# CHM 112 (Quiz 10)

Name_____                    Section_____

Show all work and draw a box around your final answer.

1. What is the pH of a solution made by combining 1.00 mole of benzoic acid ($HC_7H_5O_2$) with 10.0 grams of sodium hydroxide (NaOH, mw=40.0 g·mol$^{-1}$) and diluting with enough water to make a final volume of 1.00 liter. $K_a$ for benzoic acid is $6.5 \times 10^{-5}$. *Hint: you just made a buffer solution.*                    *(5 pts)*

2. What is the pH of the solution above when 500.0 ml of 0.500 M NaOH is added? Please use correct significant figures in expressing your final pH.                    *(10 pts)*

3. What is the pH of the solution in problem 2 when an additional 400.0 ml of the 0.500 M NaOH is added? Please use correct significant figures in expressing your final pH. *(10 pts)*