COMPOSITION OF HYDRATES

Name _____

A hydrate is an ionic compound with water molecules loosely bonded to its crystal structure. The water is in a specific ratio to each formula unit of the salt. For example, the formula $CuSO_4 \cdot 5H_2O$ indicates that there are five water molecules for every one formula unit of $CuSO_4$. Answer the questions below.

1. What percentage of water is found in $CuSO_4 \cdot 5H_2O$?

_____

2. What percentage of water is found in $Na_2S \cdot 9H_2O$?

_____

3. A 5.0 g sample of a hydrate of $BaCl_2$ was heated, and only 4.3 g of the anhydrous salt remained. What percentage of water was in the hydrate?

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4. A 2.5 g sample of a hydrate of $Ca(NO_3)_2$ was heated, and only 1.7 g of the anhydrous salt remained. What percentage of water was in the hydrate?

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5. A 3.0 g sample of $Na_2CO_3 \cdot H_2O$ is heated to constant mass. How much anhydrous salt remains?

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6. A 5.0 g sample of $Cu(NO_3)_2 \cdot nH_2O$ is heated, and 3.9 g of the anhydrous salt remains. What is the value of n?

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