**Mole Conversions**

**Station #5**

**(Molecules or atoms)**

**Mass (grams)**

**# Particles**

**# of Moles**

Avogadro’s #

Molar mass

Mass

**A.** Convert **Mass to Moles**

Example: How many moles are there in 54 grams of H2S?

1. Calculate the **molar mass** of the compound.

2 mol H x 1 g/1 mol H = 2 g

1 mol S x 32 g/1 mol S = 32 g

Molar mass = 2 + 32 = 34 g/mol

1. **Divide** the given mass by the molar mass.

54 g/34g/mol = 1.58 moles

**B**. Convert **Moles to Mass**

Example: How many grams are there in 4.5 moles of As2O5?

1. Calculate the **molar mass** of the compound.

2 mol As x 75 g/ 1 mol As = 150 g

5 mol O x 16 g/1 mol O = 80 g

Molar mass = 230 g/mol

1. **Multiply** the number of moles by the molar mass.

4.5 moles x 120g/mole = 540 grams

**Practice Problems:**

1. How many moles are there in 764 grams of water?
2. How many moles are there in 43.4 grams of Sulfur?
3. How many grams are there in 3.8 moles of CO2?
4. How many grams are there in 9.4 moles of Li2SO4?