1. A 5.20 g sample of sodium hydroxide is added to 105g of water. The temperature changes from 22.0 °C to 28.5 °C.

a. Is this reaction exothermic or endothermic? Why?

b. What is ΔT?

c. What is the sign of q for the surroundings? And for the system? Does this make sense (compared to your answer for a) What are you calculating the heat change for?

d. If you assume that the specific heat of the solution is 4.18 J/g. °C what is the heat change q for this reaction?

e. What is the enthalpy change in kJ/mol for the solution of NaOH?

f. Why do you think the solution gets warmer? (Where is the energy coming from?)