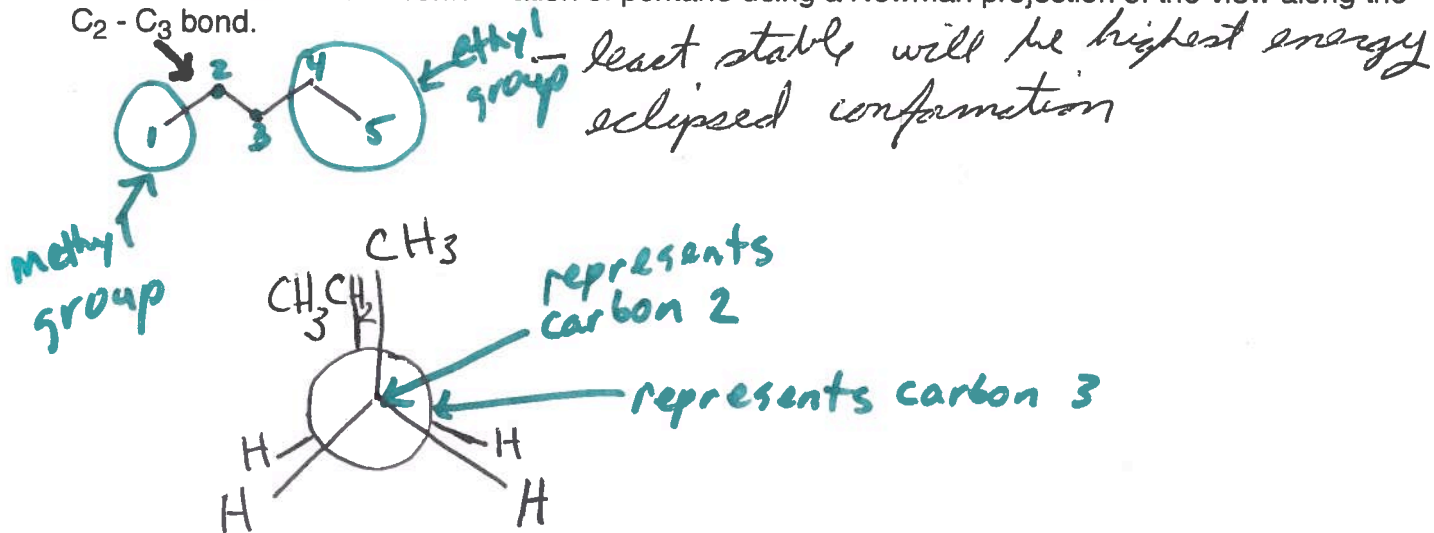
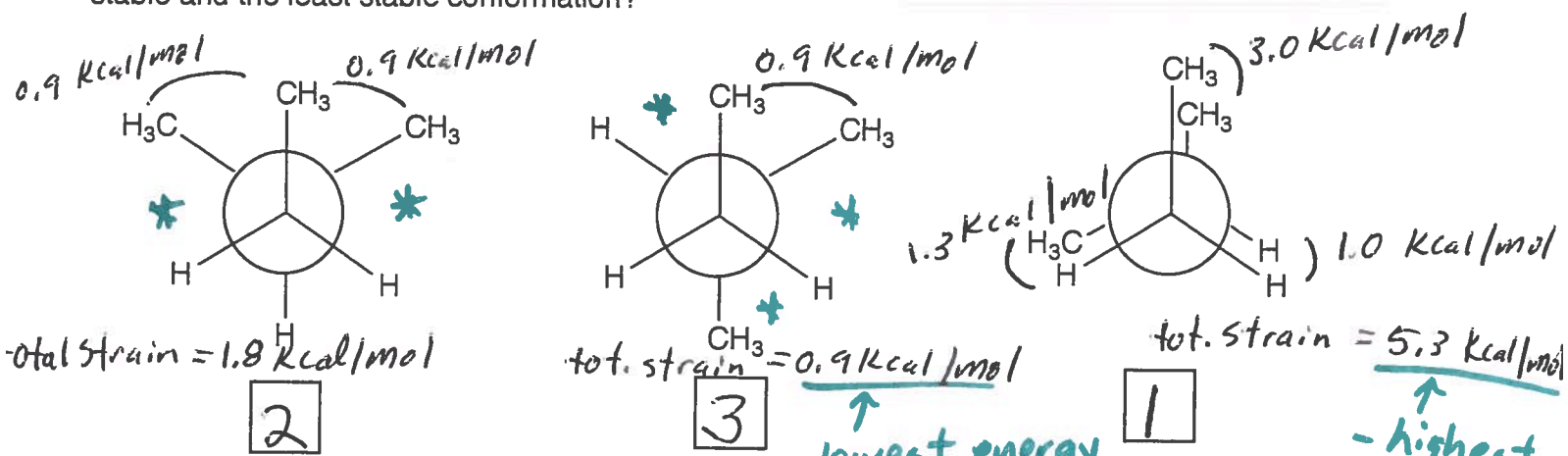


1. Draw the least stable conformation of pentane using a Newman projection of the view along the C₂ - C₃ bond.



- least stable because largest groups are eclipsed

2. Using the table of strain energies below, arrange the conformations of 2-methylbutane in order of increasing stability (1=least stable, 3=most stable). What is the difference in energy between the most stable and the least stable conformation?



- lowest energy
- most stable

- highest energy
- least stable

Strain energies:
 H-H eclipsing = 1 kcal/mol
 CH₃ - H eclipsing = 1.3 kcal/mol
 CH₃ - CH₃ eclipsing = 3.0 kcal/mol
 CH₃ - CH₃ gauche = 0.9 kcal/mol

5.3 Kcal/mol
 - 0.9

4.4 Kcal/mol difference in energy between most and least stable.

* There is NO CH₃-H gauche interaction