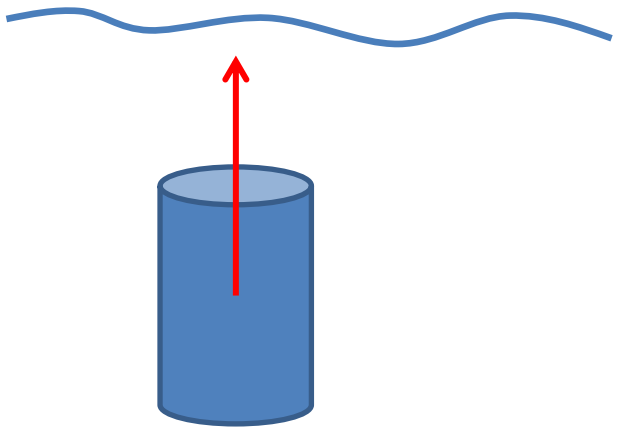
Density and Buoyancy

- Density: $\rho = \dfrac{Mass}{Volume}$



$$\text{Bouyancy Force} = \rho_{fluid} V g$$

here V is the volume of **submerged part** of the body, $g=9.8 m/s^2$.

Homework 21

Problem

A hot air balloon has volume 2500 m^3, and is filled with hot air. Density of hot air is 1 kg/m^3, while density of the atmospheric air around it is 1.3 kg/m^3. The mass of the balloon envelope is 400 kg. What is the maximal load the balloon could carry?