pH & Concentration Name:_____

$pH = -\log [H^+]$	**$[H^+] = 10^{-pH}$**	**$[H^+] \times [OH^-] = 1.0 \times 10^{-14}$**
$pOH = -\log [OH^-]$	**$[OH^-] = 10^{-pOH}$**	**$pH + pOH = 14$**

Part A: Table
Use the equations above to fill out the chart below. Use appropriate units in your answer when necessary.

	$[H^+]$	pH	Acid/Base	$[OH^-]$	pOH
_____ *M* HCl	1.00×10^{-4} *M*				
----------		11.0			
----------				1.00×10^{-6} *M*	
_____ *M* HCl					12.5
_____ *M* HCl		2.10			
----------	4.00×10^{-5} *M*				
_____ *M* NaOH					1.30
----------				2.30×10^{-8} *M*	
----------		6.70			
_____ *M* NaOH	9.50×10^{-10} *M*				

Part B: Calculations
Solve the following problems by showing all work, including equations used. Use appropriate units in your answer when necessary.

1) What is the molar concentration of HNO_3 in a solution that has a pH of 4.50?

2) What is the molar concentration of $Ca(OH)_2$ in a solution that has a pOH of 3.50?

3) What is the pH of a 2.00 *M* solution of H_2SO_4? (Assume that both H^+ protons dissociate)

4) What is the pOH of a 0.100 *M* solution of LiOH?

5) What concentration of H_2SO_4 has a pH of 1.00, assuming that both protons dissociate?