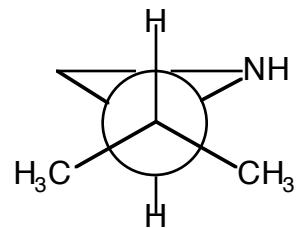
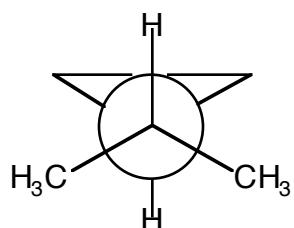
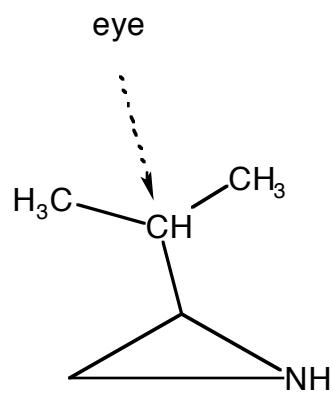
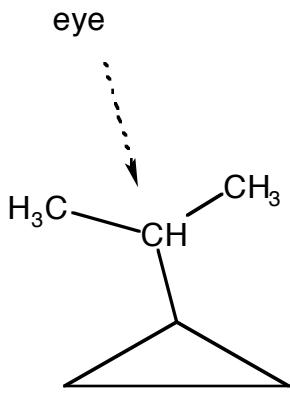


Answers to Problem 48, Chemistry 301X - 2006

Those methyl groups in **2** can never be the same. Here are the Newman projections:



No matter how you rotate the molecule, the methyl groups remain different in **2**. They are “diastereotopic” methyl groups, and must give different signals in the NMR spectrum.