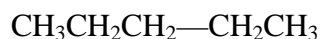


**Chemistry 251**  
**Worksheet 3**

Name: \_\_\_\_\_

A. (2.0 pts.) Draw the Newman projections and the energy diagram for a complete rotation about the indicated bond in the molecule.



B. (2.0 pts.) Draw the structure for each of the following compounds.

1. trans-1,3-dimethylcyclohexane.
2. 1-chloro-cis-2-methyl-cis-4-methylcyclohexane.
3. cis-1,3-dibromocyclopentane.
4. trans-1-t-butyl-4-methylcyclohexane.

C. (1.0 pts.) Draw the structure for the preferred conformation of the following compounds.

1. 1-isopropyl-1-methylcyclohexane.
2. trans-1-t-butyl-3-chlorocyclohexane.

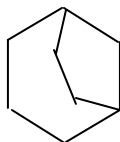
D. (2.0 pts.) Draw the equilibrating chair structures for the following compounds and indicate the more stable structure (if any) within each pair of structures.

1. trans-1,4-dimethylcyclohexane.
2. cis-1,3-dimethylcyclohexane.

E. (1.0 pts.) Give the correct name or structure for each of the following.

1. bicyclo[4, 4, 0]decane.

2.



F. (2.0 pts.) For the molecule, 1-ethyl-2-methylcyclohexane, draw the stereoisomers and for each stereoisomer the conformers. Indicate the more stable conformer in each pair and the more stable of each stereoisomer.