinder