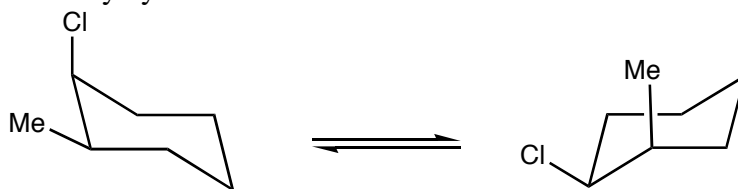
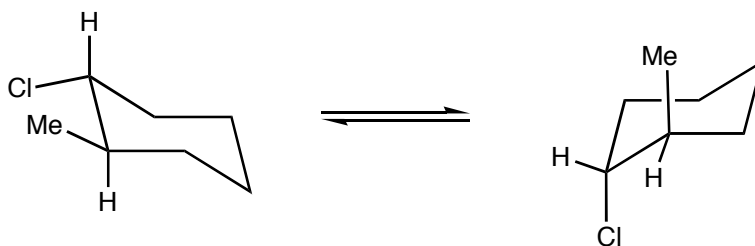


Additional Problems for practice:

1. Draw the two chair conformations of cis and trans-1-chloro-2-methylcyclohexane.



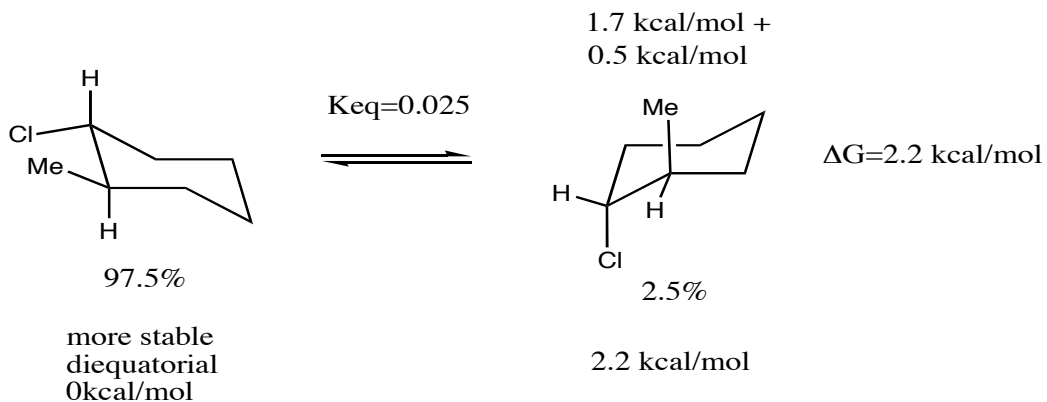
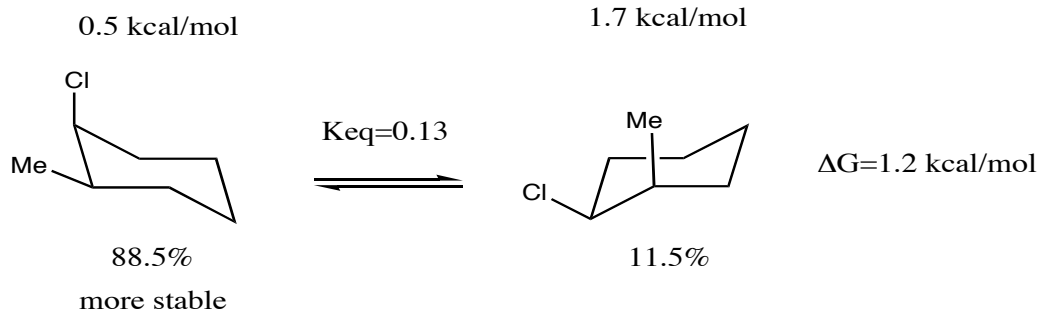
cis-1-chloro-2-methylcyclohexane



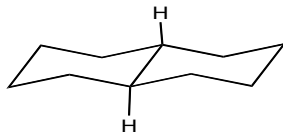
trans-1-chloro-2-methylcyclohexane

In each case, which is more stable? By how much (use table 3-6 in text)

$$\Delta G = -RT \ln K_{eq}$$

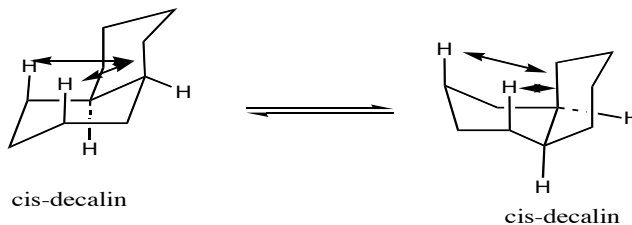


2. Which isomer is more stable, cis or trans decalin? Explain your answer in terms of the steric interactions of the two molecules.



No 1,3 diaxial interactions

trans-decalin (rigid)



cis-decalin

cis-decalin

extensive 1,3-diaxial interactions

Thus, trans-decalin is more stable than cis-decalin

3. Draw the following disubstituted cyclohexanes and label the substituents as axial or equatorial. The substituents can be any alkyl group of your choosing. Remember to include the ring-flip structure as well.
- 1,3 trans disubstituted
  - 1,3-cis disubstituted
  - 1,5-cis disubstituted
  - 1,4-cis disubstituted
  - 1,5-trans disubstituted
  - 1,6-trans disubstituted

