Chemistry Practice Quiz: Empirical & Molecular Formulas   Name_____

1. Determine the percent composition of each of the following compounds.
   a. manganese oxide (MnO)

   b. propanol (C_3H_8O)

   c. calcium phosphate ($Ca_3(PO_4)_2$)

2. Determine the empirical formula for a sample of a compound having the following percent composition 94.07% sulfur and 5.93% hydrogen

3. Determine the empirical formula for a sample of a compound having the following percent composition 80.68% mercury, 12.87% oxygen, and 6.45% sulfur

4. Caffeine is a compound found in natural coffees and teas and in some colas. Determine the empirical and molecular formula for caffeine, using the following composition: 49.47% carbon, 28.85% nitrogen, 16.48% oxygen, and 5.20% hydrogen. The molar mass of caffeine is 194.19 g/mol.

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1. Determine the percent composition of each of the following compounds.
   a. manganese oxide (MnO)

   77.45% Mn + 22.55% O
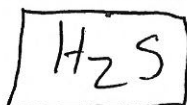
   b. propanol (C3H8O)

   59.94% C, 13.44% H 26.67% O
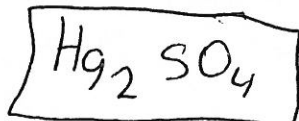
   c. calcium phosphate (Ca3(PO4)2)

   38.76% Ca 19.97% P 41.27% O

2. Determine the empirical formula for a sample of a compound having the following percent composition 94.07% sulfur and 5.93% hydrogen

   H_2S

3. Determine the empirical formula for a sample of a compound having the following percent composition 80.68% mercury, 12.87% oxygen, and 6.45% sulfur

   $Hg_2 SO_4$

4. Caffeine is a compound found in natural coffees and teas and in some colas. Determine the empirical and molecular formula for caffeine, using the following composition: 49.47% carbon, 28.85% nitrogen, 16.48% oxygen, and 5.20% hydrogen. The molar mass of caffeine is 194.19 g/mol.

   $C_4 H_5 N_2 O$ = Empirical

   $C_8 H_{10} N_4 O_2$ = Molecular

   #75 $Mg SO_4 \cdot 2H_2O$