Hydrates Practice Problems

Directions: Solve the following. Show all your set-ups. Remember sig figs and units in your answer.

1. What is the molecular mass of the hydrate sodium carbonate decahydrate? (That’s \( \text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}, \) aka washing soda.)

2. What is the percent of water in the hydrate \( \text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O} \)?

3. How many moles of water would there be in .0987 moles of \( \text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O} \)?

4. How many grams of water would there be in 351 grams of \( \text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O} \)?

5. When 678 grams of a hydrate of \( \text{NaAl( SO}_4\text{)}_2 \) is heated, 358 grams of the anhydrous salt is left. What is the formula for the hydrate of \( \text{NaAl( SO}_4\text{)}_2 \)?