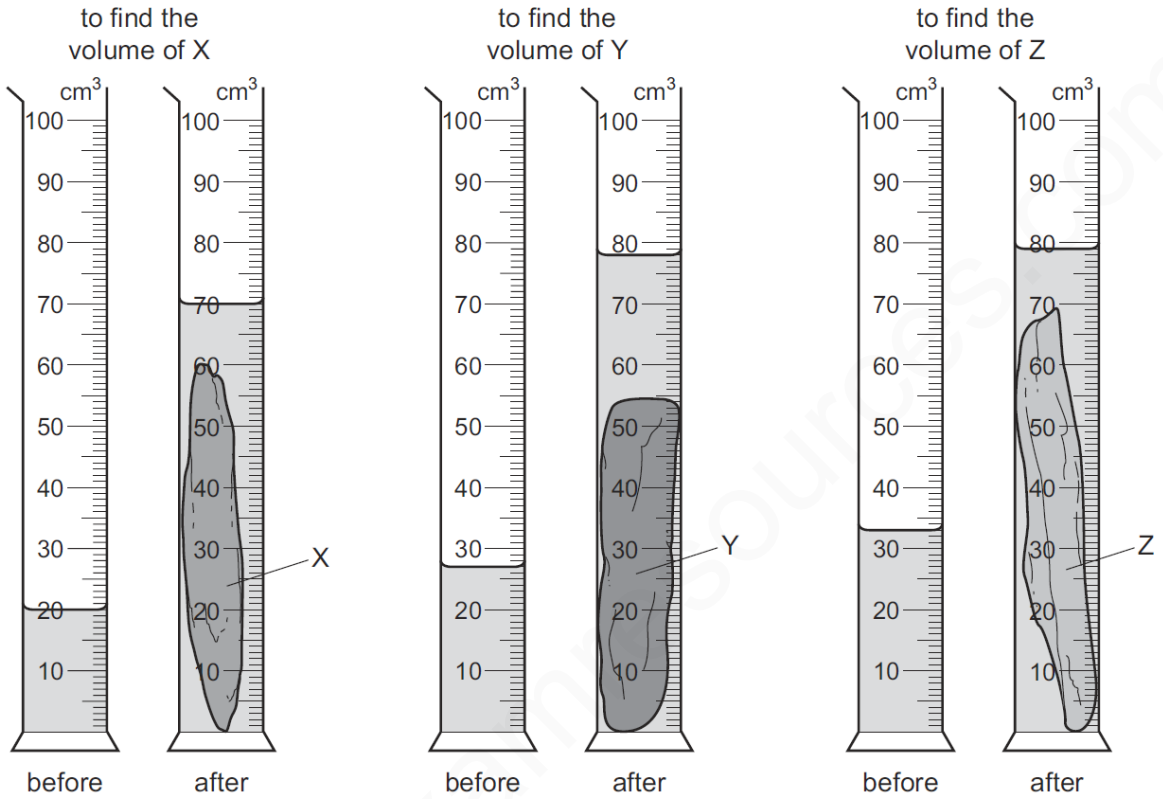


### MEASURING VOLUME-SET-3

1 A geologist compares the volumes of three rocks, X, Y and Z. Three measuring cylinders contain different volumes of water. He places each rock into one of the measuring cylinders.

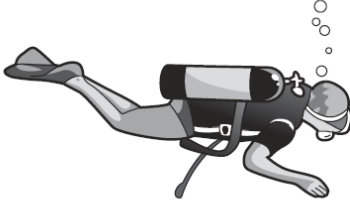
The diagrams show the measuring cylinders before and after the rocks are put in.



Which row shows the volumes of X, Y and Z in order, from largest to smallest?

	largest volume	→	smallest volume
<b>A</b>	X	Z	Y
<b>B</b>	Y	X	Z
<b>C</b>	Y	Z	X
<b>D</b>	Z	Y	X

2 A diver under water uses breathing apparatus at a depth where the pressure is  $1.25 \times 10^5 \text{ Pa}$ .



A bubble of gas breathed out by the diver has a volume of  $20 \text{ cm}^3$  when it is released. The bubble moves upwards to the surface of the water.

At the surface of the water, the atmospheric pressure is  $1.00 \times 10^5 \text{ Pa}$ .

The temperature of the water is the same at all depths.

What is the volume of this bubble when it reaches the surface?

**A**  $15 \text{ cm}^3$       **B**  $16 \text{ cm}^3$       **C**  $20 \text{ cm}^3$       **D**  $25 \text{ cm}^3$

3 A student uses a measuring cylinder to measure the volume of a quantity of water.

Which action would make her result **less** accurate?

**A** making sure her eye is level with the water surface

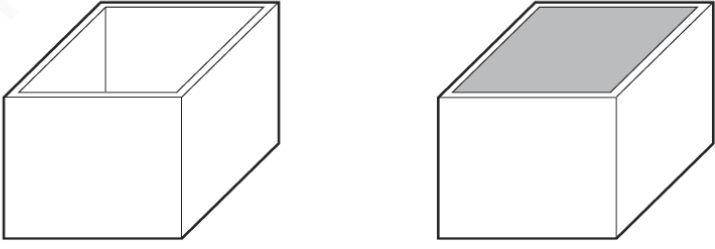
**B** making sure the cylinder is vertical

**C** reading the bottom of the meniscus

**D** using the largest measuring cylinder possible

4 The diagrams show an empty rectangular box, and the same box filled with liquid.

The box has a mass of  $60 \text{ g}$  when empty. When filled with liquid, the total mass of the box and the liquid is  $300 \text{ g}$ .



The density of the liquid is  $1.2 \text{ g/cm}^3$ .

What is the volume of the liquid in the box?

**A**  $50 \text{ cm}^3$       **B**  $200 \text{ cm}^3$       **C**  $250 \text{ cm}^3$       **D**  $300 \text{ cm}^3$

5

A student measures the volume of a cork.

He puts some water into a measuring cylinder and then one glass ball. He puts the cork and then a second, identical glass ball into the water as shown.

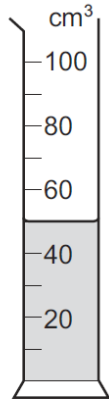


diagram 1

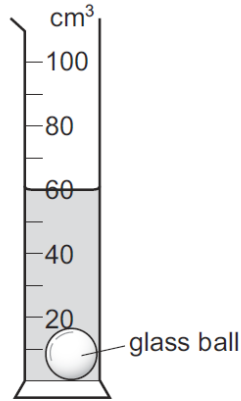


diagram 2

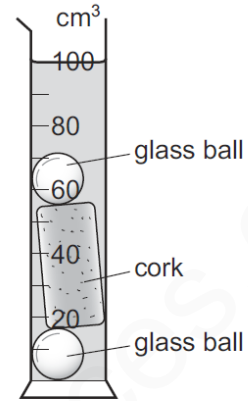


diagram 3

Diagram 1 shows the first water level.

Diagram 2 shows the water level after one glass ball is added.

Diagram 3 shows the water level after the cork and the second glass ball are added.

What is the volume of the cork?

**A** 30 cm<sup>3</sup>

**B** 40 cm<sup>3</sup>

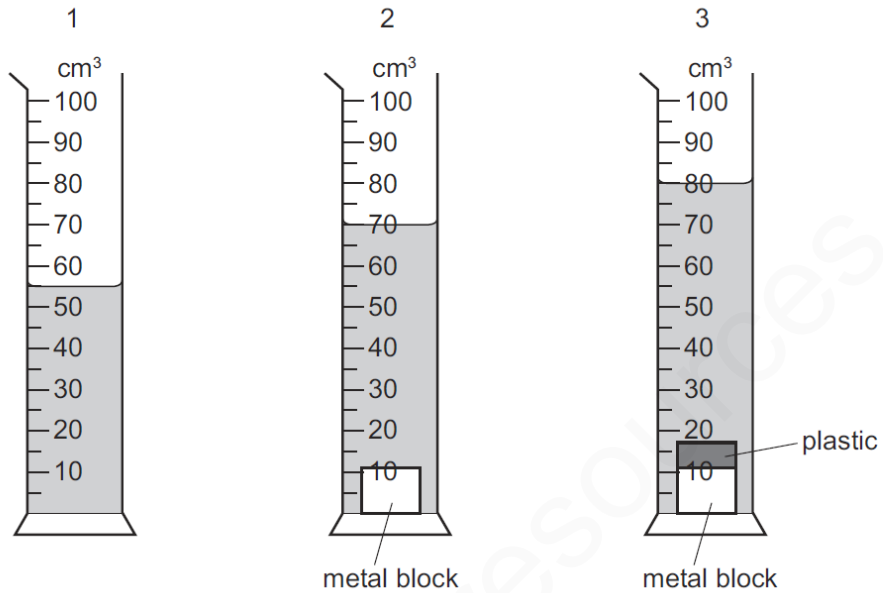
**C** 50 cm<sup>3</sup>

**D** 100 cm<sup>3</sup>

6 A measuring cylinder contains some water. A small metal block is slowly lowered into the water and is then removed.

Finally a piece of plastic is attached to the metal block and the block is again slowly lowered into the water.

The diagrams show the measuring cylinder at each stage of this process.



What is the volume of the piece of plastic?

- A** 10 cm<sup>3</sup>      **B** 25 cm<sup>3</sup>      **C** 70 cm<sup>3</sup>      **D** 80 cm<sup>3</sup>

MS-6

A