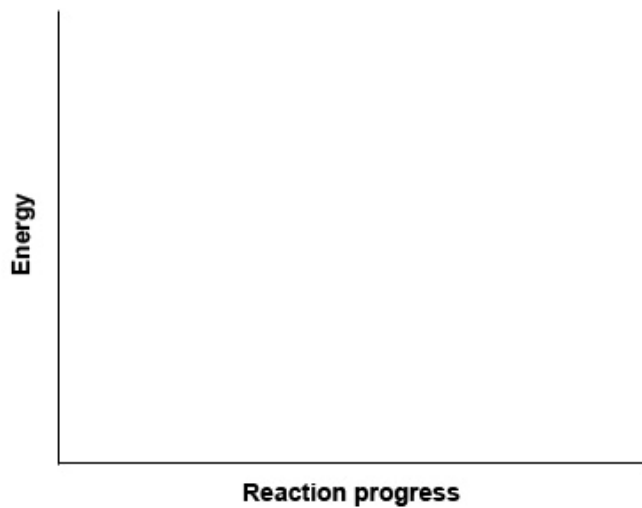


Chapter 05 Worksheet 01

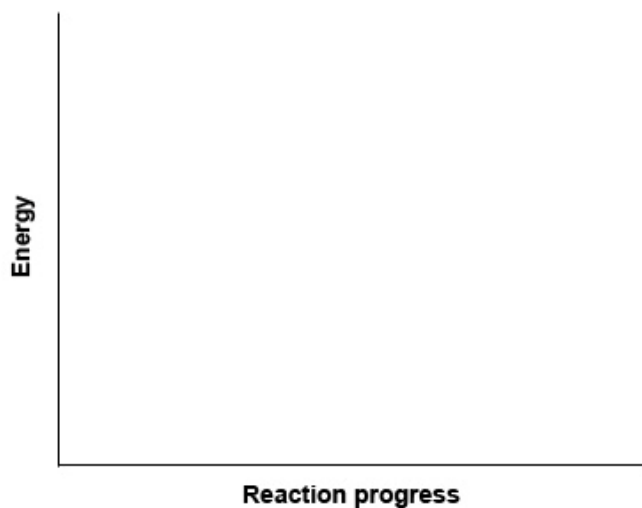
Draw the reaction energy diagram, and label the products, reactants, transition states, and intermediates.

1.



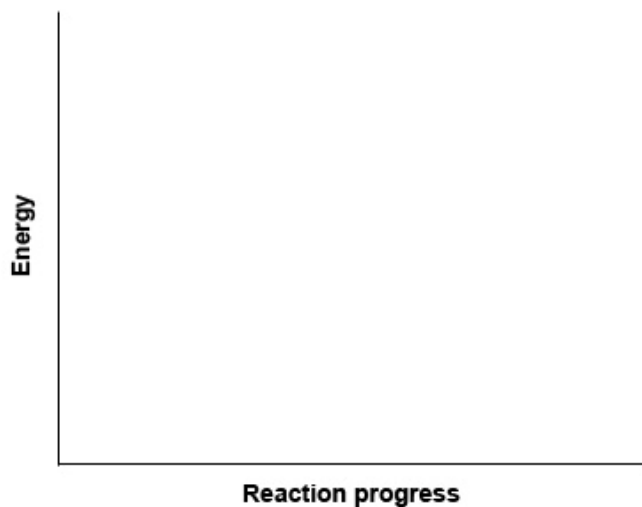
- 3-Step reaction
- 2nd step is Rate-Determining-Step
- 3rd step is faster than the 1st
- 1st step is endothermic
- 2nd step is exothermic
- 3rd step is exothermic
- The overall reaction is exothermic

2.



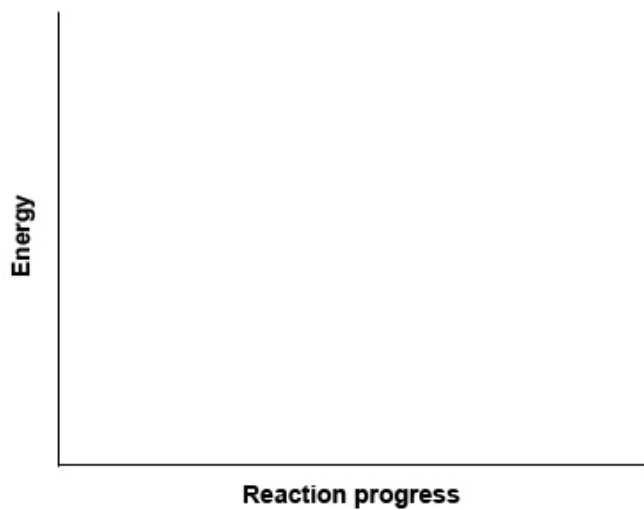
- 3-Step reaction
- 3rd step is Rate-Determining-Step
- 1st step is faster than the 2nd
- 1st and 2nd step are endothermic
- 3rd step is exothermic
- The overall reaction is neutral

3.



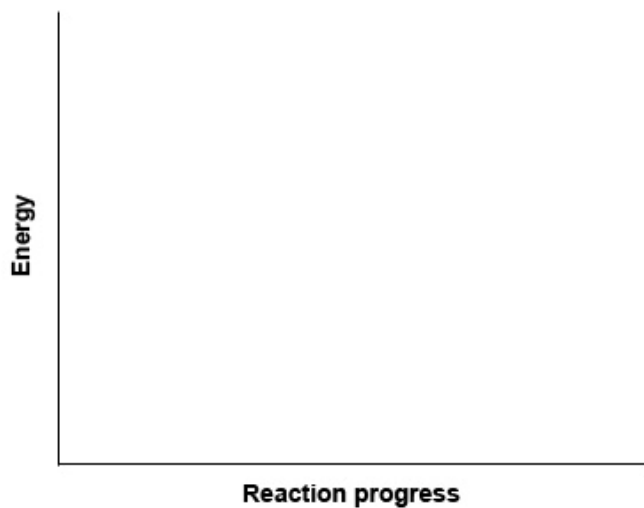
- 3-Step reaction
- 2nd step is faster than the 3rd
- 1st and 2nd step are endothermic
- 3rd step is exothermic
- The overall reaction is exothermic

4.



- 4-Step reaction
- 3rd step is Rate-Determining Step
- 1st step is endothermic
- 1st and 2nd step proceed at the same speed
- 3rd step is exothermic
- 4th step is exothermic
- The overall reaction is exothermic

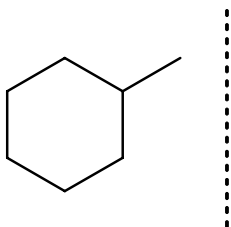
5.



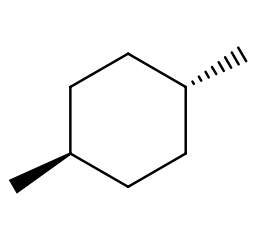
- 3-Step reaction
- 3rd step is Rate-Determining-Step
- 1st step is faster than the 2nd
- 1st and 3rd steps are exothermic
- 2nd step is endothermic
- The overall reaction is endothermic

Draw mirror images of the following.

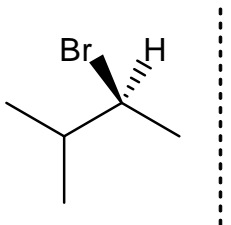
6.



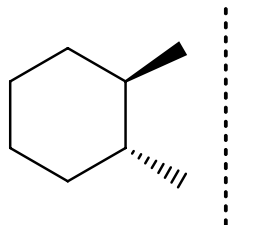
7.



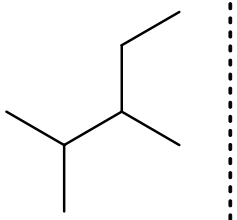
8.



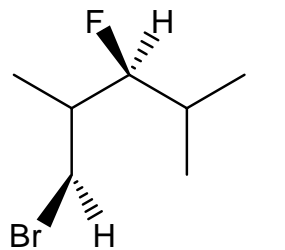
9.



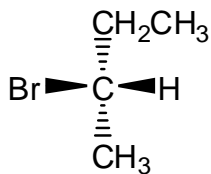
10.



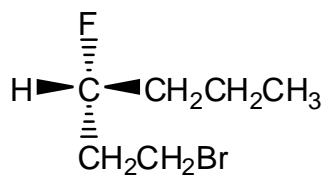
11.



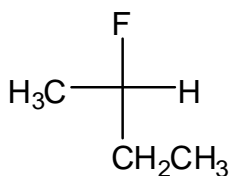
12.



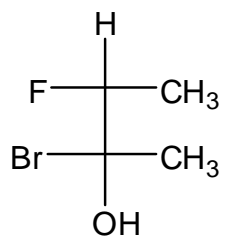
13.



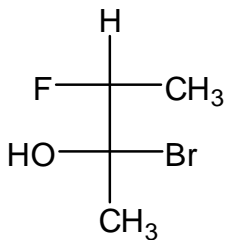
14.



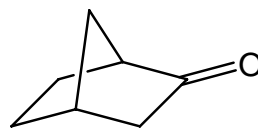
15.



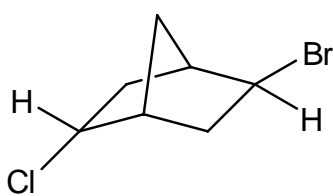
16.



17.



18.



Label the chiral carbons with an asterisk (*), and determine whether the compound itself is chiral or achiral.

