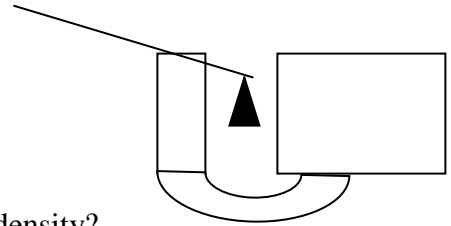


# States of Matter

## *Chpt 13 rev 2*

1. How much force could a 1.2 cm diameter piston develop on a 7.8 cm piston if 125 N were applied to the smaller one?
2. What force would be applied to the smaller piston in #1 if the 125 N were applied to a lever attached to the smaller piston? .....b) how much force would be applied to the larger piston? (the effort arm is 50 cm and the resistance arm is 15 cm)



3. You are 92 kg and have a volume of  $0.089 \text{ m}^3$ . a) What is your density?  
b) What buoyancy force is applied to you in water? C) What is your apparent weight in water?
4. What pressure is applied to a sunken ship that is 1.50 km below the surface of the water? You are in salt water of density  $1025 \text{ kg/m}^3$ .
5. How deep is a test tube if a fluid has a specific gravity of 0.880 ( $\rho = 880 \text{ kg/m}^3$ ) and is exerting a pressure of 225 Pa on the bottom of the tube?
6. A steel bridge is 2.50 km long and experiences temperatures from  $-12^\circ \text{ C}$  to  $39^\circ \text{ C}$ . What is its change in length?
7. What is the change in volume of 1.0 L of water as it goes from thawing to boiling?
8. A 1200 kg car has a tire area of 11 cm by 11 cm (each tire) (consider it a square) What pressure do the 4 tires exert to the ground?