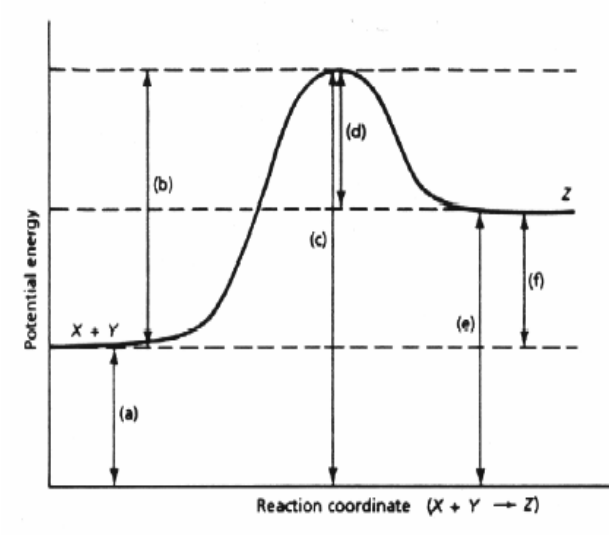
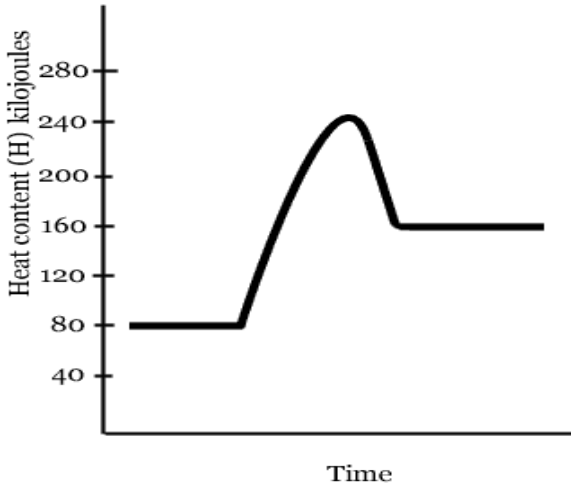
Potential Energy Diagram Worksheet



1. Which of the letters a–f in the diagram represents the potential energy of the products? _____
2. Which letter indicates the potential energy of the activated complex? _____
3. Which letter indicates the potential energy of the reactants? _____
4. Which letter indicates the activation energy? _____
5. Which letter indicates the heat of reaction? _____
6. Is the reaction exothermic or endothermic? _____
7. Which letter indicates the activation energy of the reverse reaction? _____
8. Which letter indicates the heat of reaction of the reverse reaction? _____
9. Is the reverse reaction exothermic or endothermic? ___



1. The heat content of the reactants of the forward reaction is about _____ kilojoules.
2. The heat content of the products of the forward reaction is about _____kilojoules.
3. The heat content of the activated complex of the forward reaction is about _____ kilojoules.
4. The activation energy of the forward reaction is about _____ kilojoules.
5. The heat of reaction (ΔH) of the forward reaction is about _____ kilojoules.
6. The forward reaction is _____ (endothermic or exothermic).
7. The heat content of the reactants of the reverse reaction is about _____ kilojoules.
8. The heat content of the products of the reverse reaction is about _____ kilojoules.
9. The heat content of the activated complex of the reverse reaction is about _____kilojoules.
10. The activation energy of the reverse reaction is about _____ kilojoules.
11. The heat of reaction (ΔH) of the reverse reaction is about _____ kilojoules.
12. The reverse reaction is _____ (endothermic or exothermic).

Name _____ Date _____ Period _____

Energy Ws #1: Reaction Rates

1. Chemical reactions occur when reactants collide. For what reasons may a collision fail to produce a chemical reaction?

2. If every collision between reactants lead to a reaction, what determines the rate at which the reaction occurs?

3. What is the activation energy of a reaction, and how is this energy related to the activated complex of the reaction?

4. What happens when a catalyst is used in a reaction?

5. Name 4 things that will speed up or slow down a chemical reaction.

6. Draw an energy diagram for a reaction. (label the axis)
   Potential energy of reactants = 350 KJ/mole
   Activation energy = 100 KJ/mole
   Potential energy of products = 250 KJ/mole

7. Is the reaction in # 6 exothermic or endothermic? Explain.

8. How could you lower the activation energy for the reaction in #6?