Experimental 4: Heat of Neutralization   <mark>Nyrimbi Brantley</mark>

A. Heat Capacity of Calorimeter

   Assuming: heat capacity of calorimeter is zero !!!

B. Heat of Neutralization of HCl+ NaOH

	1.0 M NaOH, 50 mL	1.0 M HCl, 50 mL
Temperature before mixing	22°C	22°C
Average (T_i)	22°C	
Temperature after reaction (T_f)	32 °C	
Calculate Heat of Neutralization	Q=mc(change in temp) 1 mole NaOH = 40g Q= (40g)(4.1814J)(10)= 1672.56J	

C. Heat of Neutralization of CH_3COOH+NaOH

	1.0 M NaOH, 50 mL	1.0 M CH₃COOH, 50 mL
Temperature before mixing	22 °C	21.5 °C
Average (T_i)	22 °C	
Temperature after reaction (T_f)	27 °C	
Calculate Heat of Neutralization	Q=mc(change in temp) 1 mole NaOH = 40g Q= (40g)(4.1814J)(5)= 836.28	

D. Compare part B and C, discuss the results

In part B and C, the same acid was present, and the bases were different. The acid utilized was NaOH. Therefore, the acid's mass was the same for each part, but the change is temperatures were different. Also, the specific heat capacity for aqueous solutions were also equal. From the results, what was concluded was that the heat neutralization in part A was higher than part B. This may have been due to the changes in temperature. The temperature in part A was 10, as Part B was only 5.

Group members<mark>: Nyrimbi Brantley</mark>   Instructor: