Chemistry **Name**
Period _____

Empirical and Molecular Formula Worksheet

SHOW YOUR WORK ON YOUR OWN PAPER

Your answers also are recorded on this worksheet.

1. Identify the following as molecular formulas, empirical formulas or both.
   a. Ribose, $C_5H_{10}O_5$, a sugar molecule in RNA. _____
   b. Ethyl butanoate, $C_6H_{12}O_2$, a cmpd w/ the odor of pineapple. _____
   c. Chlorophyll, $C_{55}H_{72}MgN_4O_5$, part of photosynthesis. _____
   d. DEET, $C_{12}H_{17}ON$, an insect repellent. _____
   e. Oxalic acid $H_2C_2O_4$, found in spinach and tea. _____

2. Calculate the empirical formula of each compound with the following percent composition.
   a. 94.1% O, 5.9% H _____
   b. 79.9% C, 20.1% H _____
   c. 67.6% Hg, 10.8% S, 21.6% O _____
   d. 27.59% C, 1.15% H, 16.09% N, 55.17% O _____
   e. 17.6% Na, 39.7 % Cr, 42.7% O _____

3. The compound meythl butanoate smells like apples. Its percent composition is 58.8% C, 9.8% H, and 31.4% O. If its gram molecular mass is 102 g/mole, what is its molecular formula?

4. You find that 7.36 of a compound has broken down to give 6.93g of oxygen. The rest of the compound is hydrogen. If the molecular mass of the compound is 34.0 g/mole, what is its molecular formula?

5. What is the total mass of a mixture of 3.50×10^{22} molecules of Na_2SO_4, 0.500 mole of H_2O and 7.23g of AgCl?