Estimating Buoyancy activity — Buoyancy Worksheet

1) A medical ship weighs 100,000 kg. What volume of fresh water ($\rho=1025 \text{ kg/m}^3$) will the ship displace?

2) How much mass can a 1,000,000 L balloon lift if the inside temperature of the balloon is 80 °C and the outside air temperature is 20 °C?

3) How many 10 L helium balloons would it take to lift a man in an armchair (75 kg) if the density of air is 1.2 g/L and the density of helium is 0.1786 g/L. Assume each balloon has a weight of 3 g. (Hint: First calculate how much extra mass a helium balloon can carry)