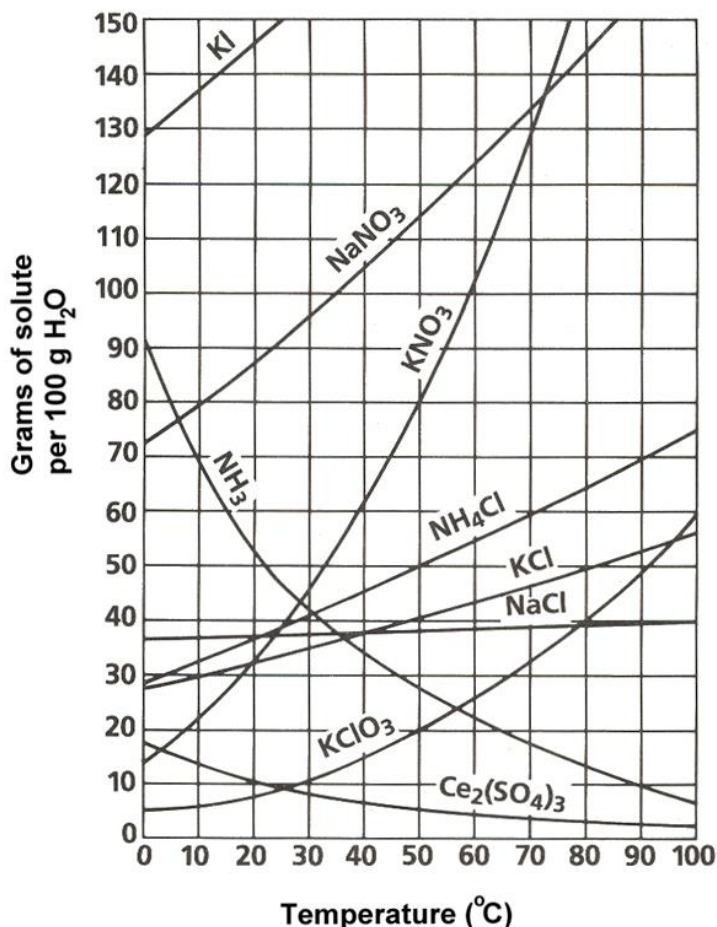


PS Chemistry: Chapter 22 (Section 3) Solubility Curve Name _____ Period _____

Refer to the Solubility Curve graph to answer the following questions.

- How many grams of solute are required to saturate 100 g of water in each of the following solutions?
 - KCl at 80°C _____
 - KClO₃ at 90°C _____
 - NaNO₃ at 10°C _____
 - NH₄Cl at 70°C _____
- What is each of the solutions below: saturated, unsaturated or supersaturated? All of the solutes are mixed with 100 g of water.
 - 40 g of NaCl at 50°C _____
 - 30 g of NH₃ at 30°C _____
 - 80 g of KNO₃ at 60°C _____
 - 80 g of NH₄Cl at 80°C _____
- How many grams of KNO₃ per 100 g of water would be crystallized from a saturated solution as the temperature drops from:
 - 30°C to 20°C _____
 - 60°C to 40°C _____
 - 50°C to 30°C _____
 - 50°C to 10°C _____
- How many additional grams of NaNO₃ are required to keep each of the following NaNO₃ solutions saturated during the temperature changes indicated?
 - change of 10°C to 30°C _____
 - change of 40°C to 80°C _____
 - change of 0°C to 10°C _____
 - change of 35°C to 85°C _____

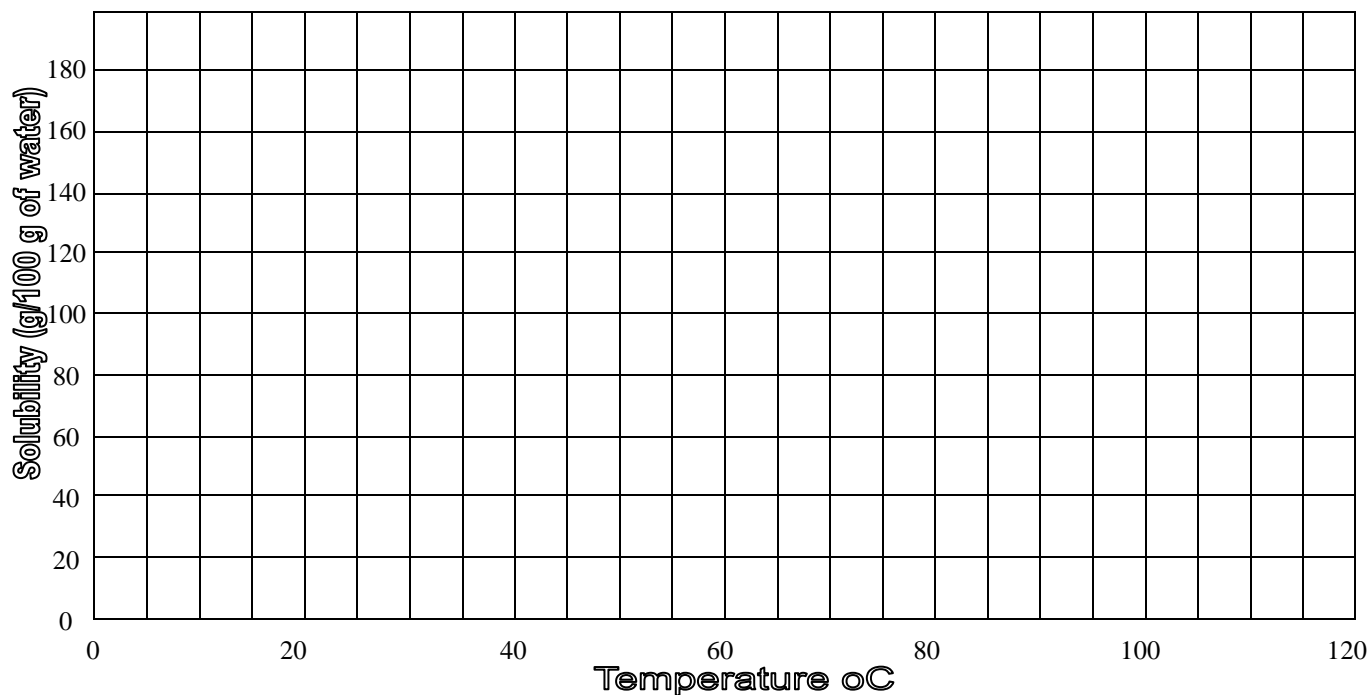


- At what temperature are the following solutes equally soluble in 100 g of water?
 - NaNO₃ and KNO₃ _____
 - NH₃ and KNO₃ _____
 - KClO₃ and NaCl _____
 - KClO₃ and KCl _____
- Which solute is least affected by the temperature changes?

- Which solutes show a decrease in solubility with increasing temperature?

Use the information in the table to graph the solubility curves for the four compounds. Use a different colored pencil for each compound.

Compound	Solubility in g/100 g water			
	0°C	20°C	60°C	100°C
Ba(OH) ₂	1.67	3.89	20.94	101.40
CuSO ₄	23.10	32.0	61.8	114.0
KCl	28.0	34.2	45.8	56.3
NaNO ₃	73.0	87.6	122.0	180.0



Use the information in the table and your graph to answer the following questions.

8. At about what temperature will 100 g of water dissolve equal amounts of potassium chloride and barium hydroxide?

9. At about what temperature will 37 g of both copper II sulfate and potassium chloride dissolve in 100 g of water?

10. If 100 g of sodium nitrate are dissolved in 100 g of water at 60°C, is the solution formed saturated, unsaturated, or supersaturated?

11. If 32 g of copper sulfate are dissolved in 100 g of water at 20°C, is the solution produced saturated, unsaturated, or supersaturated?
