Mole Worksheet (Use 3 sig. figs and show math set-up for credit) <u>Circle your final answer with units.</u>

1. Given 6.00 g of O_2 gas, how many liters of gas will you have at STP?
    (Steps: mass→ mole → volume)

2. In a chemical reaction 2.24 L of CH_4 reacted, how many grams of CH_4 reacted?
    (Steps: _____)

3. 2.80 g of Gas X are found to be 0.100 mole. Calculate the molecular weight of Gas X.

4. The gas in #3 could be: O_2, CO_2, CO, NH_3 (circle one)

5. Given 0.400 moles of CO_2 gas, calculate the volume.
    (Steps: _____)

6. A piece of Copper has a mass of 6.40 grams, how many Cu atoms are in the sample? (Steps: _____)

7. If 8.00 x 10^{23} molecules of He fill a balloon, the volume will be _____ liters at STP.
    (Steps: _____)

8. Given 2.00 L of NH_3 gas at STP, how many grams of NH_3 do you have?
    (Steps: _____)

9. You are given 2.24 L of Gas Y at STP. The gas sample has a mass of 3.2 grams. Calculate the MW of Gas Y.

10. How many atoms are in 2.07 g of lead (Pb)? (Steps: _____)

11. Which contains more molecules? (Circle one)
    A) 8.00 g of O_2 gas, or B) 5.6 L of O_2 at STP.

12. When 2.00 g of CH_4 reacts, how many molecules of CH_4 have reacted? (Steps: _____)