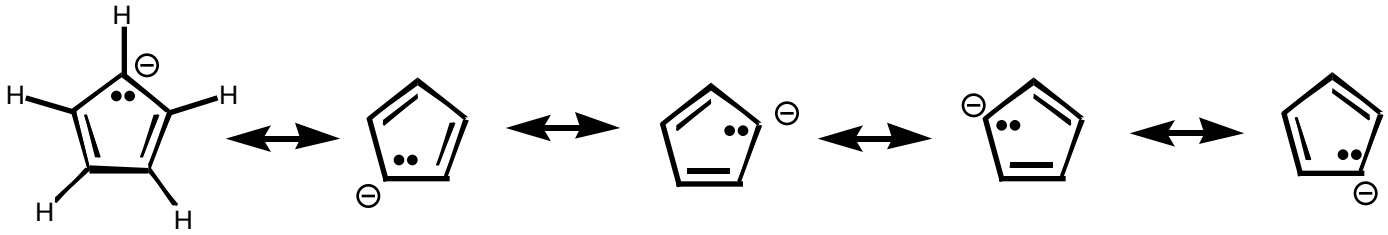
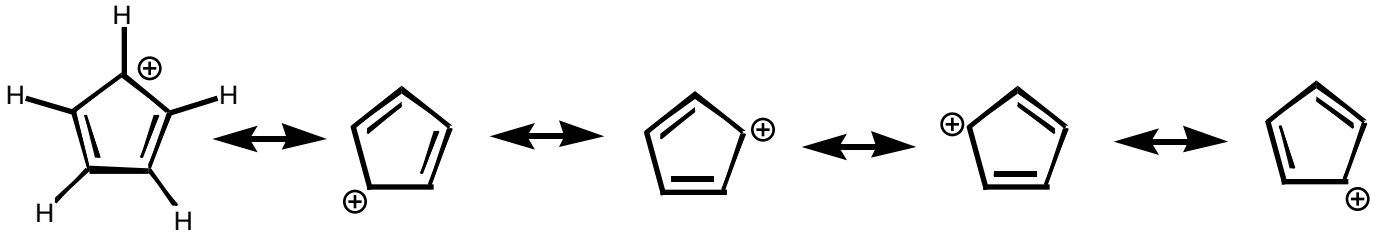
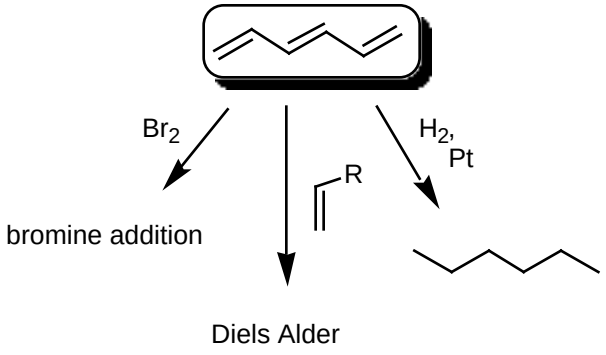
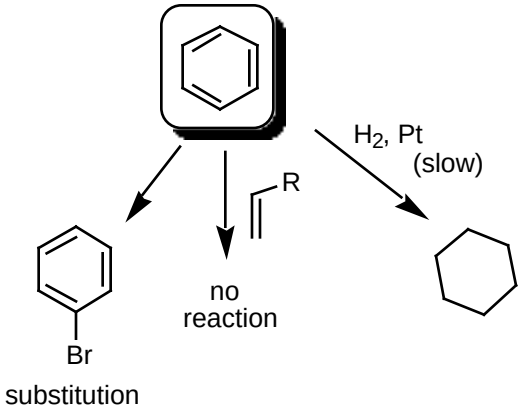
Chemistry 304B, Spring 1999 Lecture Notes 8



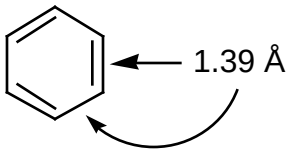


Now: **6 orbital systems**---1,3,5-hexatriene and cyclohexa-1,3,5-triene



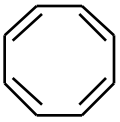


Historical interlude:

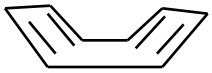


Normal C-C = 1.54Å 1,3-butadiene: 1.47 Å
Normal C=C = 1.33Å

cyclobutadiene

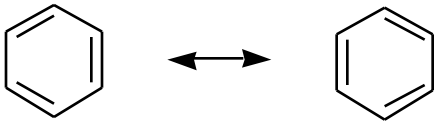


cyclooctatetraene

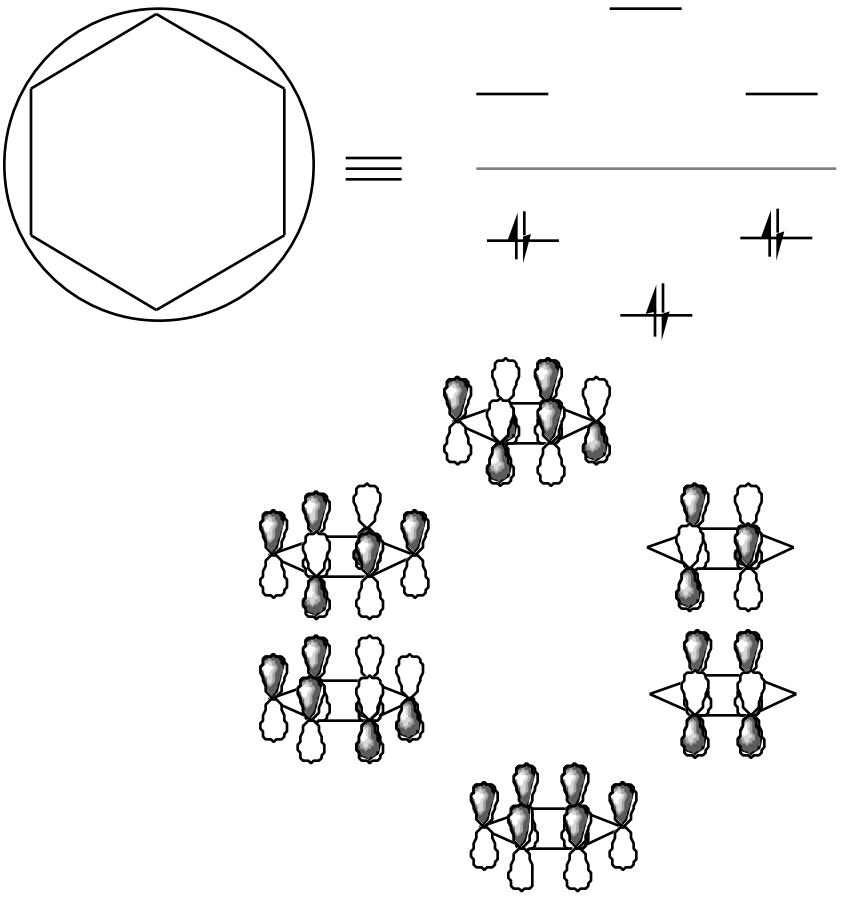


tub conformer

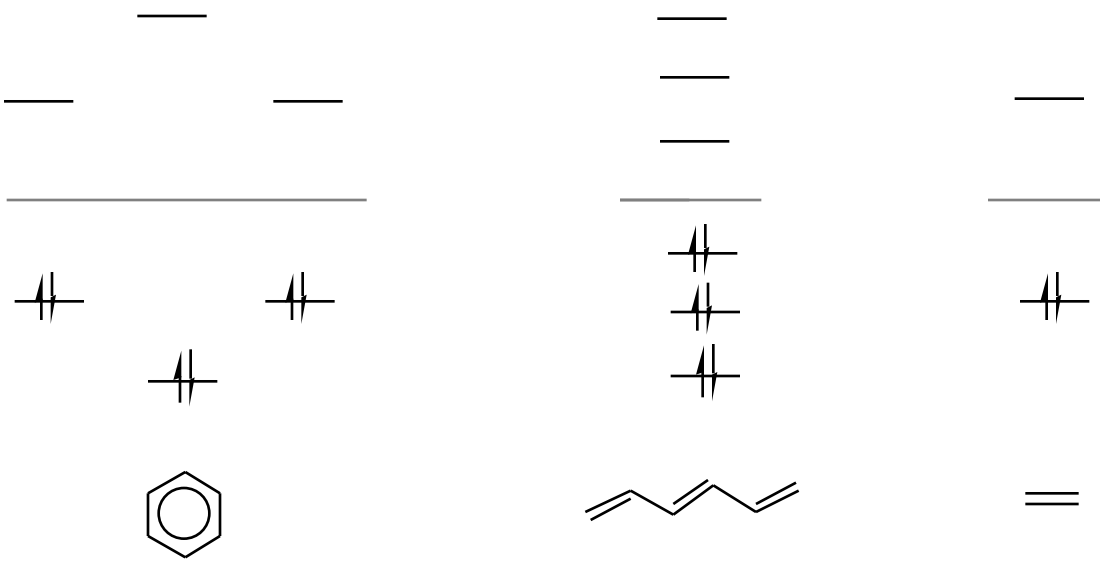
Resonance picture:



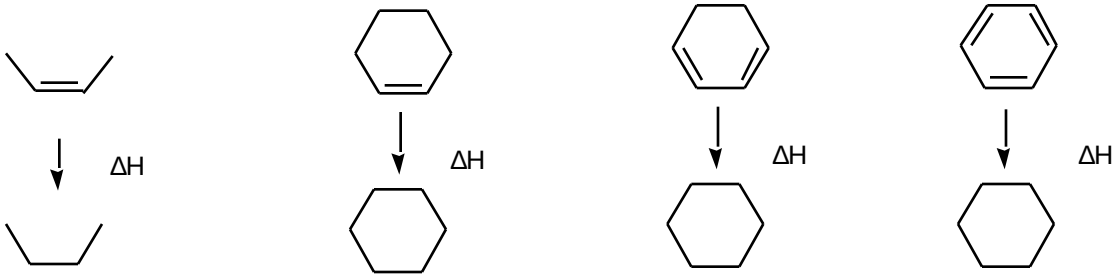
MO picture: Frost Circle



Compare with 1,3,5-hexatriene and 3 ethylenes

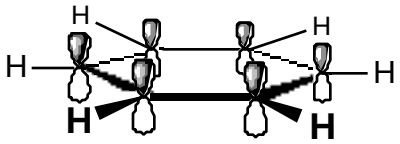


What is it worth?



Some of the first compounds shown to have benzene rings also had strong odors. A correlation was imagined between the benzene ring and odor--**aromatic compounds**.

"the aromatic region of the NMR spectrum"



"aromatic stabilization"--------33 or so Kcal/mol

Minimum requirements:

1. cyclic
2. continuous set of p orbitals
3. planar

One more: Recall Frost Circle, consider other polygons