

Friday Worksheet

Name:

Heat of reaction worksheet 2

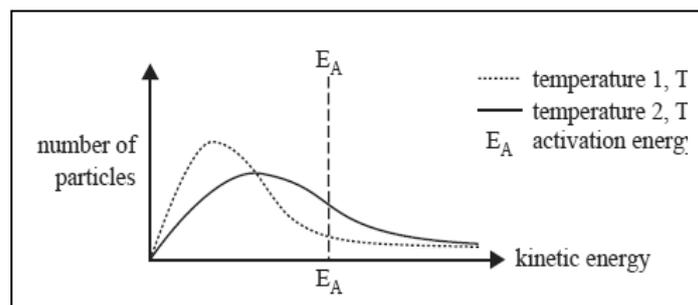
1) What is the enthalpy change when 60.0 g of NaOH is dissolved in one litre of water, given that the temperature of the solution increased by 15.8 °C?

2) The diagram below represents the distribution of the kinetic energy of reactant particles at two different temperatures. Assume that the areas under the curves are equal

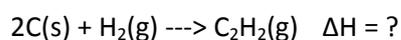
a) Which is the greatest temperature

T_1 or T_2 ?

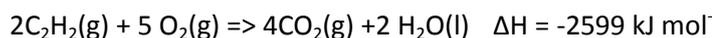
b) Which temperature has the highest number of particles with sufficient energy to react?



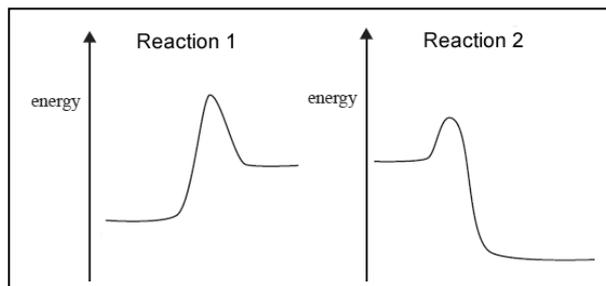
3) Calculate the enthalpy for the reaction below



Given the following thermochemical equations:

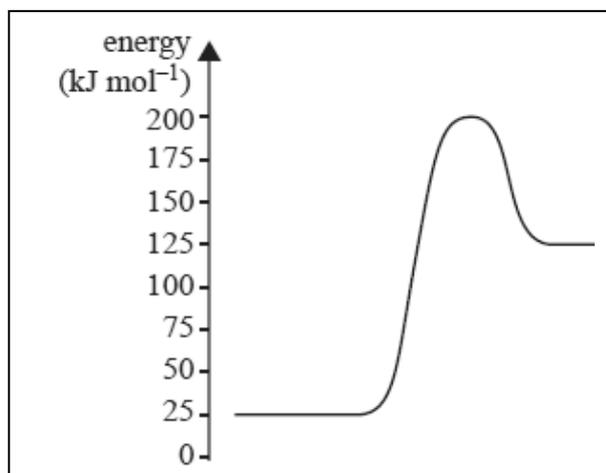


- 4) On the right are the energy profiles of two chemical reactions drawn to the same scale and carried out at the same temperature.



- a) Which reaction is endothermic and which is exothermic? Explain
- b) Which reaction occurs at the faster rate? Explain

- 5) Consider the following energy profile diagram for a reaction represented by the equation $2X + Y \Rightarrow 3Z + 2A$



- a) What is the activation energy for this reaction?
- b) Calculate the enthalpy.

- 6) If 108.0 kJ of energy is required to convert 2.00 mol of liquid water to steam at 100 °C, what is the amount of heat energy, in kilojoule, required to convert 80.0 g of water at 20 °C to steam at 100°C?