Use the provided solubility graph to answer the following questions:

1. These concentrations of solutes are dissolved in 100 g of water at the temperature stated. Label the solutions as:
   - S (saturated)
   - U (unsaturated)
   - SS (supersaturated)

   a. 55 g of KCl at 50 °C
   b. 45 g of NaNO₃ at 10 °C

2. Under ordinary conditions, what is the maximum mass of solute that will dissolve in the given amount of solvent at the temperature stated?

   ~40 g NaCl in 100 g water at 100 °C
   ~15 g KNO₃ in 50 g water at 20 °C (~30 g KNO₃ /100 g H₂O)

For questions 3 and 4, write your answer in the blank space and show your work.

3. If 70 g of KClO₃ are added to 100 mL of water at 70 °C, ________________ g will not dissolve.

4. A hot solution contains 100 g KNO₃ in 100 g of water. When the solution cools to 50 °C, ________ g of the KNO₃ will crystallize.

5. Which compound has solubility values that are least affected by changes in temperature?

6. Underline the more concentrated solution:
   - a saturated solution of KClO₃ at 25 °C
   - an unsaturated solution of NaCl containing 30 g of NaCl at 80°C

7. At what temperature will Ce₂(SO₄)₃ and KClO₃ have the same solubility in water?

8. If 100 g of water saturated with KCl at 80 °C is carefully evaporated to dryness, how many grams of the dry KCl will be recovered?