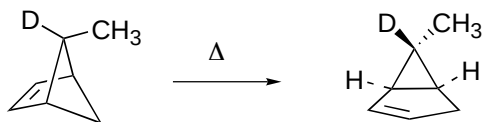
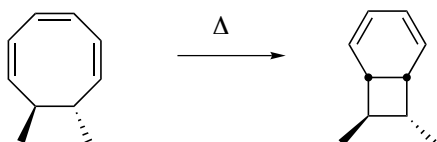


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Problem set 3 (based upon lecture 3)

Problem set 4 (based upon lectures 3 & 4)

- [a] Use "curly arrows" to formulate a "mechanism" for the following transformations.
- [b] Formulate a cyclic array for each transformation.
- [c] Determine whether the array is of the Hückel or Möbius variety.
- [d] Which reaction(s) is (are) allowed? What is the basis for your response?
- [e] Examine each transformation and determine whether it corresponds to an electrocyclic or to a sigmatropic reaction. If electrocyclic, then is a con or a disrotatory process illustrated? If sigmatropic, then determine whether the migration shown corresponds to a suprafacial or an antarafacial migration and whether the migrating carbon has done so with retention or inversion of configuration. Be certain that your cyclic array is consistent with your response.
- [f] Examine the 2nd case using hand-held models.



2. Use circle mneumonics to quickly formulate the correlation diagrams for the con and disrotatory ring opening of (cyclization of) 1,3-cyclohexadiene (1,3-Z,5-hexatriene). Predict which corresponds to the thermally and photochemically allowed pathways.