Name _____

Empirical and Molecular Formulas

Empirical formulas:

1) Determine the empirical formula of a compound that contains 0.852g mercury and 0.068g oxygen.

2) Determine the empirical formula of a compound that contains 2.24g sodium, 0.098g hydrogen, 1.173g carbon, and 4.685g oxygen.

3) Determine the empirical formula for a compound containing 69.95% iron and 30.05% oxygen.

4) Determine the empirical formula for a compound containing 34.47% Zn, 14.75% N, and 50.77% O.

5) Determine the empirical formula for a sample containing 2.44g Al, 4.36g S, and 8.70g O.

6) Copper (8.72g) reacts with nitrogen to form 10.0g of the copper nitride. What is the charge on the copper cation in this copper nitride?

Molecular formulas:

7) A compound is known to have a molar mass of 30.08g/mol. Find the molecular formula of a compound if 6.42g of the compound contains 5.130g carbon and 1.293g hydrogen.

8) Hexane, a compound of hydrogen and carbon, has a molar mass of 86.20g/mol. If one mole of the compound contains 14.14g hydrogen, then what is the molecular formula of the compound.

9) A compound is known to have a molar mass of 180.18g/mol. Find the molecular formula of the compound if it is found to contain 91.38g C, 15.38g H, and 121.74g O in a 228.50g sample.

10) A compound is known to have a molar mass of 118.22g/mol. Find the molecular formula of the compound if a 4.22g sample of compound contains 1.715g C, 0.5047g H, and the rest is found to be nitrogen.