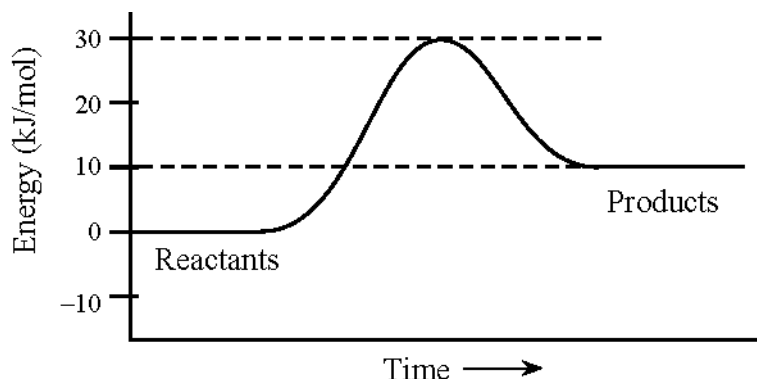


- 1) Given the energy diagram below, draw and label arrows for the  $E_A$  and the  $\Delta H$  of the reaction.

What is the value of the  $E_A$ ? \_\_\_\_\_

What is the value of the  $\Delta H$  of the reaction? \_\_\_\_\_

Is the reaction exothermic or endothermic? \_\_\_\_\_

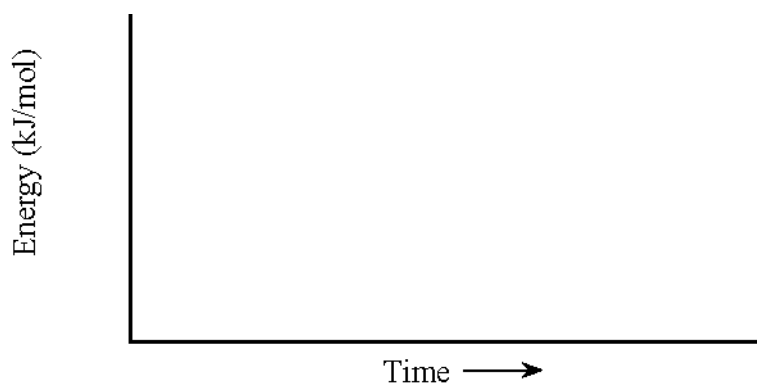


- 2) For a particular reaction, the activation energy is 40 kJ/mol and the  $\Delta H$  is  $-60$  kJ/mol.

On the axes below, draw an energy diagram for the reaction.

*(Make sure to place the reactants at zero kJ/mole)*

Draw and label arrows for the activation energy and the  $\Delta H$  of the reaction.



- 3) The collision theory states that two molecules must collide in order to \_\_\_\_\_.

- 4) There are two conditions that must be met in order for a collision to be effective. What are they?

- 5) The activation energy of a reaction is the amount of energy needed to \_\_\_\_\_.

- 6) What is an activated complex and why is it so unstable?