Chemistry 122 **Water Equilibrium Intro**

1. Calculate the $[OH^-_{(aq)}]$ in limes which have a $[H^+_{(aq)}]$ of 1.3×10^{-2} mol/L
2. Calculate the $[H^+_{(aq)}]$ in lemons which have a $[OH^-_{(aq)}]$ of 2.0×10^{-12} mol/L
3. A sodium hydroxide solution is prepared by dissolving 2.50 g to make 2.00 L of solution. Calculate the hydroxide and hydrogen ion concentrations.
4. A 0.728 g sample of hydrogen chloride gas is dissolved in 2.00×10^2 mL of solution. Calculate the hydrogen and hydroxide ion concentrations.
5. A vinegar solution has a hydrogen ion concentration of 1.5×10^{-3} mol/L. Calculate the pH.
6. An ammonia solution has a pOH of 2.92. What is the concentration of hydroxide ions in the solution?
7. The hydrogen ion concentration in an industrial effluent is 4.40×10^{-3} M. Determine the pH, pOH, $[OH^-_{(aq)}]$.
8. The hydroxide ion concentration in a household cleaning solution is 2.99×10^{-4} M. Determine pH, pOH, $[H^+_{(aq)}]$.
9. Calcium hydroxide is only slightly soluble in water, with a solubility of 6.9×10^{-3} mol/L. Determine the $[H^+_{(aq)}]$, pH, pOH, $[OH^-_{(aq)}]$.
10. A potassium hydroxide solution was prepared by dissolving 20.0 g KOH to form 5.00×10^2 mL of solution. Determine the $[H^+_{(aq)}]$, pH, pOH, $[OH^-_{(aq)}]$.
11. Calculate the pOH and pH of a solution made by dissolving 7.50 g of strontium hydroxide to make 500 mL of solution.
12. Complete the following table

Substance	$[H^+_{(aq)}]$ (mol/L)	pH	$[OH^-_{(aq)}]$ (mol/L)	pOH	Acidic, Basic, or Neutral
Milk			3.2×10^{-8}		
Pure Water		7.0			
Blood	4.0×10^{-8}				
Cleaner				3.20	