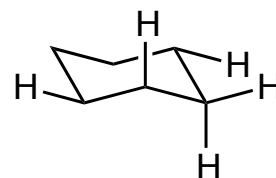
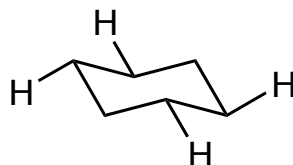
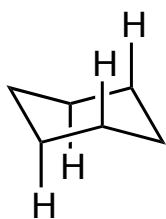
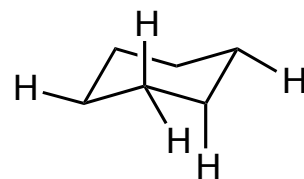
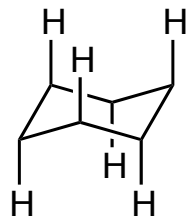
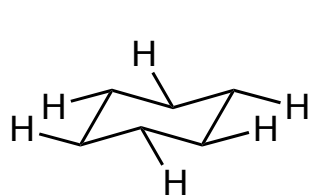


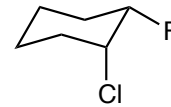
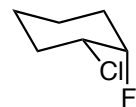
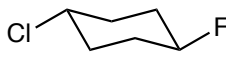
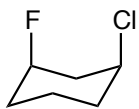
Practice 4: Conformations and Configurations of Cyclohexanes

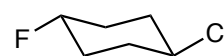
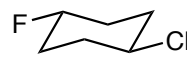
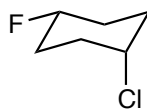
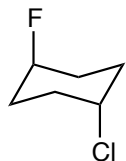
Ideally, these questions should be completed with the help of a model set so that you can begin connecting the 3D representation in space with the symbolic representation on paper.

1. Complete each cyclohexane chair conformation by drawing in the missing axial and/or equatorial hydrogen atoms.

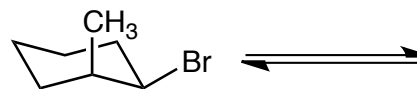
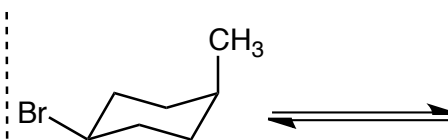
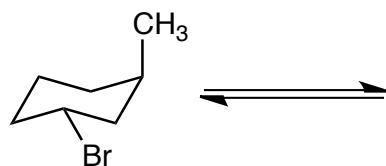
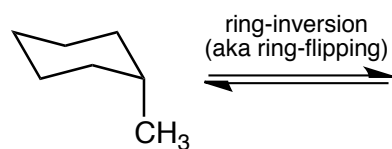


2. What is the relationship between the fluorine and chlorine in each molecule below, *cis* or *trans*?

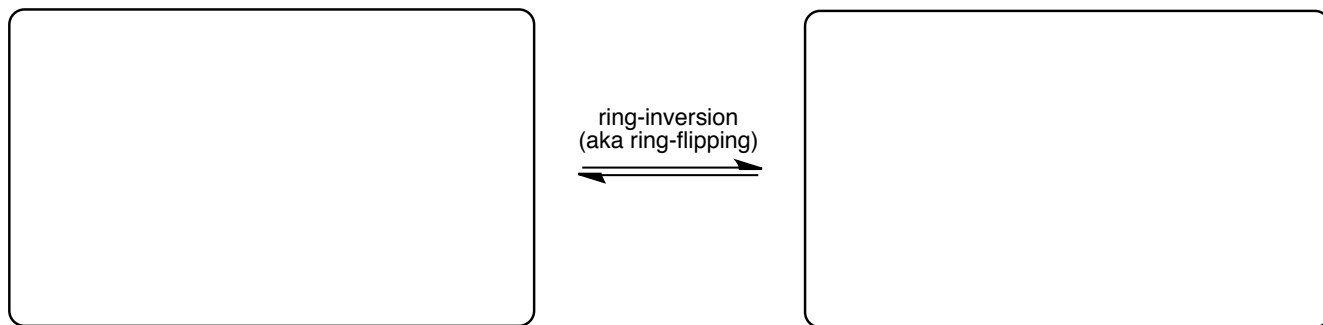




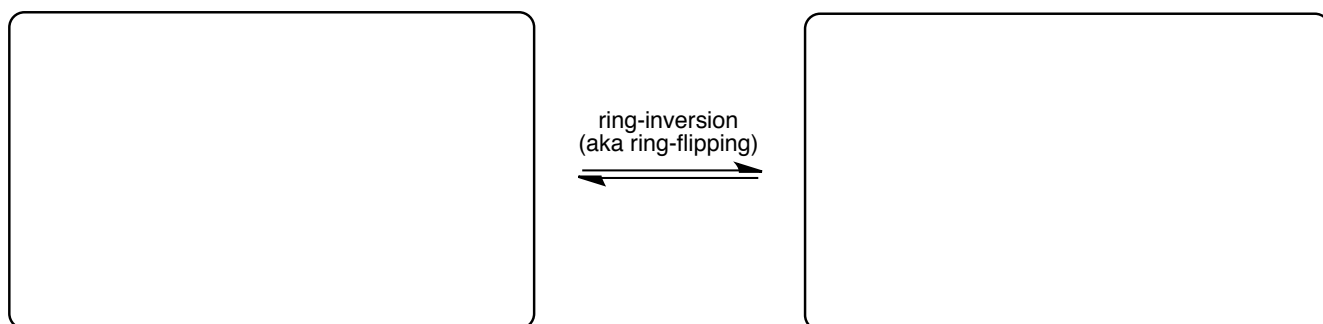
3. Draw the chair conformation obtained after ring-inversion of each compound below.



4. Draw the two chair conformations for cis-1,2-dimethylcyclohexane. Then, place a check mark next to the *most stable* conformation.



5. Draw the two chair conformations for trans-1,2-dimethylcyclohexane. Then, place a check mark next to the *most stable* conformation.



6. Which configuration is lower in potential energy, cis- or trans-1,2-dimethylcyclohexane? Explain your answer by comparing the conformations with check marks in #4 and #5.

7. **First**, label each configuration below as cis or trans. **Second**, draw the most stable chair conformation for each partial 3D representation shown below.

