Unit 8 – Chapter 14: Acids & Bases **Name _____**

Assignment #2: Prelab questions – Experiment 27 **Period _____**

For each of the following questions, circle the correct answer and SHOW YOUR WORK IN THE SPACE BELOW.

1) What are the major species present in 0.250 *M* solutions of each of the following acids? Calculate the pH of each of these solutions.
   a. HNO_2 c. NH_4Cl
   b. CH_3CO_2H ($HC_2H_3O_2$) d. HCN

2) Calculate the pH of each of the following solutions containing a strong acid in water.
   a. 3.0×10^{-5} *M* HCl c. 4.0 *M* HNO_3
   b. 2.0×10^{-2} *M* HNO_3

3) A solution is prepared by mixing 90.0 mL of 5.00 *M* HCl and 30.0 mL of 8.00 *M* HNO_3. Water is then added until the final volume is 1.00 L. Calculate $[H^+]$, $[OH^-]$, and the pH for this solution.

4) For propanoic acid ($HC_3H_5O_2$ or $CH_3CH_2CO_2H$) $K_a = 1.3 \times 10^{-5}$. Calculate $[H^+]$ and the pH for 0.050 *M*, 0.10 *M*, and 0.40 *M* solutions of propanoic acid.