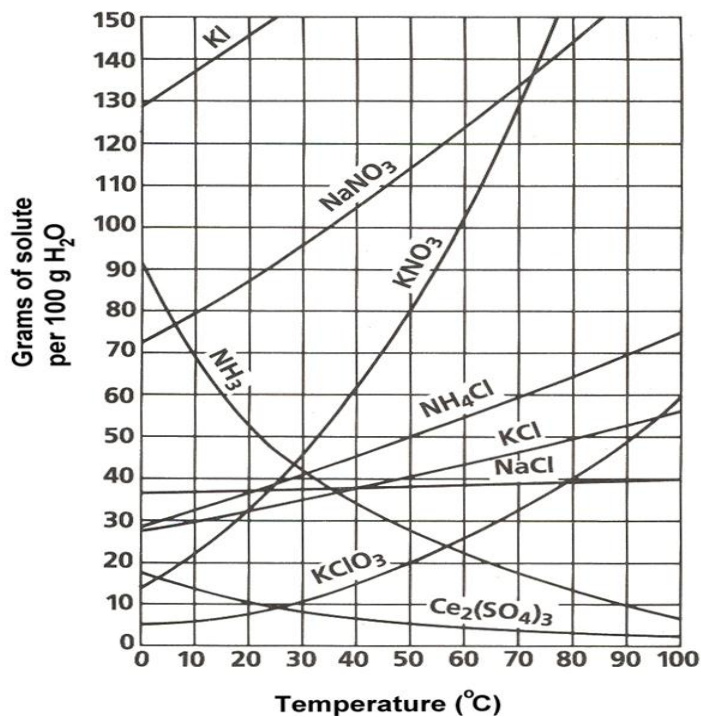


Solubility Curve Practice Problems Worksheet 1

Directions: Find the mass of solute will dissolve in 100mL of water at the following temperatures?

1. KNO_3 at 70°C = _____
2. NaCl at 100°C = _____
3. NH_4Cl at 90°C = _____
4. Which of the **above** three substances is most soluble in water at 15°C . = _____



2. Solution	Saturated or Unsaturated?	If unsaturated: How much more solute can dissolve in the solution?
a solution that contains 70g of NaNO_3 at 30°C (in 100 mL H_2O)		
a solution that contains 50g of NH_4Cl at 50°C (in 100 mL H_2O)		
a solution that contains 20g of KClO_3 at 50°C (in 50 mL H_2O)		
a solution that contains 70g of KI at 0°C (in 200 mL H_2O)		

3. a. What is the solubility of KCl at 5°C ? _____
- b. What is the solubility of KCl at 25°C ? _____
- c. What is the solubility of Ce₂(SO₄)₃ at 10°C ? _____
- d. What is the solubility of Ce₂(SO₄)₃ at 50°C ? _____
4. At 90°C , you dissolved 10 g of KCl in 100. g of water. Is this solution saturated or unsaturated?
5. A mass of 100 g of NaNO_3 is dissolved in 100 g of water at 80°C .
 - a) Is the solution saturated or unsaturated? _____
 - b) As the solution is cooled, at what temperature should solid first appear in the solution? Explain.

6. Use the graph to answer the following two questions:

Which compound is most soluble at 20 °C? _____ Which is the least soluble at 40 °C? _____

7. Which substance on the graph is **least** soluble at 10°C? _____

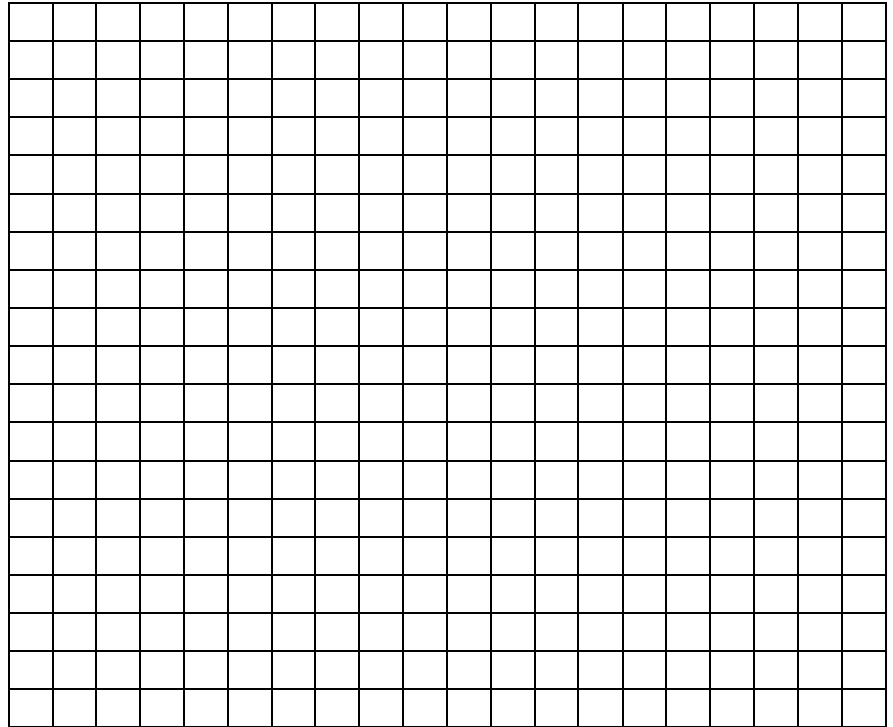
8. A mass of 80 g of KNO₃ is dissolved in 100 g of water at 50 °C. The solution is heated to 70°C. How many more grams of potassium nitrate must be added to make the solution saturated? Explain your reasoning

Part II Graphing Questions

1. Graph the following data the graph

Your graph must:

- Be neat and organized (use a ruler)
- X and Y axis must have proper scale
- Have properly labeled axes
- Use a different color for the two different solubility curves.



Sodium Chloride Solubility

Temperature	Solubility (g of solute/100 mL of H ₂ O)
0	35.7
10	35.8
20	35.9
30	36
40	36.4
60	37.1
80	38
90	38.5
100	39.2

Copper Sulfate Solubility

Temperature	Solubility (g of solute/100 mL of H ₂ O)
0	23
10	27.5
20	32
30	38
40	44.5
60	62
80	84
100	114

- 2.
- a. _____ grams of sodium chloride dissolved in 100 mL of water
 - b. _____ grams of or copper sulfate dissolved in 100 mL of water
 - c. Which solution was saturated? Which was unsaturated? Explain.
 - d. How much more solute could you add to the unsaturated solution?