

Exercise 17.1a

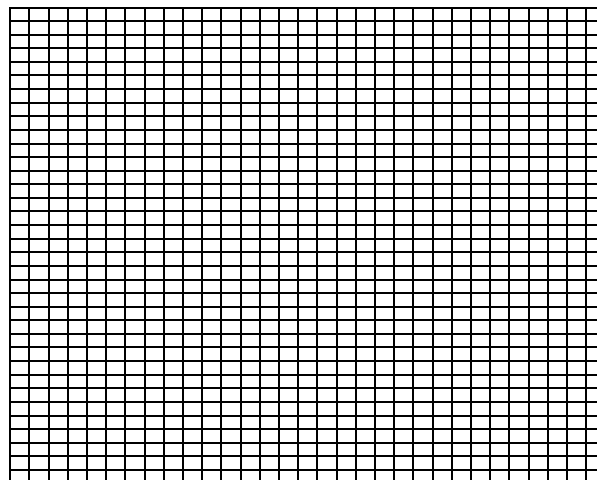
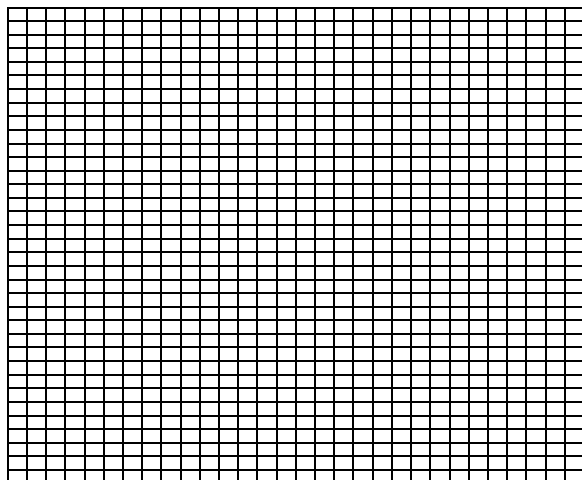
Enthalpy Graphing

Name: _____

Date: _____ Per: _____

DIRECTIONS: Answer the following in the space provided.

1. On the left hand graph, plot a chemical reaction in which the reactants have an energy content of 300. kJ, the products have an energy content of 20.0 kJ and the activated complex has an energy content of 340. kJ. Label the axes and include units. Is this an endothermic or exothermic reaction?
2. On the right hand graph, plot a chemical reaction in which the reactants have an energy content of 300. kJ, the products have an energy content of 2000. kJ and the activated complex has an energy content of 2600. kJ. Label the axes and include units. Is this an endothermic or exothermic reaction?



3. In an endothermic reaction, heat is absorbed and behaves as a _____ in the chemical reaction.
4. In an exothermic reaction, heat is released and behaves as a _____ in the chemical reaction.
5. In all chemical reactions _____ is initially required to begin the process of breaking bonds. This is called the _____ energy. Once the bonds are broken the reaction enters a period called the _____ and a high-energy cluster of particles with increased potential energy exists. This cluster is called the _____. As the potential energy of the particles draws them together new _____ are formed and energy is _____.
The difference between the enthalpy of the reactants and the enthalpy of the products is the *change in enthalpy* denoted by the symbol _____. Endothermic reactions always have a _____ change in enthalpy and exothermic reactions always have a _____ change in enthalpy. The overall change in energy in a chemical reaction is a result of _____ and _____ bonds.
6. Is this reaction $[C(s) + H_2O(g) \rightarrow CO(g) + H_2(g) ; \Delta H = +113kJ]$ exothermic or endothermic? _____
 - a. How can you tell by looking at the equation? _____