

## Physics Assignment for 10/08/2007

### Term/Formula List for quiz:

states of matter	Archimedes' principle
fluids	Bernoulli's principle
2 main components of air	Boyle's law, $P_1V_1 =$
atmospheric pressure	Charles's law, $V_1/T_1 =$
value of standard atmospheric pressure	general gas law, $PV =$
vacuum	pneumatic device
barometer	

### Homework Assignment:

- Day 1: Test 1 on chapters 1, 2, 3
- Day 2: Read pgs 61-70; Questions 2, 5, 6, 7, 9, 10, 12
- Day 3: Read pgs 71-74; Questions 16, 17, 19, 20; Problems 3, 6, 9, 11  
gram molecular weight of  $O_2$  is 32.0 g/mole
- Day 4: Read pgs 74-78; Questions 23; Problems 5, 8, 10, 12  
gram molecular weight of  $N_2$  is 28.0 g/mole  
Do At Home Project on atmospheric pressure (below)  
Study for quiz

Remember to print out Unit Conversion Sheet and do Exercises to turn in Monday.

Got mole problems? Call Avogadro at 602-1023.

### At Home Project: atmospheric pressure

Fill a jar or glass completely with water. Cover the mouth of the container with a 3 x 5 card or similar material. While keeping one finger on the cover, invert the container. Carefully remove your finger. Slowly rotate the container through a complete circle so the mouth faces up and then down again. It might take a few tries to be successful. There needs to be an airtight seal between the container and the cover. Evaluate the situation. What is the atmospheric pressure outside the container? What is the liquid pressure inside the container at the top and bottom of the container? (density of water is  $1,000 \text{ kg/m}^3$ ,  $g = 9.80 \text{ m/s}^2$ ,  $1 \text{ Pa} = 1 \text{ kg/m s}^2$ ) Why doesn't the water push the file card off when it is turned upside down?

Unit Conversion Practice Sheet – 10/08/07

Complete the following conversions. Do Exercise pg 34 m, n, o, p and Exercise pg 37 m, n, o, p. Reference back of text book for conversion factors. Please show work.

The second blank is for the quantity being measured.

1. 763 mm Hg = \_\_\_\_\_ cm Hg \_\_\_\_\_

2.  $9.80 \text{ m/s}^2 =$  \_\_\_\_\_  $\text{ft/s}^2$  \_\_\_\_\_

3.  $1200 \text{ in}^3 =$  \_\_\_\_\_  $\text{cm}^3$  \_\_\_\_\_

4. 3 atm = \_\_\_\_\_ Pa \_\_\_\_\_

5.  $0.025 \text{ N/cm}^2 =$  \_\_\_\_\_  $\text{lb/in}^2$  \_\_\_\_\_