Q1.

A student investigates the density of a copper block and the density of a small stone, as shown in Figure 2.

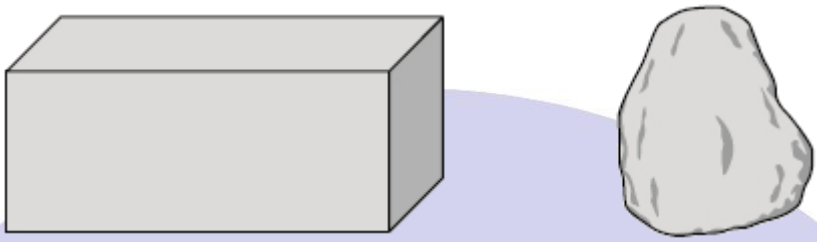

Figure 2

The student calculates the volume of the block as 13 cm^3.

She finds that the mass of the block is 100 g.

Calculate the density of the block.

Use the equation

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

(2)

density = ... g/cm^3

(Total for question = 2 marks)

Q2.

Figure 11 shows some water in a measuring cylinder and a lump of iron.

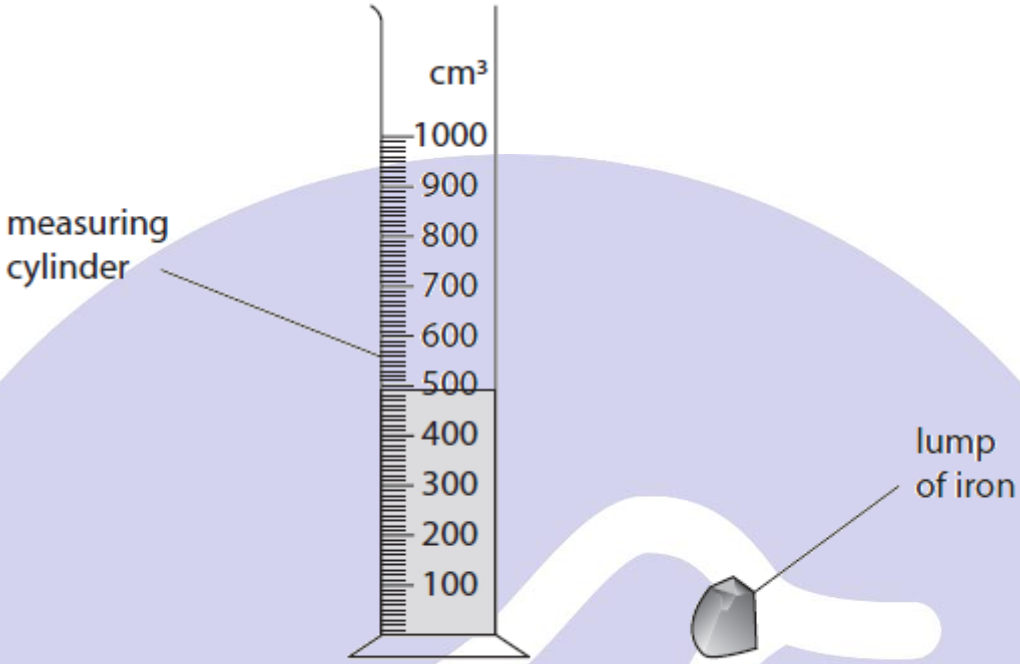

Figure 11

The lump of iron is lowered fully into the water.

The water level in the measuring cylinder rises to 530 cm^3.

The density of iron is 7.9 g / cm^3.

Calculate the mass of the lump of iron.

Use the equation

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

Give your answer to 2 significant figures.

(4)

mass = ... g

(Total for question = 4 marks)

Q3.

A coil of copper wire has a mass of 14.1 g.

The density, ρ, of copper is 8.96 g/cm^3.

Calculate the volume of the copper wire.

$$\rho = \frac{m}{V}$$

(3)

volume ..... cm^3

(Total for question = 3 marks)

Q4.

A steel ball has a volume of 3.6 cm^3 and a mass of 28 g.

(i) Calculate the density of steel in kg/m^3.

(3)

density = ... kg/m^3

(Total for question = 3 marks)

Q5.

Figure 9 shows a small piece of copper about 3 cm high.

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Figure 9

A student wants to determine the density of copper.

The student uses a balance to measure the mass of the piece of copper.

(ii) The mass of the piece of copper is 0.058 kg.

The volume of the piece of copper is 6.5×10^{-6} m^3.
Calculate the density of copper.

(2)

density of copper = ... kg/m^3

(Total for question = 2 marks)

Q6.

An object has a mass of 7.22×10^{-2} kg and a volume of 2.69×10^{-5} m^3.

Calculate the density, ρ, of the object.

Use the equation

$$\rho = \frac{m}{V}$$

(3)

State the unit.

density = ... unit .....

(Total for question = 3 marks)

Q7.

The volume of 380 g of ice is 410 cm^3.

Calculate the density of the ice in g/cm^3.

(2)

density = ... g/cm^3

(Total for question = 2 marks)

Q8.

Figure 13 shows the dimensions of a solid block of concrete.

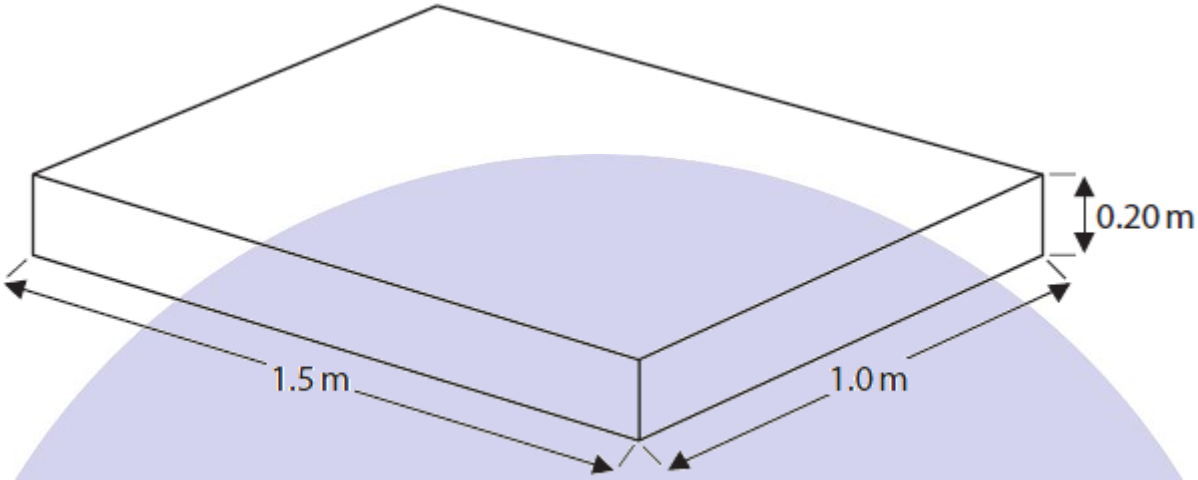

Figure 13

Density of concrete, ρ, = 2100 kg / m^3.

Calculate the mass of the concrete block.

Use the equation:

$$m = \rho \times V$$

(3)

mass of concrete block = ... kg

(Total for question = 3 marks)