

1.4 Density

Question Paper

Level	IGCSE
Subject	Physics (0625)
Exam Board	Cambridge International Examinations(CIE)
Topic	General Physics
Sub Topic	1.4 Density
Booklet	Question Paper

Time Allowed: 20 minutes

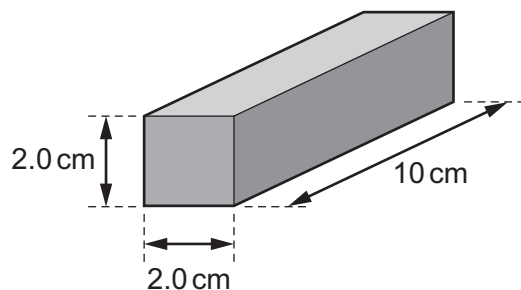
Score: /16

Percentage: /100

Grade Boundaries:

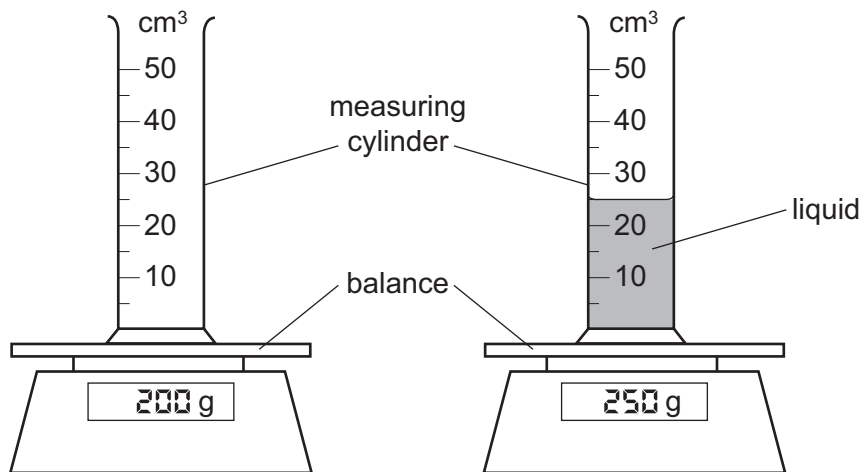
A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

- 1 The diagram shows a cuboid block made from a metal of density 2.5 g/cm^3 .



What is the mass of the block?

- A** 8.0g **B** 16g **C** 50g **D** 100g
- 2 The diagram shows an experiment to find the density of a liquid.



What is the density of the liquid?

- A** 0.5 g/cm^3 **B** 2.0 g/cm^3 **C** 8.0 g/cm^3 **D** 10.0 g/cm^3

- 3 Diagram 1 shows a piece of foam rubber that contains many pockets of air. Diagram 2 shows the same piece of foam rubber after it has been compressed so that its volume decreases.

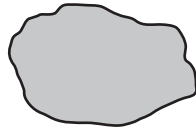


diagram 1
(before compression)

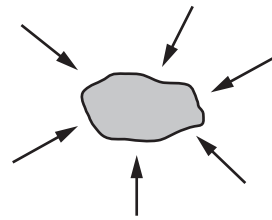
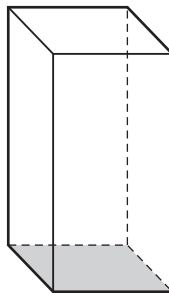


diagram 2
(after compression)

What happens to the mass and to the weight of the foam rubber when it is compressed?

	mass	weight
A	increases	increases
B	increases	no change
C	no change	increases
D	no change	no change

- 4 A student wishes to determine the density of the solid block shown.



Which quantities must be known?

- A** the area of the shaded face and the volume of the block
- B** the area of the shaded face and the weight of the block
- C** the mass of the block and the height of the block
- D** the mass of the block and the volume of the block

- 5 Two cylinders are made of the same metal. Both cylinders have the same cross-sectional area but one is longer than the other.



cylinder 1



cylinder 2

Which quantity is the same for both cylinders?

- A density
- B mass
- C resistance
- D volume

- 6 The mass of a piece of metal is 1200 g.

A measuring cylinder contains 150 cm^3 of water.

The piece of metal is put into the measuring cylinder. The water level rises to 250 cm^3 and covers the metal.

What is the density of the metal?

- A 3.0 g/cm^3
 - B 4.8 g/cm^3
 - C 8.0 g/cm^3
 - D 12.0 g/cm^3
- 7 A person measures the length, width, height and mass of a metal block with rectangular sides.
- Which of these measurements must be used in order to calculate the density of the metal?
- A mass only
 - B height and mass only
 - C length, width and height only
 - D length, width, height and mass

- 8 A liquid has a volume of 100 cm^3 and a mass of 85g.

The density of water is 1.0 g/cm^3 .

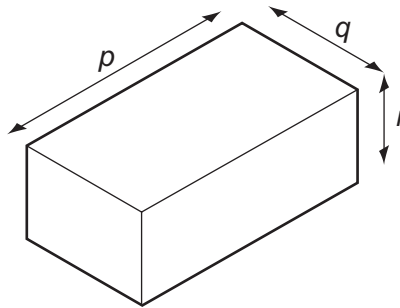
How does the density of the liquid compare with the density of water?

- A Its density is higher than that of water.
 - B Its density is lower than that of water.
 - C Its density is the same as that of water.
 - D It is impossible to say with only this data.
- 9 The table gives the volumes and masses of four objects.

Which object has the greatest density?

	mass/g	volume / cm^3
A	5.4	2.0
B	13	3.0
C	15	6.0
D	18	5.0

- 10 The diagram shows the dimensions of a rectangular block of metal of mass m .



Which expression is used to calculate the density of the metal?

- A** $m \times p \times q$
B $m \times p \times q \times r$
C $\frac{m}{(p \times q)}$
D $\frac{m}{(p \times q \times r)}$

- 11 Diagram 1 shows an empty measuring cylinder on a balance.

Diagram 2 shows the same measuring cylinder on the balance, but it now contains a liquid.

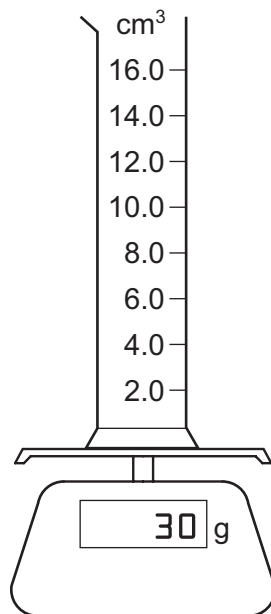


diagram 1

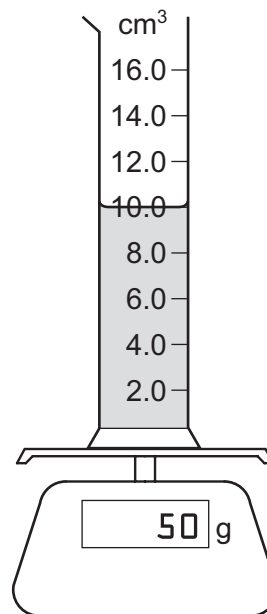


diagram 2

What is the density of the liquid?

- A** 0.2g/cm^3 **B** 0.5g/cm^3 **C** 2.0g/cm^3 **D** 5.0g/cm^3

- 12 A student is told to measure the density of a liquid and also of a large cube of metal.

Which pieces of equipment are sufficient to be able to take the measurements needed?

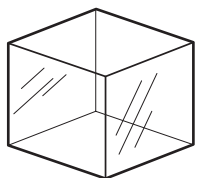
- A balance, measuring cylinder and ruler
- B balance and thermometer
- C measuring cylinder and ruler
- D measuring cylinder, ruler and thermometer

- 13 A student is given four different objects and a metre rule. Each object has a known mass. She is asked to determine the densities of the materials from which the four objects are made.

The objects are a copper cylinder, a glass cube, a steel spanner and a stone tile.



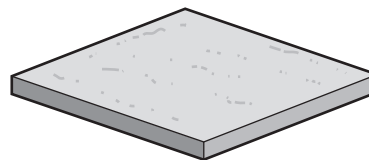
copper



glass



steel



stone

Using only the metre rule, she is able to find the densities of only three of the four materials.

Which three materials are these?

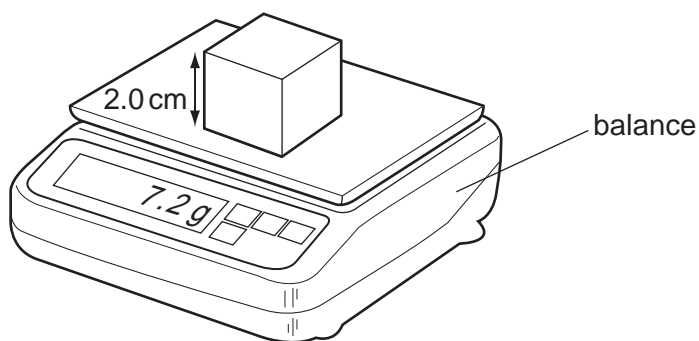
- A copper, glass and steel
- B copper, glass and stone
- C copper, steel and stone
- D glass, steel and stone

- 14 A stone has a volume of 0.50 cm^3 and a mass of 2.0 g .

What is the density of the stone?

- A 0.25 g/cm^3
- B 1.5 g/cm^3
- C 2.5 g/cm^3
- D 4.0 g/cm^3

- 15 A cube of side 2.0 cm is placed on a balance.



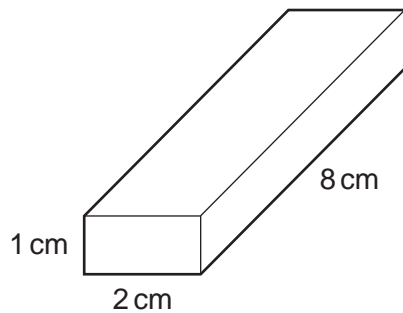
What is the density of the cube?

- A 0.90 g/cm^3
- B 1.2 g/cm^3
- C 1.8 g/cm^3
- D 3.6 g/cm^3

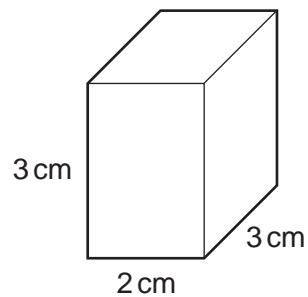
16 The diagrams show four blocks with the same mass.

Which block is made from the least dense material?

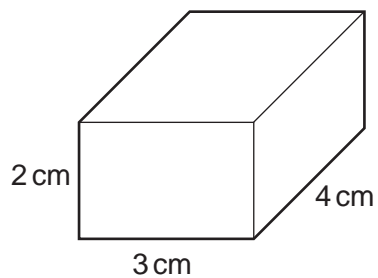
A



B



C



D

