***Kinetic Molecular Theory of Gases – Ideal Gases***

**PChem (Chem 312)...a review (?)**

The ***Kinetic Molecular Theory of Gases*** begins with five postulates that describe the behavior of ***ideal gas molecules***. These postulates are based upon some simple, basic scientific notions, but they also involve some assumptions. In reading a postulate, do two things:

* ***First***, try to understand and appreciate the basic physical idea embodied in the postulate; this idea will ultimately be important in understanding the macroscopic properties of the gas in terms of the behavior the microscopic molecules making up the gas.
* ***Second***, identify possible weakness or flaws in the postulates. Inaccurate predictions by a theory derive from flawed postulates used in the derivation of the theory.

**Postulates**

1. A gas consists of a collection of small particles traveling in straight-line motion and obeying Newton's Laws.
2. The molecules in a gas occupy no volume (that is, they are points).
3. Collisions between molecules are perfectly elastic (that is, no energy is gained or lost during the collision).
4. There are no attractive or repulsive forces between the molecules.

 5. The average kinetic energy of a molecule is 3kT/2. (T is the absolute temperature and k is the Boltzmann constant – 1.3806e-23 J/K.) At room temperature (70 deg F ~ 22 deg C ~295 K) the average kinetic energy is ??? (~6e-12 J)

*From: http://www.chm.davidson.edu/vce/kineticmoleculartheory/basicconcepts.html*