Name: _____

Worksheet B
Empirical Formula

a.	d.	g.
A compound contains 0.0130 mol carbon, 0.0390 mol hydrogen, and 0.0065 mol oxygen.	Phosphoric acid is found in some soft drinks. A sample of phosphoric acid contains 0.3086 g of hydrogen, 3.161 g of phosphorus, and 6.531 g of oxygen	49.99 % C; 5.61 % H; 44.40 % O
b.	e.	h.
A compound consists of 72.2% magnesium and 27.8% nitrogen by mass.	92.24 % C; 7.76 % H	38.76 % Ca; 19.97 % P; 41.27 % O
c.	f.	i.
Glucose contains 40.0% carbon, 6.7% hydrogen, and 53.3% oxygen by mass.	36.48 % Na; 25.44 % S; 38.08 % O	Find the empirical formula for a compound which contains 32.8% chromium and 67.2% chlorine.

Name: _____

Worksheet C- Empirical/Molecular Formulas

a. Nicotine is 74.1% carbon, 8.6% hydrogen, and 17.3% nitrogen by mass. Its molar mass is about 160 g/mol.	**d.** A compound analyzes as 79.08 % C; 5.54 % H and 15.38 % N. What is the molecular formula if the molar mass is 273.36 g/ mol?	**g.** A sample of indium chloride weighing 0.5000 g is found to contain 0.2404 g of chlorine. What is the empirical formula of the indium compound?
b. 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 molar mass is about 180 g/mol.	**e.** caffeine contains 49.5% C, 5.15% H, 28.9% N, 16.5% O by mass, molar mass = 195 g.	**h.** An unknown compound was found to have a percent composition as follows: 47.0 % potassium, 14.5 % carbon, and 38.5 % oxygen. What is its empirical formula? If the true molar mass of the compound is 166.22 g/mol, what is its molecular formula?
c. A compound analyzes as 79.08 % C; 5.54 % H and 15.38 % N. What is the molecular formula if the molar mass is 273.36 g/ mol?	**f.** Nitrogen and oxygen form an extensive series of oxides with the general formula N_xO_y. One of them is a blue solid that comes apart, reversibly, in the gas phase. It contains 36.84% N. What is the empirical formula of this oxide?	**i.** Rubbing alcohol was found to contain 60.0 % carbon, 13.4 % hydrogen, and the remaining mass was due to oxygen. What is the empirical formula of rubbing alcohol?