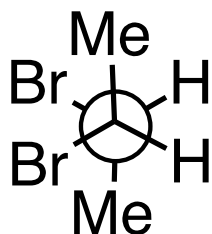
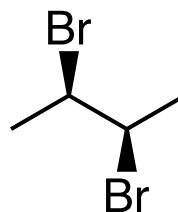


One of these things is not like the others...

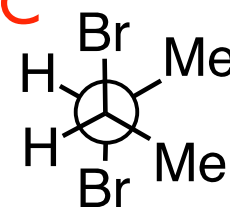
A



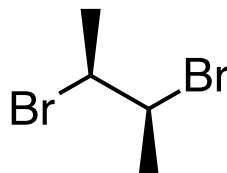
B



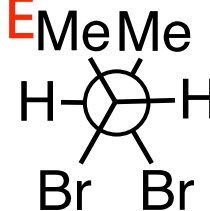
C



D



E



Build a model of cyclohexane. Replace a hydrogen with any other color.
Arrange your model into a chair conformer.
Move your model around and look at until you see the chair.
Draw what you see. Then flip the chair and draw the new version.

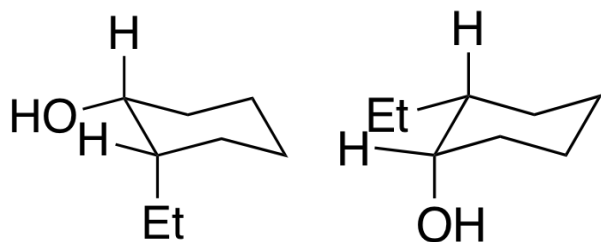
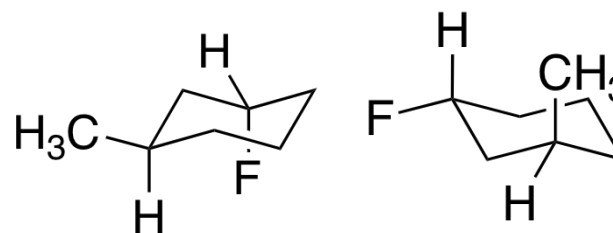
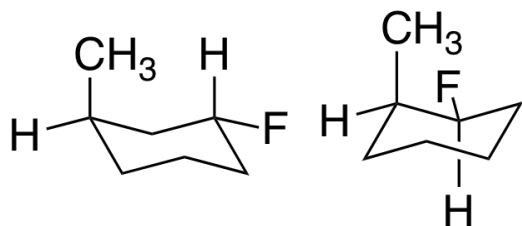
first chair

chair flip

Label all axial and equatorial positions on your drawings.
What happened to your non-hydrogen?

Work with a neighbor for this part!

Build models of each pair of structures shown below. How are they related?



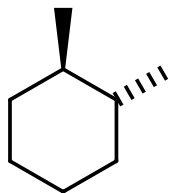
What happens when you change numbering direction?

What happens when you switch axial & equatorial?

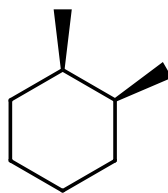
What happens when you switch up & down?

Choose the thermodynamically
least stable isomer.

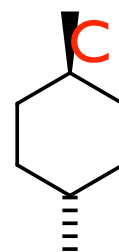
A



B



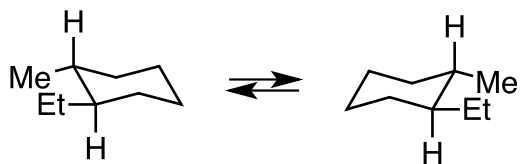
C



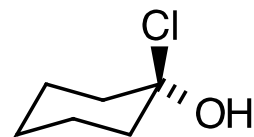
Explain!

Good, bad, or just ugly?

1.

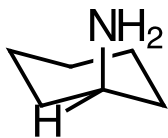


2.

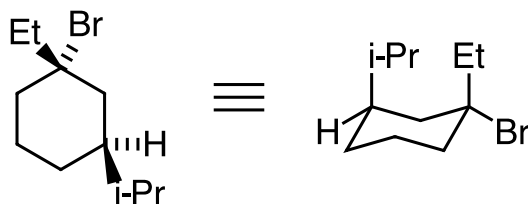


a. Good
b. Bad
c. Ugly

3.



4.



Practice Problems

Consider 1-bromo-2-methylpropane, and draw the following.

The staggered
conformation(s) of lowest
energy

The staggered
conformation(s) of highest
energy

Draw the 3-D representations for each Newman projection.

Practice Problems

Trans-1,4-di-*tert*-butylcyclohexane exists in a normal chair conformation. *Cis*-1,4-di-*tert*-butylcyclohexane, however, adopts a twist-boat conformation. Draw both isomers and explain why the *cis* isomer is more stable in a twist-boat conformation instead of a chair conformation.

Strain Types

- Give a 1-2 sentence definition and draw an example of each type of strain. Explain how torsional strain is different from steric strain.

angle strain:

torsional strain:

steric strain:

Strain Question

- Where do 1,3-diaxial interactions fit in with types of strain? Explain and give an example.

Challenge!

Draw the Newman projection looking down the C1-C2 bond!
(The hydroxyl group is on C1.)

