**Density and Pressure**

(a) The mass of 3 m3 of zinc is 21420 kg. Find the density of zinc in kg/m3.

(b) Find the density of a piece of wood with a mass of 135 g and a volume of 150 cm3.

(c) The density of gold is 19.5 g/cm3. Find the mass of 18 cm3 of gold in grams.

(d) A brick of mass 3000 g has a density of 7.5 g/cm3. Calculate the volume of the brick in cm3.

(a) A force of 80N acts over an area of 10 m2. What is the pressure?

(b) A pressure of 8 Pa acts on an area of 0.25 m2. What force is exerted?

(c) A crate weighs 200 N and exerts a pressure of 40 Pa on the ground. What is the area of the base of the crate?

(a) A classroom is 7 m long by 5 m wide by 3 m high. If the density of air in room temperature is about 1.3 kg/m3, how many kg of air does this room contain?

(b) A force of 70 N acts on an area of 20 cm2. The force is increased by 10 N and the area is increased by 10 cm2. Does this increase or decrease the pressure?

(c) Why do camels have large, wide feet?

(a) Two pieces of scrap metal are melted down to make a single piece of metal. The first piece has a mass of 1500 kg and a density of 7000 kg/m3. The second piece has a mass of 1000 kg and a density of 8000 kg/m3. Work out the total volume of the new metal.

(b) Liquid A has a density of 0.7 g/cm3 and liquid B has a density of 1.6 g/cm3. 140 g of liquid A and 128 g of liquid B are mixed to make liquid C. Find the density of liquid C.

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