Chem 51A
Quiz 2 (10 points; 10 minutes)
October 17, 2005

Note: All quizzes will be photocopied prior to being returned. In the event of a grading error, please submit the original quiz along with a note explaining the grading error. Do not mark on or alter the quiz in any way. Any marks or alteration may be taken as evidence of academic dishonesty and may result in a failing grade in the class and a letter in the student's file.

1. Consider the diequatorial and diaxial ring-flip conformers of cis-1,3-dimethylcyclohexane. (5 points)
   a. Make conformationally realistic drawings of these two conformers.

   ![Conformers](image)

   b. Make molecular models of these two conformers using your Darling (Molecular Visions) Molecular Models. Use a ruler to measure the distance between the carbon atoms of the methyl groups in each of the two models.

   What is the distance between the methyl groups of the diaxial conformer model, in centimeters? 12.5

   What is the distance between the methyl groups of the diequatorial conformer model, in centimeters? 2.5

   c. The Darling (Molecular Visions) Molecular Models are constructed on a scale of 5.08 cm to the angstrom. What is the distance between the methyl groups of the diaxial conformer, in angstroms? 2.5 Å

2. Write the structural formula for each of the following compounds (Bruice, Problem 1.40agikl, 5 points):

   - sec-butyl tert-butyl ether
   - triethylamine
   - 5,5-dibromo-2-methyloctane
   - 1-methylcyclopentanol
   - 3-ethoxy-2-methylhexane