

### **% Composition, Empirical Formula and Molecular Formula Worksheet**

1. A sample of an unknown compound with a mass of 0.847 g has the following composition: 50.51 % fluorine and 49.49 % iron. When this compound is decomposed into its elements, what mass of each element would be recovered?
2. What is the percent composition of a carbon – oxygen compound, given that a 95.2 g sample of the compound contains 40.8 g of carbon and 54.4 g oxygen?
3. Find the percent composition of a compound that contains 2.63 g of carbon, 0.370 g of hydrogen and 0.580 g of oxygen in a 3. 58 g sample of the compound.
4. What is the percent composition of compound that contains 2.7369 g of chlorine, 0.4116 g of oxygen and 0.7971 g of phosphorus in a 3.9460 g sample of the compound?
5. A sample of an unknown compound with a mass of 2.876 g has the following composition: 66.07 % carbon, 6.71 % hydrogen, 4.06 % nitrogen and 23.16 % oxygen. When this compound is decomposed into its elements, what mass of each element would be recovered?
6. Determine the empirical formula of a compound containing 2.644 g of gold and 0.476 g of chlorine.
7. Determine the empirical formula of a compound containing 0.928 g of gallium and 0.412 g of phosphorus.
8. Find the empirical formula of a compound, given that the compound is found to be 47.9 % zinc and 52.1 % chlorine by mass.
9. Find the empirical formula of a compound, given that a 48.5 g sample of the compound contains 1.75 g of carbon and 46.75 g of bromine.
10. Determine the empirical formula of a compound containing 20.23 % aluminum and 79.77 % chlorine.