AP Chemistry Problem Set
Dec. 6, 2009

1. If 0.2 moles of carbon dioxide takes 32 seconds to effuse through a hole, how long will 0.2 moles of hydrogen take to effuse through the same hole at the same conditions?

2. During an effusion experiment, it took 100 seconds for a certain number of moles of an unknown gas to pass through a tiny hole. Under the same conditions, the same number of moles of oxygen gas passed through the hole in 40 seconds. What is the molar mass of the unknown gas?

3. What is the root mean square velocity for water vapor molecultes at 25 degrees celsius?

4. If gas molecules move so quickly, why does it take so long to smell a jar of pickles when it's opened by someone across the room from you? (Graeme, please notice that we are sticking to pickles in this example).

5. If 14.4 liters of ethane is combusted at 102.7ºC and 750 torr, how many grams of water will be produced?