Density: exercises

<u>TASK 1.</u> Solve the following guided exercises.

Exercise 1.

A block of wood has a mass of 8 g and occupies a volume of 10 cm^3. What is its density?

<u>GUIDED SOLUTION</u>
First, sketch the situation and write what we know.

Volume: $V =$ _____cm^3 = _____m^3

Mass: $m =$ _____g = _____Kg

Density: d=?

Formula: _____

Then put in the numbers: _____

This means that every _____ cube of this wood will have a mass of _____

Do never forget to check the units (e.g. mass in Kg, Volume in ……..,…).

Exercise 2.

An engineer needs to know the mass of a steel girder which is 20 m long, 0,1 m wide and 0,1 m high. The density of steel is $8000\ {}^{Kg}/_{m^3}$.

<u>GUIDED SOLUTION</u>
First, sketch the situation and write the information.

Calculate the Volume first:	V=length x width x height V=
Formula:	Density=
Inverted formula:	Mass=
Then put in the numbers:	Mass=

Exercise 3.

A block of wood has a mass of 4 g and occupies a volume of 5 cm^3. What type of wood can it be? Consider the table below.

M=_____

V=_____

The density will be

From the table the only wood with that density is _____

Solids	Density
Lead	11.37
Silver	10.57
Copper	8.92
Brass	8.90
Nickel	8.57
Iron	7.90
Aluminum	2.67
Marble	2.60 – 2.84
Granite	2.65
Rubber	1.10 – 1.19
Oak	0.80
Pine	0.35 – 0.50

Table 1. Density of solid substances. Densities are in g/cm^3.

<u>TASK2.</u> Now try these on your own!

Exercise 1

A block of aluminum occupies a volume of 15.0 mL and weighs 40.5 g.
What is its density? [Remember to convert mL in m^3 or cm^3]

Exercise 2

A rectangular block of copper metal weighs 1896 g. The dimensions of the block are 8.4 cm by 5.5 cm by 4.6 cm. From this data, what is the density of copper? [if you don't know the meaning of copper, find it in the dictionary]

Exercise 3

What volume of silver metal will weigh exactly 2500.0 g. The density of silver is 10.5 g/cm^3.