

Office Hours: M 1:30pm - 3:00pm
(in Park 169) W 11:00am - 12:00pm
or by appointment (email me)
or just email me with questions!

TA Hours w/ Sodtugs: T&Th 7:00pm - 8:00pm
(in Park 273)

Q-center: <https://www.brynmawr.edu/inside/offices-services/q-center/q-center-schedule>

Isomerism

Alkane Conformations

Cycloalkanes

9/14/2026

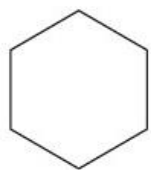
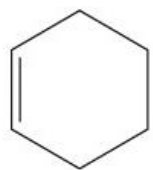
Exam 1 Friday during lecture

No recitation this week

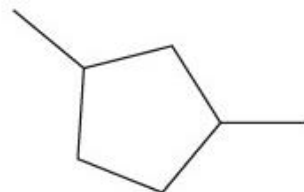
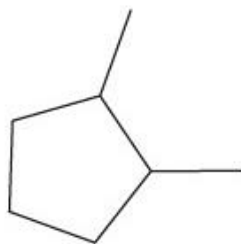
Poll

pollev.com/timcook653 or text timcook653 to 22333
Or use Android/iPhone app

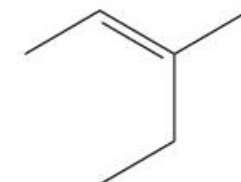
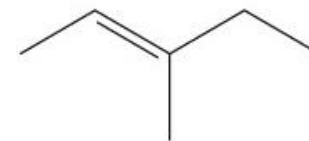
Which of these pairs of molecules are constitutional isomers?



A



B

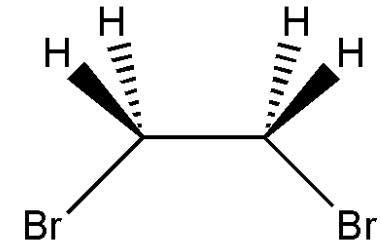
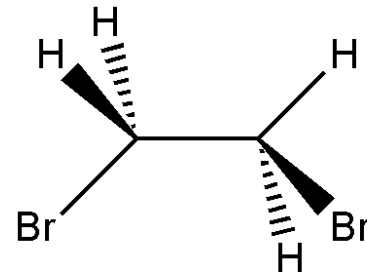
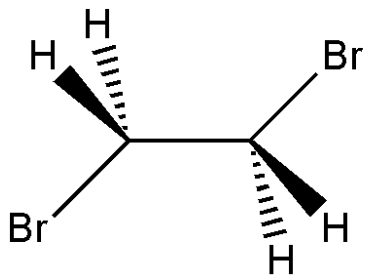


C

Alkane conformations

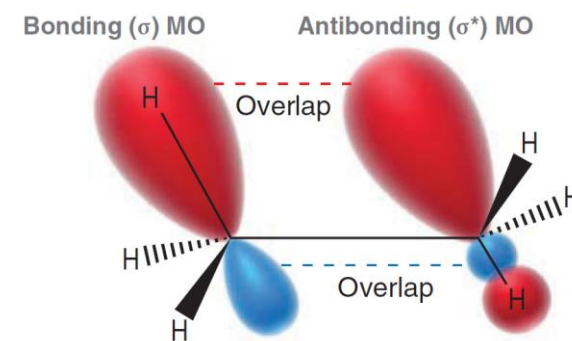
- Conformational isomers (conformers) -

Newman projections



Conformational Analysis and Strain

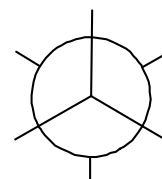
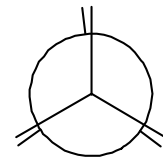
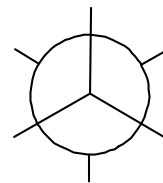
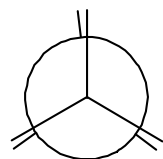
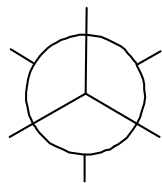
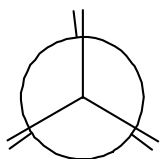
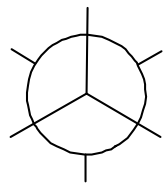
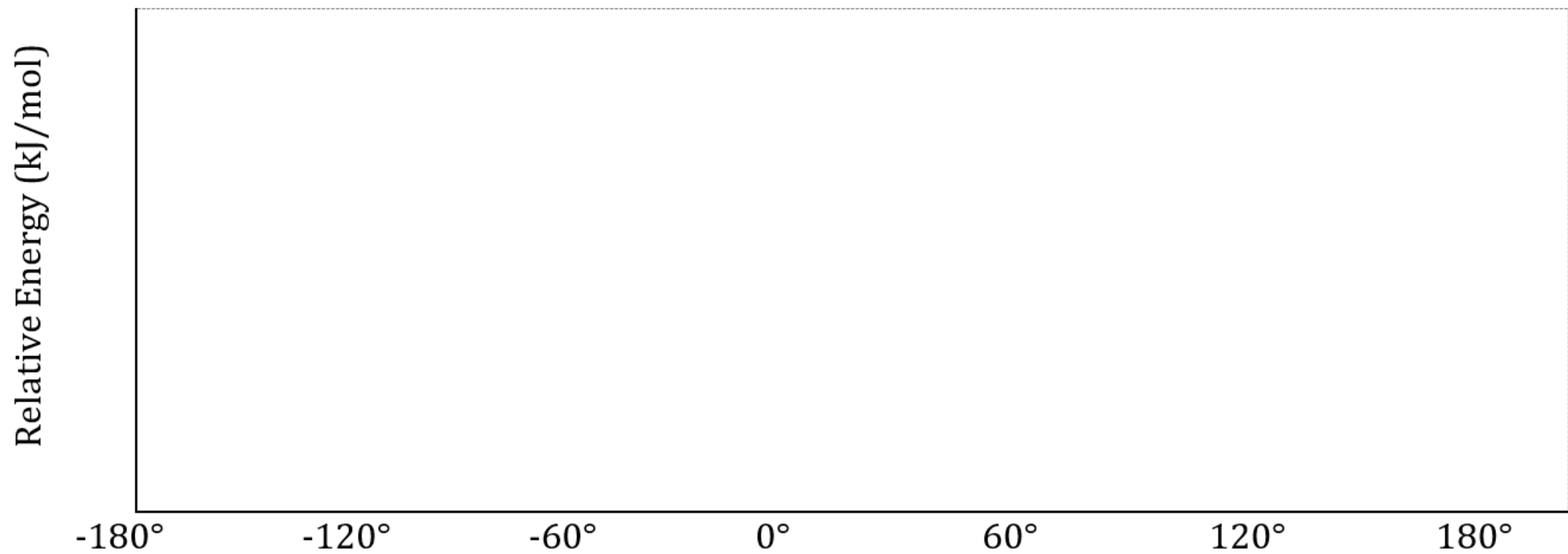
Torsional strain:



the lack of this orbital interaction causes torsional strain

Steric strain:

1,2-dibromoethane



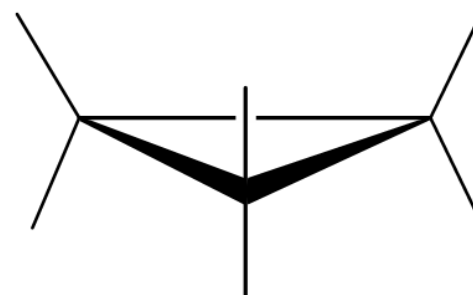
Be able to:

- Convert bond-line drawings to Newman projections & vice versa
- Identify the relative stability of conformations of a specified bond
(for exam - show all possible staggered and eclipsed conformations and rank their stability)
- Identify types of strain in a given conformation
- Draw/identify staggered vs eclipsed conformations
 - Classify staggered conformations as “anti” or “gauche”

Conformations of cycloalkanes and ring strain

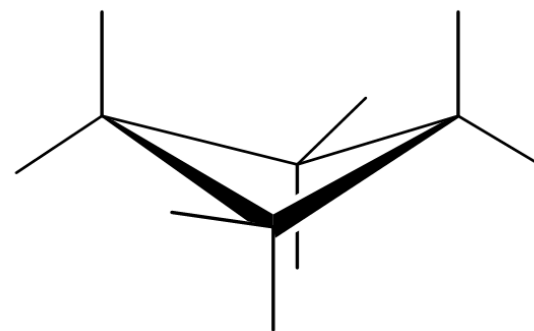
Cyclopropane

Planar ring



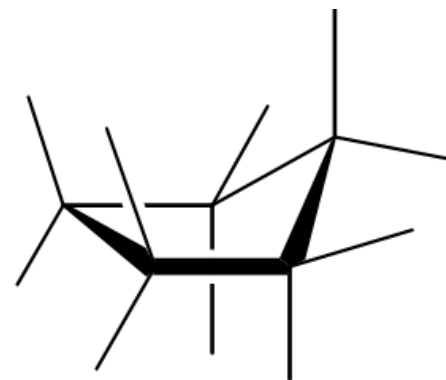
Cyclobutane

Puckered ring



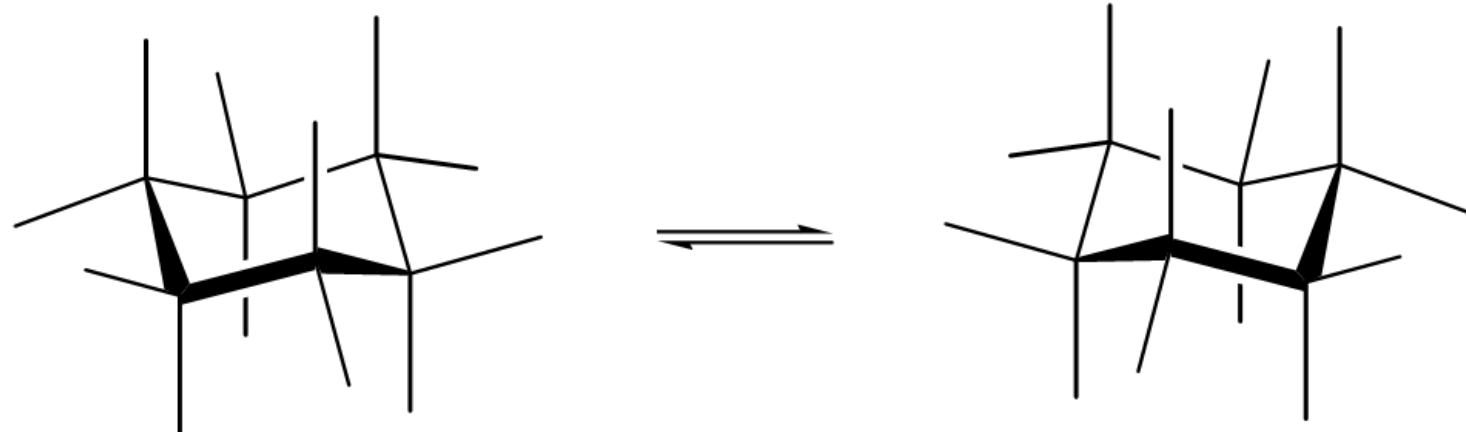
Cyclopentane

Puckered ring



Cyclohexane

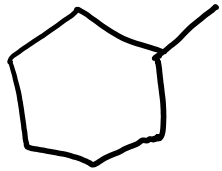
Ring folded in chair conformation



Drawing cyclohexane

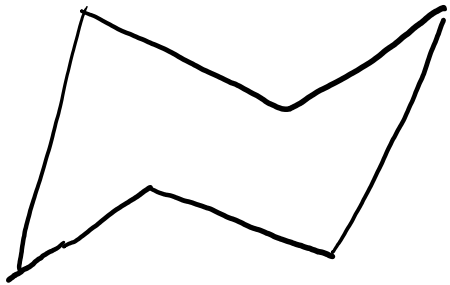
(textbook method is good too)

Monosubstituted cyclohexanes and drawing chair flips



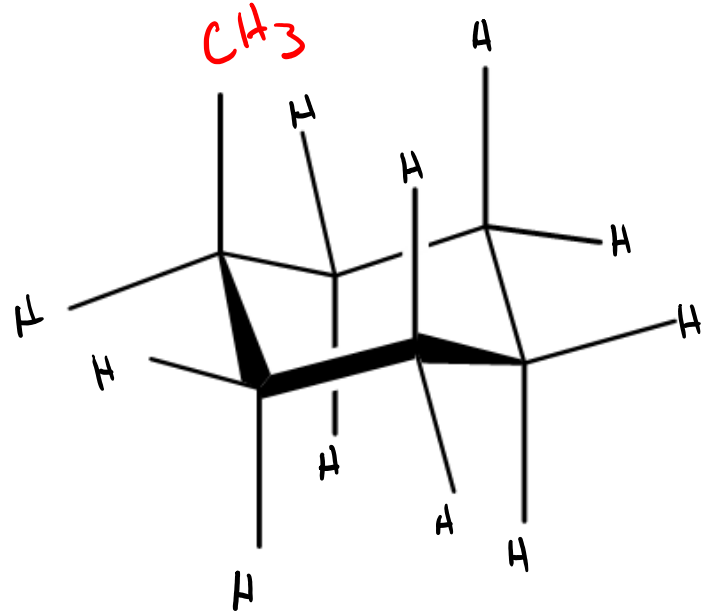
which chair conformation is more stable?

Draw both.

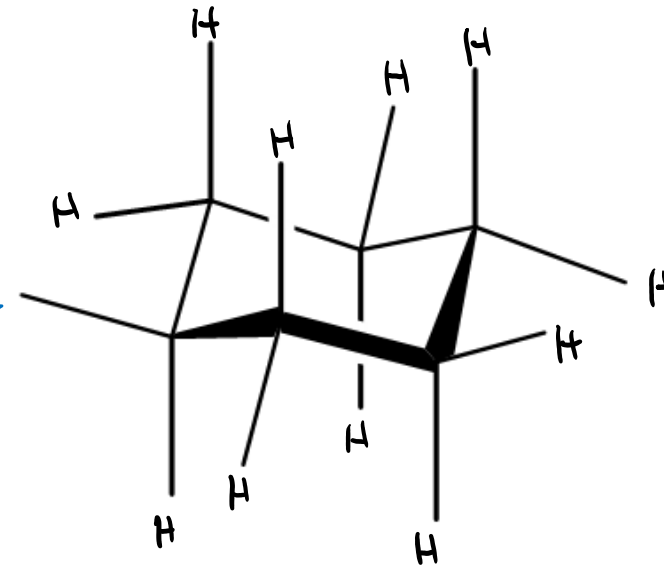


Cyclohexane Newman Projections

axial
CH₃



H₃C



equatorial CH₃

Disubstituted cyclohexanes – naming/drawing

Disubstituted cyclohexanes - stability

Disubstituted cyclohexanes - stability