Density – Practice

1. Calculate the volume occupied by one tonne of sand, density 2600 kg/m^3.
   (0.385m^3)

2. Complete the following table to calculate the relative densities of the materials.

material	*dimensions*	*volume/m^3*	*mass*	*relative density*
concrete (slab)	2.4m x 0.5m x 0.2m		576kg	
air (in a room)	3.5m x 4.0m x 3.0m		54.6kg	
wood (plank)	3.0m x 150mm x 18mm		5.27kg	
steel (sheet)	2.50m x 1.25m x 3.0mm		73.7kg	
aluminium (rod)	12mm radius, 2m long		2.53kg	
mercury		500ml	6.8kg	

(0.24, 2.4; 42, 1.3x10^{-3}; 8.1x10^{-3}, 0.65; 9.38x10^{-3}, 7.86; 9.05x10^{-4}, 2.8; 13.6)

3. An empty 60 litre petrol tank has a mass of 10kg.
   Calculate the total mass of tank and contents when full. *(53kg)*
   density of petrol = 720kg/m^3

4. A room has floor dimensions of 10m x 12m and height 3m.
   Calculate the mass of air in the room. *(454kg)*
   density of air = 1.26 kg/m^3.

5. A drum containing 50litres of paint has a total mass of 70kg. The mass of the empty drum, including the lid, is 5kg.
   (i) Calculate the relative density of the paint.
   (ii) The drum is made of a metal of relative density 7.8. Calculate the volume of metal, in cm^3, used to make the drum and lid. *(1.3, 641cm^3)*