**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_**

**H. Chemistry**

**Ch. 12.6-12.7 Lecture Guide**

* **Dalton’s Law of Partial Pressures**
  + Most gases are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of several gases.
    - Ex)
    - Ex)
  + **Partial Pressure**
  + **Dalton’s Law**
  + ntotal
  + Practice Problems
    - Mixtures of helium and oxygen are used in “air” tanks of underwater divers for deep dives. For a particular dive, 12 L of O2 at 25 °C and 1.0 atm and 46 L of He at 25 °C and 1.0 atm were both pumped into a 5.0 L tank. Calculate the partial pressure of each gas and the total pressure in the tank at 25 °C.
      * Step 1: Use Ideal Gas Law to calculate the number of moles of each gas.
      * Step 2: Use Ideal Gas Law to calculate the partial pressure of each gas in the 5.0 L tank.
      * Step 3: Add the two pressures together to get the total pressure in the tank.
    - A sample of solid potassium chlorate was heated in a test tube and decomposed according to the reaction below:

2KClO3 (s) → 2KCl (s) + 3O2 (g)

The oxygen produced was collected by displacement of water at 22 °C. The resulting mixture of O2 and H2O vapor had a total pressure of 754 torr and a volume of 0.650 L. Calculate the partial pressure of O2 in the gas collected and the number of moles of O2 present. The vapor pressure of water at 22 °C is 21 torr.

* Step 1: Use the total pressure and the vapor pressure of water to calculate the pressure of O2.
* Step 2: Use the Ideal Gas Law to solve for the number of moles of O2.