Perform the following calculations. You **MUST** show your work using dimensional analysis to receive credit.

1. What is the fundamental particle of an element? _____   2. What is the fundamental particle of a compound? _____

3. How many moles are 1.20×10^{25} atoms of phosphorus?

4. How many atoms are in 0.750 mol of zinc(Zn)?

5. Find the number of atoms in 2.45 mol of gold (Au).

6. How many moles are contained in 1.20×10^{24} molecules of carbon dioxide (CO_2)?

7. Determine the number of molecules in 1.19 moles of carbon tetrachloride (CCl_4).

8. If a sample of water (H_2O) contains 3.82×10^{22} molecules of water, how many moles of water does the sample contain?