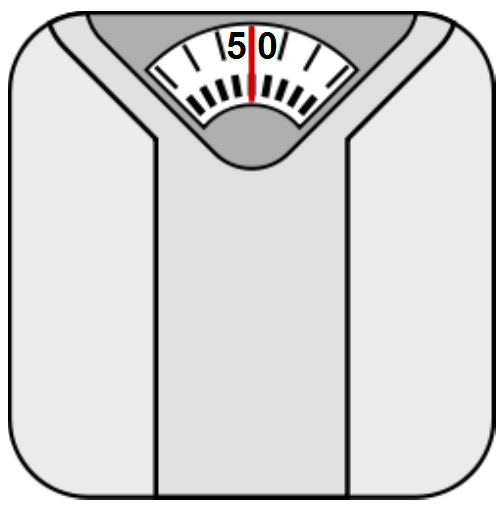
1. A teenager stands on a bathroom scale. The machine tells 50 kg.
   1. Calculate the weight of the teenager. [2]

* 1. There is a small swimming pool 5 m long and 2 m wide. When the teenager dived into it for a swim, the water level rose by 0.1 m. What is the volume occupied by the teenager. [2]

* 1. Now calculate the density of the teenager's body. Clearly write the formula that you use. [2]

* 1. Density of water in the swimming pool is 1000 kg/m3. The density of a leaf is 890 kg/m3. State whether the leaf will float or sink in the swimming pool? /1

**SOLUTIONS**

Q1a:

W = mg

W = 50 x 10

W = 500 N

Q1b:

Volume of the teenager is equal to the water displaced.

V = length x width x height

V = 5 x 2 x 0.1

V = 1 m3

Q1c:

Density = mass / volume

Density = 50 / 1

Density = 50 kg/m3

Q1d:

The leaf will float (because its density is less than that of water).

The leaf will float.