**CW – Empirical and Molecular Formulas**

**Name**

**Period: 1 2**

Directions: Solve each problem, SHOW YOUR WORK!

Molecular Formulas – Determine the molecular formulas from the information provided.

1. A compound has an empirical formula of NO2 and a molecular mass of 92.02g/mol. Determine the molecular formula.
2. Ibuprofen, a common headache remedy, has an empirical formula of C7H9O and a molecular mass of approximately 215g/mol. Determine its molecular formula.
3. Nicotine is 74.1% carbon, 8.6% hydrogen, and 17.3% nitrogen by mass/ Its molecular mass is about 160 g/mol. Determine its molecular formula.
4. Epinephrine (adrenaline) is a hormone secreted into the bloodstream in times of danger and stress. It is 59.0% carbon, 7.1% hydrogen, 26.2% oxygen, and 7.7% nitrogen by mass. Its molecular mass is about 180 g/mol. Determine its molecular formula.
5. A certain carbohydrate is 40.0% carbon, 6.72% hydrogen, and 53.3% oxygen by mass. The experimentally determine molecular mass is approximately 180 g/mol. What is the molecular formula?
6. The compound, methyl butanoate, smells like apples. Its composition by mass is 58.8% carbon, 9.8% hydrogen, and 31.4% oxygen. If its molecular mass is approximately 102 g/mol, what is its molecular formula?