CONCEPT: THERMAL ELECTROCYCLIC REACTIONS

- Pericyclic reactions in which ______ *π-bond* is destroyed after a _____-activated cyclic mechanism
 - □ Always *intramolecular*



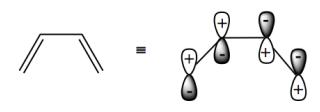




Reactant π-bonds

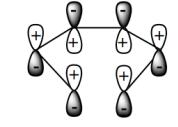
Product π-bonds

- All conjugated polyenes are capable of intramolecular electrocyclic reactions, however stereochemistry is variable.
 - □ The HOMO orbital is capable of cyclizing in either a _____ or ____ fashion



Conrotatory
(Orbitals rotate the same direction)





Disrotatory
(Orbitals rotate different directions)

• When substituents are involved in cyclization, stereochemistry is dependent on rotation type.

EXAMPLE: Predict the product in the following electrocyclic reaction. Label the reaction as either conrotatory or disrotatory.

