**Buffer Problems**

**1.** Lactic acid is found in milk and human muscle tissue after excercise.

Calculate the pH of a solution containing 0.75 M lactic acid HC3H5O3 (Ka = 1.4 x 10-4) and 0.25 M sodium lactate. **(pH 3.38)**

**2a)** A buffered solution contains 0.25 M ammonia NH3 (Kb = 1.8 x 10-5) and 0.40 M NH4Cl.

Calculate the pH of this solution. **(pH 9.05)**

**2b)** Calculate the pH of the solution that results when 0.10 mol of gaseous HCl are added to 1.0 L of the buffered solution from 2a. **(pH 8.73)**