1. (5 pts) Draw the two chair conformers for cis-1,3-dimethylcyclohexane. Take extreme care with how your lines are drawn! Identify which conformer is most stable by drawing equilibrium arrows.

![Cyclohexane chair conformers](image)

2. (1 pts) Infrared spectroscopy is based on __________ excitation.
   - electronic
   - vibrational
   - nuclear
   - rotational