

Name: _____

Mole Problems #1 – Mol → Molec, Mol → Atoms, Mass → Molec,
Mass → Atoms, Mol → Vol, Mass → Vol, Molec → Vol

1. Determine the number of molecules in each of the following:
 - a. 2.30×10^{-1} mol NaCl
 - b. 5.6 mol Potassium sulfide
 - c. 3.42×10^2 mol Magnesium oxide
 - d. 0.450 mol CaI_2

2. Determine the number of atoms in each of the following:
 - a. Oxygen atoms in 0.250 mol CaSO_4
 - b. Sodium atoms in 1.20×10^{-2} mol Sodium phosphate
 - c. TOTAL atoms in 3.20 mol Iron (III) nitrate
 - d. Hydrogen atoms in 6.30×10^{-1} mol Ammonium carbonate

3. Determine the number of molecules in each of the following:
 - a. 2.50 g of Nitrogen dioxide
 - b. 1.0×10^2 g of CuO
 - c. 0.358 mg of Barium bromide
 - d. 2.20×10^4 cg of Silver chloride

4. Determine the number of atoms in each of the following:
 - a. Chlorine atoms in 3.5 g of Tin (IV) chloride
 - b. Calcium atoms in 68.5 mg of Calcium phosphate
 - c. Nitrogen atoms in 4.50×10^2 cg of NH_4NO_3
 - d. TOTAL atoms in 2.64×10^{-3} kg of Potassium hydroxide

5. Determine the volume occupied by each of the following gases:
 - a. 1.20 mol Propane (C_3H_8)
 - b. 4.2×10^{-1} g of Bromine gas
 - c. 0.345 dag of Nitrogen dioxide
 - d. 4.50×10^{25} molecules of Sulfur trioxide