

Conformations of Alkanes + Cycloalkanes:

"Conformation" - the rotation of alkanes that results from the sp^3 orbital overlap to give different arrangement of atoms

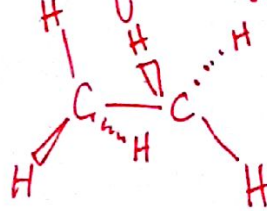
Take Ethane:

Condensed:
CH3CH3

Line-Angle

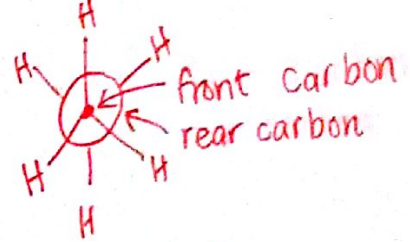


Saw-Horse:
oblique angle

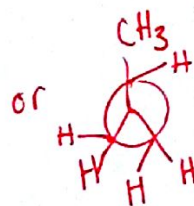
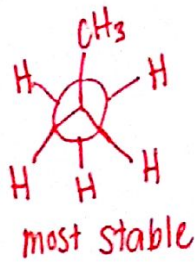


Newman Projection:

end-on view



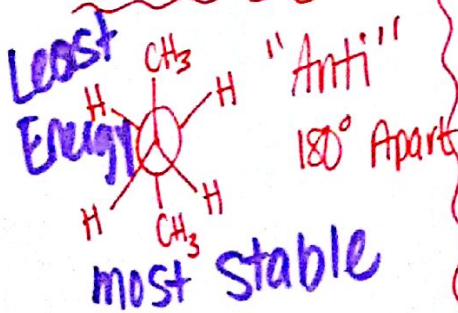
12.



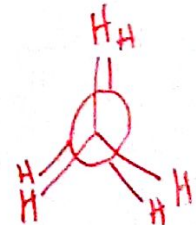
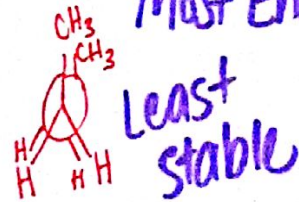
"Staggered"
most stable
conformation

13. Look along $C_2 - C_3$ bond of butane

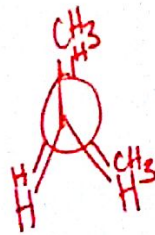
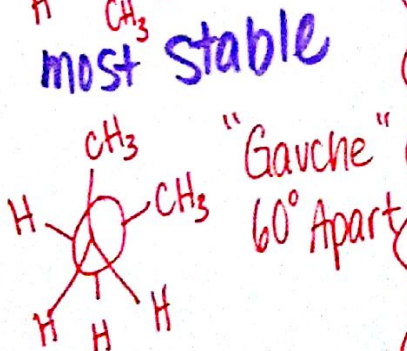
2 Staggered & 2 eclipsed



Most Energy



"Eclipsed"
Least Stable



Remember that
more stable conf. =
less overall
energy

Conformations of Cyclohexane

How to Draw Chair Conformations:

1. Draw 2 parallel, offset lines



2. Add Side carbons



Bad

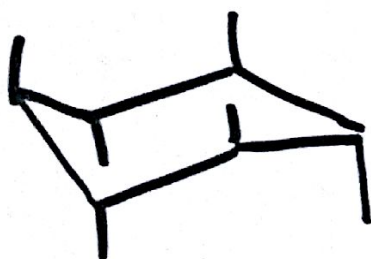


Eh...

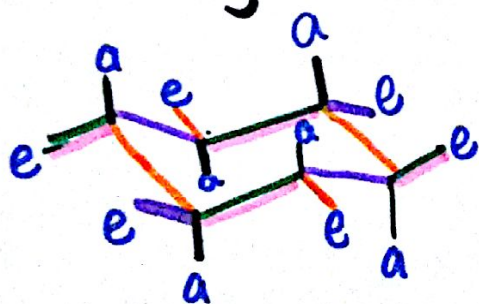


Good

3. Add axial Bonds - alternating up/down



4. Fill in equatorial bonds - use c-c bonds as a guide



ring flip



during this process, a + e switch places

