

WRITTEN EXERCISE #01 - T23.4

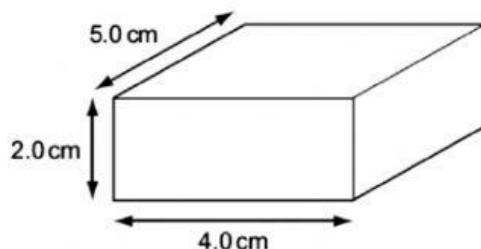
TOPIC 23 MOTION, FORCE & ENERGY
SUBTOPIC 23.4 DENSITY

ANSWER ALL QUESTIONS

- 1 Which of the following describes the density of a material?
- A the amount of matter in the material
 - B the mass per unit volume of the material
 - C the pull of gravity on the material
 - D the volume per unit mass of the material

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- 2 The diagram shows a solid with dimensions 5 cm x 4 cm x 2 cm. It has a mass of 100 g.



What is the density of the solid?

- A 0.40 g/cm³ B 2.5 g/cm³ C 5.0 g/cm³ D 10 g/cm³

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- 3 A container is filled with 5 kg of paint. The density of the paint is 2 g / cm³. Which volume of container is needed?

- A 10 cm³ B 400 cm³ C 2500 cm³ D 10 000 cm³.

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- 4 The mass and density of four objects are given in the table. Which object has the largest volume?

	<u>density</u> kg/m ³	mass / kg
A	200	0.6
B	400	1.0
C	1000	2.0
D	1500	3.0

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5 Fig. 3.1 shows a measuring cylinder containing liquid paraffin.

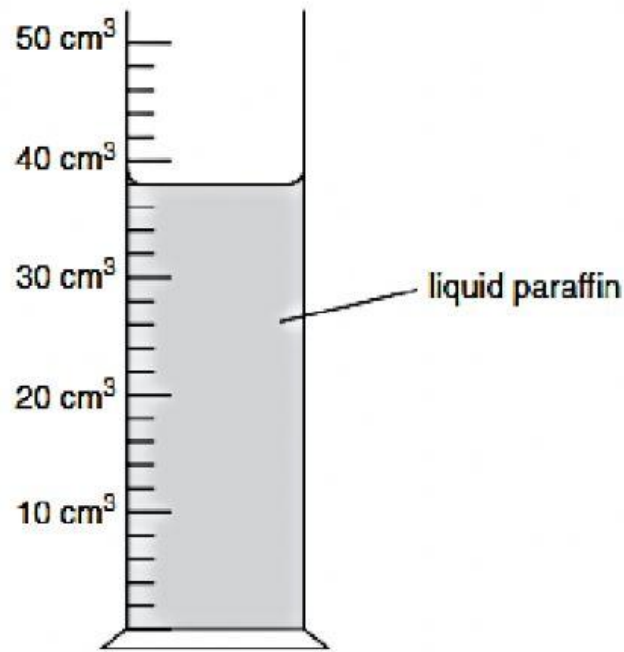


Fig. 3.1

(a) State the volume of the liquid paraffin shown in the measuring cylinder in Fig. 3.1.

..... cm³ [1]

(b) A student measures the mass of the empty measuring cylinder and then containing the liquid paraffin. His results are shown in Fig. 3.2.

mass of empty measuring cylinder	20.2 g
mass of measuring cylinder containing the liquid paraffin	50.6 g

Fig. 3.2

Calculate

(i) the mass of the paraffin[1]

(ii) the density of the paraffin. [3]

- 6 A measuring cylinder contains 80 cm^3 of water and has a total mass of 300 g .

A stone is then lowered into the cylinder. The new reading of the volume is 110 cm^3 and the total mass is 390 g .

The readings are shown in Fig. 12.1.

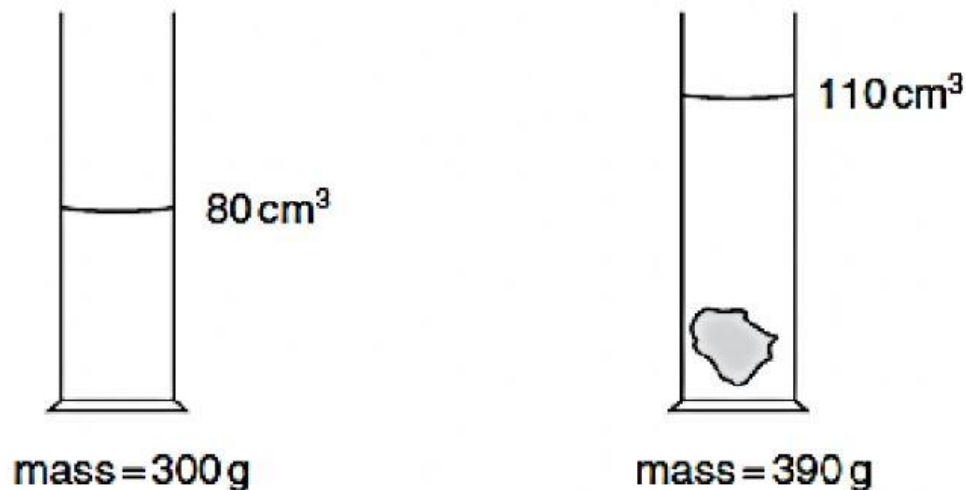


Fig. 12.1

(a) What is the mass of the stone? g [1]

(b) What is the volume of the stone? cm^3 [1]

(c) Use your answers to (a) and (b) to calculate the density of the stone.

[3]