Name _____ Honors: Empirical & Molecular Formulas

A) Determine if the following formulas are empirical or molecular formulas

Formula	Empirical or Molecular	Simplify if Molecular	Formula	Empirical or Molecular	Simplify if Molecular
NaCl			N_2O_4		
C_2H_6			$Ra(CN)_2$		
$Ba(NO_3)_2$			$C_6H_{12}O_6$		

B) Determine the empirical formula for each question below, showing all work.

1) A 30.0 gram sample of substance is found to contain 15.6 g of carbon, 3.90 grams of hydrogen, and 10.5 grams of oxygen. What is the empirical formula of this compound?

2) A compound is found to have the following composition by mass: 25.0% potassium, 35.0% manganese, and 40.0.% oxygen. What is the empirical formula of this compound?

3) A compound contains 11.5 grams of sodium, 7.00 grams of nitrogen, and 1.01 gram of hydrogen. What is the empirical formula of this compound?

4) A compound is found to consist of 11.1% hydrogen and 88.9% oxygen. What is the empirical formula of this compound?

C) Determine the molecular formulas for each question below, showing all work.

1) The empirical formula of a compound is found to be CH, and the molecular mass has been determined to be 78.0 g/mole. What is the molecular formula of this compound?

2) The empirical formula of a compound is found to be HO, and the molecular mass has been determined to be 34.0 g/mole. What is the molecular formula of this compound?

3) The empirical formula of a compound is found to be NO_2, and the molecular mass has been determined to be 92.0 g/mole. What is the molecular formula of this compound?

4) The empirical formula of a compound is found to be CH_2O, and the molecular mass has been determined to be 180.0 g/mole. What is the molecular formula of this compound?

5) The empirical formula of a compound is found to be CH_3O, and the molecular mass has been determined to be 62.0 g/mole. What is the molecular formula of this compound?