Density

1. In each of the following questions find the **density**. State the units of your answer.

a Mass 45g, volume 5cm^3
b Volume 7cm^3, mass 56g
c Volume 0.4m^3, mass 688kg
d Mass 18.9g, volume 9cm^3
e Mass 4340kg, volume 7m^3
f Volume 12.8cm^3, mass 8601.6cm^3

2. In each of the following questions find the **mass**. State the units of your answer.

a Density 5g/cm^3. volume 4cm^3
b Volume 19cm^3, density 8g/cm^3
c Volume 3cm^3, density 1.4g/cm^3
d Density 190kg/m^3, volume 3m^3
e Volume 4m^3, density 5450kg/m^3
f Density 960kg/m^3, Volume 0.25m^3

3. In each of the following questions find the **volume**. State the units of your answer.

a Density 1.4g/cm^3. mass 5.6g
b Mass 4.2g, density 0.7g/cm^3
c Mass 16.32g, density 2.4g/cm^3
d Density 800kg/m^3, mass 4800kg
e Mass 420kg, density 140kg/m^3
f Density 6904kg/m^3, Mass 28306.4kg

4. Lead has a density of 11.5g/cm^3. A rectangular block of lead measures 7cm ×5cm×2cm.
a) Find the volume of the block of lead.
b) Find the mass of the block of lead

5. A plywood plank measures 1cm ×8cm×90cm and weighs 396g.
a) Find the volume of the plywood plank.
b) Find the density of the plywood.

6. The petrol in a petrol can weighs 2000g. The density of petrol is 0.8g/cm^3.
What is the volume of the petrol in the can in **a)** cm^3 **b)**litres (1000cm^3=1 litre)

7. A marble slab is 1 metre long and has a rectangular cross section of area 15cm^2.
a) What is the volume of the marble slab?
b) The density of marble is 2.7g/cm^3, what is the mass of the marble slab?

8. Olympics medals have a diameter of 60mm and a thickness of 3mm . Gold has a density of 19g/cm^3. Work out
a) the volume of a gold medal
b) the mass of a gold medal.

Hint – think of the gold medal as a cylinder

9. Jack makes some concrete steps. The diagrams show their dimensions in centimetres.

a) Calculate, in cm^3, the volume of concrete needed.
b) There are 1000000cm^{3}in 1m^3. Change your answer from a) into m^3
c) The density of concrete is 2400kg/m^3. How much will the steps weigh?