**Mole Practice #1** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

There are three mole conversion factors:

1 mole = \_\_\_\_\_\_\_\_ particles 1 mole = \_\_\_\_\_\_\_\_\_\_\_\_ g 1 mole = \_\_\_\_\_\_\_\_\_ L

**Mole – Particle Conversions**

1. How many moles of lithium are in 4.55 x 1022 atoms of lithium?
2. How many molecules are there in 4.50 moles of carbon dioxide?
   1. How many atoms of carbon?
   2. How many atoms of oxygen?
3. How many moles are in 1.20 x 1025 atoms of phosphorous?
4. How many atoms are in 0.750 moles of zinc?
5. How many molecules are in 0.440 moles of N2O5?

**Mole – Mass Conversions**

1. How many moles are in 29.6 grams of CO2?
2. What is the mass of 5.10 moles of Iron (III) Oxide?
3. Find the number of moles of argon in 452 grams of argon.
4. Find the grams in 1.26 x 10-4 mole of HCH3COO.
5. Find the mass in 2.6 mol of LiBr.

**Mole – Volume Conversions**

1. Determine the volume, in liters, occupied by 0.030 moles of a gas at STP.
2. How many moles of argon atoms are present in 11.2 L of argon gas?
3. What is the volume of 0.05 mol of Neon gas at STP?
4. What is the volume of 0.205 moles of water at STP?
5. How many moles of carbon dioxide are in 10.51 L of carbon dioxide gas?

