

Mass, Weight & Density

Question Paper

Course	CIE IGCSE Physics
Section	1. Motion, Forces & Energy
Topic	Mass, Weight & Density
Difficulty	Medium

Time Allowed	20
Score	/12
Percentage	/100

Question 1

Which piece of equipment is used to measure the mass of an object?

- A. A burette
- B. A balance
- C. A thermometer
- D. A trundle wheel

[1 mark]

Question 2

A baker uses a balance to weigh out some ingredients to make bread.

She weighs out some white flour, then she weighs out some wholemeal flour. She notices that the reading on the balance is the same for both types of flour.

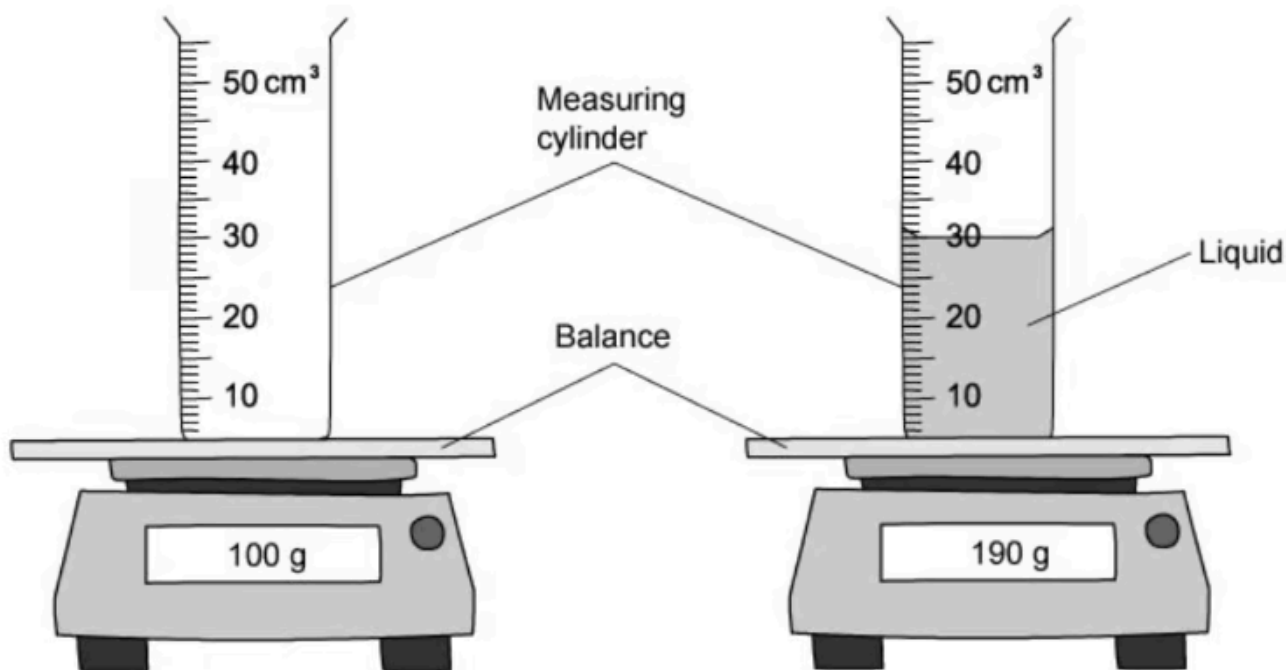
The baker can conclude that the two flours have the same:

- A. volume
- B. density
- C. weight
- D. internal energy

[1 mark]

Question 3

The diagram shows a measuring cylinder containing a liquid, and that same measuring cylinder when it is empty.



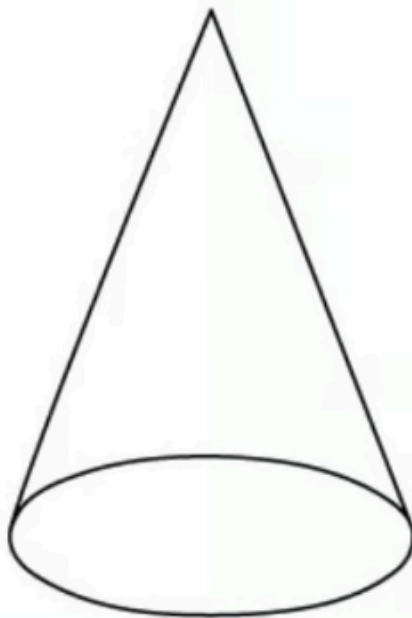
What is the density of the liquid?

- A. 6.30 g/cm^3
- B. 3.00 g/cm^3
- C. 0.33 g/cm^3
- D. 0.16 g/cm^3

[1 mark]

Question 4

A geologist wants to determine the density of the object shown below.



What needs to be known in order to calculate its density?

- A.** The radius of the base of the cone and the weight of the cone.
- B.** The surface area of the base of the cone and the height of the cone.
- C.** The volume of the cone and the mass of the cone.
- D.** The height of the cone and the mass of the cone.

[1 mark]

Question 5

Two beams have the same rectangular cross section, but one is longer than the other.

Both beams are made from the same material.



Which quantity is the same in both beams?

- A. The volume
- B. The weight
- C. The mass
- D. The density

[1 mark]

Question 6

A student wants to measure the density of a piece of rock. She starts by measuring its mass , and finds that it is 2500 g.

Next she puts 500 cm^3 of water into a large measuring cylinder , then adds the rock. The level in the measuring cylinder rises to 800 cm^3 .

What is the density of the rock?

- A. 8.33 g/cm^3
- B. 3.125 g/cm^3
- C. 0.12 g/cm^3
- D. 0.32 g/cm^3

[1 mark]

Question 7

Some unknown liquid in a beaker has a mass of 200 g and a volume of 230 cm^3 .

The density of water is 1.0 g/cm^3

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

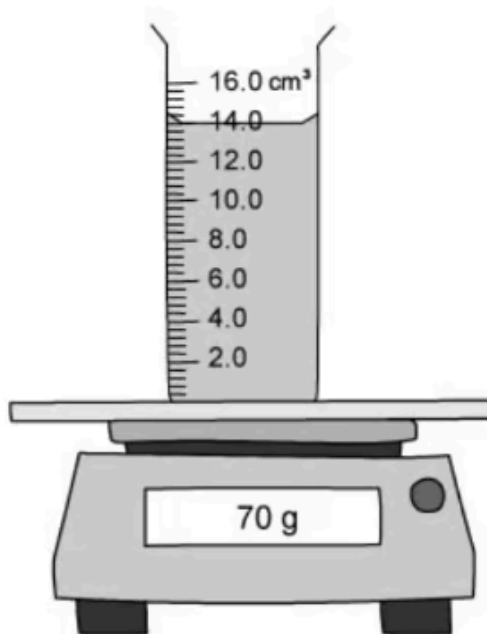
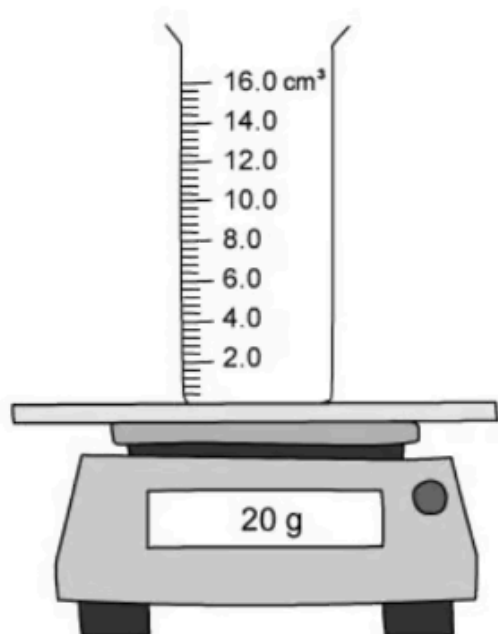
- A.** Its density is greater than the density of water
- B.** Its density is less than the density of water
- C.** Its density is the same as the density of water
- D.** With the information given, it is impossible to tell.

[1 mark]

Question 8

The two diagrams below show a measuring cylinder.

In the diagram on the left, the measuring cylinder is empty. In the diagram on the right, the measuring cylinder contains a liquid.



What is the density of the liquid?

- A. 0.20 g/cm³
- B. 5.00 g/cm³
- C. 0.28 g/cm³
- D. 3.57 g/cm³

[1 mark]

Question 9

A lump of butter has a volume of 350 cm^3 and a mass of 319 g .

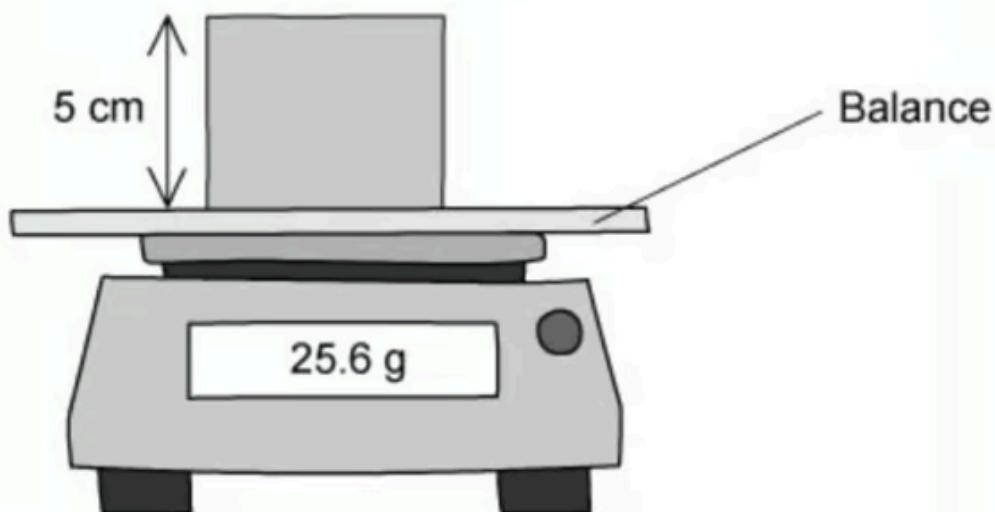
What is the density of the butter?

- A. 31 g/cm^3
- B. 1.10 g/cm^3
- C. 1.00 g/cm^3
- D. 0.911 g/cm^3

[1 mark]

Question 10

A cube of side length 5 cm is placed on a mass balance.



What is the density of the cube?

- A. 1.0 g/cm^3
- B. 0.20 g/cm^3
- C. 5.12 g/cm^3
- D. 4.88 g/cm^3

[1 mark]

Question 11

An astronaut has a mass of 80 kg on the Earth.

The gravitational field strength on the Moon is 1.6 N/kg.

What is the weight of the astronaut on the Moon?

- A. 50 kg
- B. 128 N
- C. 800 N
- D. 80 kg

[1 mark]

Question 12

The density of a block of wood is 2.7 g/cm^3 and a mass of 583.8 g.

What is its volume?

- A. 0.5 cm^3
- B. 21.6 cm^3
- C. 216.2 cm^3
- D. 1574.9 cm^3

[1 mark]