

Solutions, Acid, Base Review**Name** _____Solutions

1. Fill in the table below:

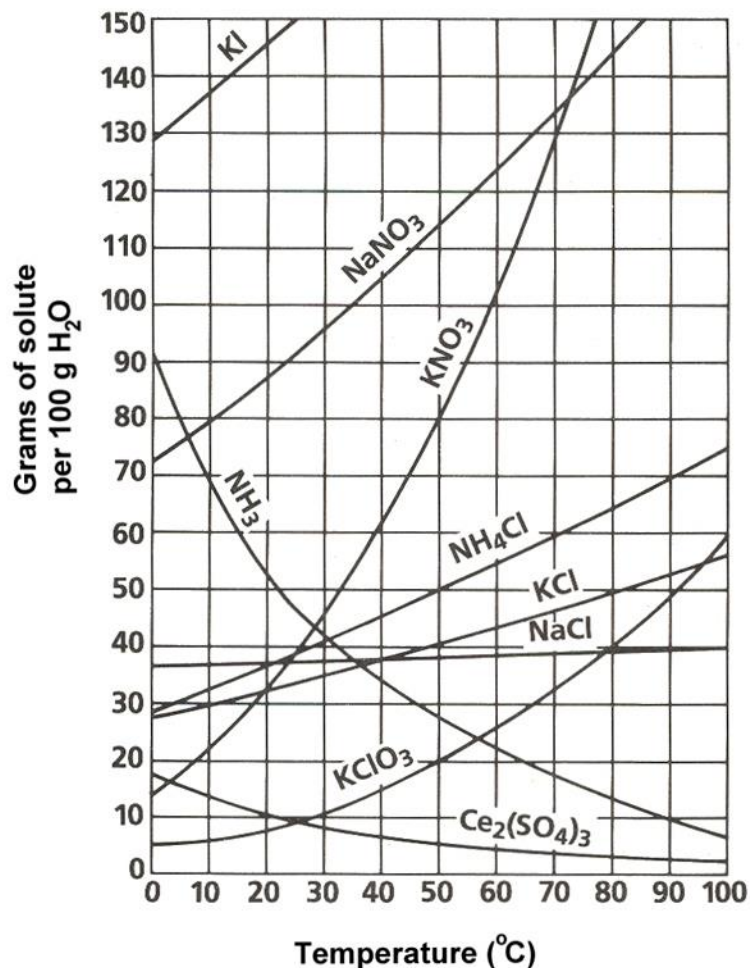
Compound	Electrolyte	Nonelectrolyte
LiBr		
Sucrose		
HCl		
Benzene (C ₆ H ₆)		
Fe(OH) ₃		

2. Fill in the table below:

Property	Colloid	Solution	Suspension
Demonstrates Tyndall Effect			
Medium-sized particles			
Does not settle out			
Separates by filtering			
Fog			
Homogenous mixture			
Muddy water			

3. What is the molarity of 4125 mL calcium hydroxide solution containing 7.8 moles?

4. Answer the following questions using the graph below:



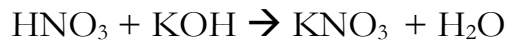
- What type of solution is 180 grams of NaNO₃ in 200 grams of water at 20°C?
- Based on the graph is KCl a solid or a gas? How do you know?
- How much potassium chlorate will need to be added to a saturated solution at 50°C if the temperature is increased to 80°C to keep it a saturated solution? (the solution is dissolved in 100 grams of water)
- What is the most soluble salt at 80°C? Least soluble?

5. What is the volume of a 12M solution of hydrobromic acid containing 35 grams of hydrobromic acid?
6. Define colligative property. Identify the 4 colligative properties.
7. Rank the following from lowest boiling point to highest boiling point: salt water, sugar water, and water. (Hint: Think about colligative properties)
8. Why do road crews put a saline (salt) solution on the ground before/after a snow or ice storm? (Hint: This about colligative properties)

Acid/Base

1. Name or write the formula for these acids and bases
 - a) HI
 - b) $\text{Sr}(\text{OH})_2$
 - c) $\text{Co}(\text{OH})_3$
 - d) $\text{HC}_2\text{H}_3\text{O}_2$
 - e) Hydrosulfuric acid
 - f) Magnesium hydroxide
 - g) Chromium (II) hydroxide
 - h) Carbonic acid
2. What is the concentration of 57 mL of hydrochloric acid when it is neutralized by 84 mL of a 2.4 M sodium hydroxide solution?
3. What volume is needed to dilute a 6 M solution of sodium hydroxide to 3.0 L of a 0.25M solution?

4. Identify the Acid and Base in the following reaction.



5. Fill in the table below:

$[\text{H}^+]$	pH	$[\text{OH}^-]$	pOH	Type of Soln
$3 \times 10^{-4} \text{ M}$				
	8.7			
		$6.4 \times 10^{-10} \text{ M}$		
			10.2	

6. What is the pH of a $7.3 \times 10^{-9} \text{ M}$ lithium hydroxide (LiOH) solution?

7. What is the $[\text{H}^+]$ of a $3.7 \times 10^{-10} \text{ M}$ sodium hydroxide (NaOH) solution?

8. Write the neutralization reaction between the following substances:

a. Hydrobromic acid and Calcium hydroxide

b. Phosphoric acid and Barium hydroxide

9. Identify if the substances below are strong or weak and acids or bases.

Substance	Strong	Weak	Acid	Base
NH_3				
HNO_3				
H_3PO_4				
KOH				

