Chapter 7 Problem VII Name _____

1. It is found experimentally that a certain quantity of a compound of lead, sulfur and oxygen contains 0.841 mole Pb, 0.841 mole of S, and 3.364 moles of O. What is the chemical formula?

2. It is found that certain quantity of the compound $Al(OH)_3$ on analysis will yield 1.50 mole of aluminum. How many mole of oxygen and hydrogen were present in this quantity of the compound?

3. It is possible by chemical analysis to show that in 2.00 g of copper oxide, there is 1.776 g of copper and 0.224 g of oxygen. From this information determine the formula for copper oxide.

4. In 4.50 g of an organic compound, acrylic acid, there are found to be 2.25 g of carbon, 2.00 g of oxygen, and 0.25 g of hydrogen. What is its formula?

5. The composition of calcium pyrophosphate is calcium = 25.3%, phosphorous = 39.2%, oxygen = 35.5%. What is its formula?

6. 1,3-cyclobutadiene has the empirical formula CH. If its molecular weight is 52, what is its true molecular formula?

7. Write the empirical formula for the following compound whose weight percent composition is given as Fe = 48.2%, C = 10.4%, and O = 41.4%.

8. Calculate the chemical formula for each and name it.
   a) 67.6% Hg, 10.8% S, 21.6%O

   b) 17.6% Na, 39.7% Cr, 42.7% O