CHAPTER 17	**Determining the pH of Buffer Solutions**	**BLM 17.4.4**
ASSESSMENT		

Imagine you are given 50.0 mL of a 0.5 mol/L solution of HNO_2 and 50.0 mL of a 0.5 mol/L solution of KNO_2. Using the following steps, determine the pH of the resultant solution. Write on the back of this sheet if you need additional space.

1. Determine the initial concentrations of HNO_2 and NO_2^-.

2. Write down the chemical equation for the dissociation of HNO_2.

3. Using the ICE table below, fill in the initial, change, and equilibrium concentrations.

Equation:

Initial				
Change				
Equilibrium				

4. Write the equilibrium expression for the K_a of HNO_2.

5. Insert your equlibrium concentrations into the expression written above and solve for x. (The K_a of HNO_2 is 5.6×10^{-4}.)

6. Using the formula, $pH = -\log[H_3O^+]$, determine the pH of the buffer solution.