Honors Chemistry: Mole Podcast 8 Problem Set- Empirical and Molecular Formulas

1. Determine the empirical formula of a compound with 72.4% Fe and 27.6% Oxygen.

2. Determine the empirical formula of a compound with 65.2% Sc and 34.8% O.

3. Determine the empirical formula of a compound with 52.8% Sn, 12.4% Fe, 16% C and 18.8% N.

4. Determine the molecular formula for a compound that contains 12.2-g Nitrogen, 27.8-g Oxygen, and a molecular mass of 92.0 g/mol.

5. Determine the molecular formula for a compound that contains 94.1% oxygen and 5.9% hydrogen and a molecular mass of 34 g/mol.

6. Determine the molecular formula for a compound that contains 22.5% Na, 30.4% P and 47.1% O and a molar mass of 306 g/mol

7. Determine the molecular formula of a compound that contains 76% iodine and 24% oxygen and has a molar mass of 334 g/mol.

8. Determine the molecular formula of a compound that contains 48.6% carbon, 8.1% hydrogen, and 43.2% oxygen and has a molar mass of 296 g/mol.

9. Determine the molecular formula of a compound that contains 0.993-g nitrogen, 1.27-g carbon, 0.213-g hydrogen, 2.52-g chlorine and has a molar mass of 423 g/mol.

10. A sample of TNT, a common explosive is analyzed and found to contain 1.03-g of nitrogen, 0.220-g hydrogen, and 1.76-g of carbon. The molar mass is 123 g/mol. What is the molecular formula?

11. Azobenzene is an important intermediate in the manufacture of dyes. It contains 79.1% carbon, 5.55% hydrogen, and 15.4% nitrogen. It has a molar mass of 182-g/mol. What is the molecular formula?