1. The empirical formula of a compound is found to be \( \text{P}_2\text{O}_5 \). Experiments show that the molar mass of the compound is 283.9 g/mol. What is the molecular formula of the compound?

2. A compound has the following % composition—76.54 % C, 12.13 % H, and 11.33 % O. If its molar mass is 282.5 g/mol, what is its molecular formula?

3. What is the formula for a hydrate which consists of 90.7 % \( \text{SrC}_2\text{O}_4 \) and 9.30 % \( \text{H}_2\text{O} \)?