**Ka and Kb Homework** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Distinguish between Ka, Kb, and Kw. How are they related?
2. Write a balanced equation the dissociation of acetic acid (HCH3COO) in water. Then write the Ka expression.
3. Write a balanced equation for the dissociation of carbonic acid in water. Then write the Ka expression.
4. 7. What is the Ka for a 1.2 M solution of HF, when the Kb of this acid is 6.8x10-11. Additionally, find the pKa of this solution. Finally, name this acid.
5. Write a balanced equation for the dissociation of calcium hydroxide in water. Then write the Kb expression. If The Kb of calcium hydroxide is 1.8x10-4, and the concentration of the products are each 3.0x10-4, calculate the concentration of calcium hydroxide at equilibrium. Calculate calcium hydroxide’s Ka as well.
6. At equilibrium the [H3O+] and [COOH-] of a 0.100 M methanoic acid (HCOOH) solution are 4.2 x 10-3 M each. Calculate the Ka of the acid.
7. An ammonia (NH3) solution has a Kb of 1.8x10-5. The equilibrium [NH3] is 8.81x10-4 M. Write a balanced dissociation equation, the Kb expression and then calculate the [OH-], assuming the products have the same concentration at equilibrium.