Name _____ Period _____

WORKSHEET ON EMPIRICAL FORMULAS

1. A compound contains 26.6% potassium, 35.4% chromium, and 38.0% oxygen by mass. What is its empirical formula?

2. Iron forms two different compounds with oxygen. One is found to contain 77.7% Fe and 22.3% O, while the other is found to contain 69.9% Fe and 30.1% O by mass. Find the empirical formulas of each compound.

3. Methanol contains 37.5% carbon, 12.6% hydrogen, and 49.9% oxygen by mass. If the molar mass of methanol is 32.0 g/mol, calculate its empirical and molecular formulas.

4. A compound with a molar mass of 140.3 g/mol contains 85.6% carbon and 14.4% hydrogen by mass. What is its molecular formula?

5. Find the molecular formula of a sugar containing 40.0% carbon, 6.7% hydrogen, and 53.3% oxygen. (The molar mass of the sugar is 180 g/mol).

6. Find the molecular formula of a compound, given that a 212.1 gram sample of the compound contains 42.4 grams of hydrogen and 169.7 grams of carbon. (The molar mass of the compound is 30.0 g/mol).

7. A compound with a molar mass of 284 g/mol contains 43.7% phosphorus and 56.3% oxygen. What is its molecular formula? What is the name of the compound?

8. Propylene glycol contains 47.35% carbon and 10.6% hydrogen. The remainder is oxygen. If the molar mass is 76.1 g/mol, what are the empirical and molecular formulas of propylene glycol?