Buoyancy Worksheet

1) A medical ship weighs 100,000 kg. What volume of fresh water (ρ=1025 kg/m3) 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 ℃ and the outside air temperature is 20 ℃?

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)