<u>CHEM 261</u>

Review:





6 different drawings of the same molecule above, note that the darkened region (bottom edge of cyclohexane) is the front of the viewing region in the chair confirmation



H₃C~

H₃C

 CH_3

Polysubstituted cyclohexanes







More Examples:

Cis – the hydrogen atoms of the substituent is on the same side of the ring Trans- the hydrogen atoms of the substituent is on opposite side of the ring

cis-1,2-dimethylcyclohexane

trans-1,2-dimethylcyclohexane

Example: Cis-1,3-dimethylcyclohexane







Example:

cis-1,4-dimethylcyclohexane and trans-1,4-dimethylcyclohexane:



cis-1,4-dimethylcyclohexane

Н

Example: trans-1,4-dimethylcyclohexane:



ĊH₃

How to draw the most stable conformation of substituted cyclohexanes:

- 1. Start by drawing the chair conformation of cyclohexane
- 2. Put the largest group in an equatorial position
- 3. Draw the next group(s) on the correct side (face) with respect to the largest group



Note that the largest substituent (tertiary butyl) is placed in the equatorial position to avoid destabilizing 1,3-diaxial interactions

Another example:



Examples of Basic Bicyclic Compounds:



there are two sets of two carbons (C1, C2) on both sides of the bridge head, hence, 2, 2

Bicyclic Nomenclature: 4, 4, 0





A tricyclic compound:



Adamantane - This will be the basic structure of diamond

Diamond:

