- Chemical Questions -
HONORS

1. Name 3 ways that you could increase the rate of a chemical reaction.

2. Acetic acid (a compound found in vinegar) reacts with baking soda to produce carbon dixoide, water and sodium acetate. Without writing the chemical formulas identify the reactants and the products of this equation.

3. Write a balanced equations for each of the following, then **classify** them as synthesis (addition), decomposition, single replacement(displacement) or double replacement.

a. ___Fe + ___O_2 → ___Fe_2O_3

b.___ Al + ___$CuSO_4$ → ___$Al2(SO_4)_3$ + ___Cu

c. ___$Ba(CN)_2$ + ___H_2SO_4 → ___$BaSO_4$ + ___HCN

d. ___CO + ___H_2 → ___H_2O + ___CH_4

e. ___C + ___Fe_2O_3 → ___Fe + ___CO_2

f. ___K + ___H_2O → ___KOH + ___H_2

4. Use the diagram at the right to answer the questions that follow:

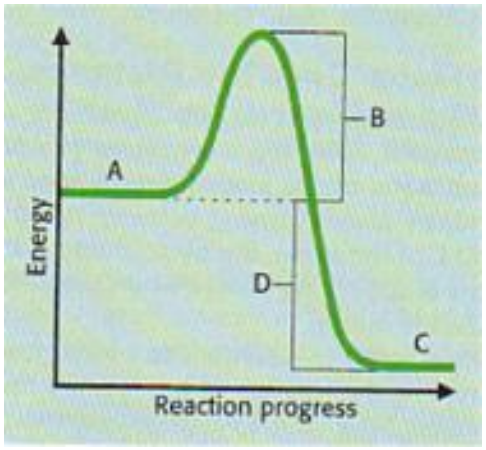
a. Which letter represents the energy that is in the products?_____

b. Which letter represents the activation energy needed to start the process?_____

c. Which letter shows the energy that is released in the reaction?_____

d. Is this reaction endothermic or exothermic? How can you tell?

e. Draw another line on the diagram shown to show how a catalyst would change the reaction.



5. Using your understanding of chemical bonds from the last chapter, write the skeletal formulas (including subscripts) for the following and balance the equations.

a. Bromine gas reacts with sodium iodide to from iodine and sodium bromide.

b. Lithium reacts with oxygen to produce lithium oxide.

Answer one of these questions in **a complete paragraph** on a separate piece of paper**.**

A. Explain why endothermic and exothermic reactions are needed for life to exist on this planet.

B. What is the difference between an endothermic and an exothermic reaction? How does this work with the Law of Conservation of Energy?

C. Describe the four different types of chemical reactions and how you could tell them apart by looking at a chemical equation.