Name: **Date:**   **Period:**   **Seat #:**

Work out these problems. Form groups at the lab tables and go over the answers. Make certain everyone understands each problem.

1.   You place 2.0 mol of hydrogen iodide in a 1.0-L container at a certain temperature. The compound partially dissociates according to the equation $2\ HI(g) \rightleftharpoons H_2(g) + I_2(g)$. If 22% of the HI has dissociated at equilibrium, calculate K_c.

2.   A saturated solution of milk of magnesia, $Mg(OH)_2$, has a pH of 10.5. What is the hydronium ion concentration of the solution? What is the hydroxide ion concentration? Is the solution acidic or basic?

3.   Calculate the pH of the following solutions:
      a) 2.8×10^{-3} M HCl

      b) 2.8×10^{-5} M HCl

      c) 2.8×10^{-8} M HCl

4.   Dissolving ammonium bromide in water gives an acidic solution. Write a balanced equation showing how this can occur.

5. What are the equilibrium concentrations of hydronium ion, acetate ion, and acetic acid in a 0.20 M aqueous solution of acetic acid? What is the pH of the solution? $K_a = 1.8 \times 10^{-5}$

6. Calculate the hydroxide ion concentration, hydronium ion concentration, and pH for a 0.015 M solution of the salt sodium acetate, $NaC_2H_3O_2$.