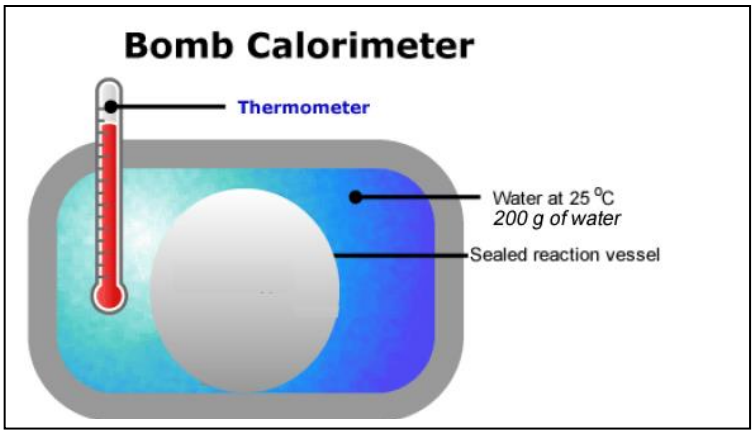
Friday Worksheet **Name: …….**

Calorimetry worksheet 1

1) Ethanol is used to calibrate a bomb calorimeter. 2.29 g of ethanol is placed in the bomb calorimeter and reacted with excess oxygen. After the reaction is complete, the temperature of the water surrounding the bomb in the calorimeter has increased by 34.2°C.
Calculate, to an appropriate number of significant figures, the calibration factor of the calorimeter, in $kJ°C^{-1}$.

2) The same bomb calorimeter as in question 1) above is used to burn a pure 0.300 gram sample of ethane gas in excess oxygen. The temperature was originally measured at 25.00 ^{o}C and reached a maximum of 32.82 ^{o}C .



a) Calculate the mol of ethane.

b) Calculate the molar heat of combustion of ethane

c) Write the combustion reaction of ethane

d) Calculate the ΔH of the combustion reaction in c) above.