Answers for homework set #1: Chemistry 100 Adams

Chapter 1:

3) 5% carbon dioxide by volume

9.) a.) $1.5 \times 10^3$ m  b.) $9.58 \times 10^{-11}$ m

   c.) $7.5 \times 10^{-6}$ m  d.) $1.5 \times 10^5$ mg

15.) a.) compound  b.) compound  c.) mixture

   d.) element  e.) mixture  f.) element

23) a.) C=6, H=16, O=20 on each side of the equation

   b.) C=16, H=36, O=50 on each side of the equation

37.) a.) yes the masses of reactants and products are the same. Law of Conservation of Mass is obeyed.

   b.) No, the number of molecules and reactants are not the same. There are 4 molecules reactants but only 2 molecules of products.

   c.) Yes, the number of atoms of reactants and products are the same. Law of Conservation of Mass is obeyed. There is the same number of atoms of each element represented on both sides of the equation.

Chapter 2:
3.) a.) O; 8p, 8 e  
   b.) N; 7 p, 7 e  
   c.) Mg; 12p, 12 e  
   d.) S; 16 p, 16 e  

3.) a.) group 2A  
   b.) beryllium, Be; magnesium, Mg; calcium, Ca; strontium, Sr; Barium, Ba; radium Ra  
   c.) Be has 4 e; Mg has 12 e; Ca has 20 e; Sr has 38 e; Ba has 56 e; Ra has 88 e  
   d.) each element in this group has 2 outer electrons.  

4.) a.) helium, He  
   b.) potassium, K  
   c.) copper, Cu  

7.) a.) F19  
   b.) Fe56  
   c.) Rn222  

8.) a.) 8 protons, 47 neutrons, 8 electrons  
   b.) 16 protons, 19 neutrons, 16 electrons  
   c.) 92 protons, 146 neutrons, 92 electrons