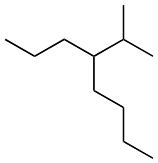
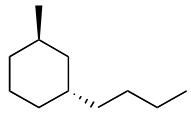
CHE 171
Fall, 2005
Quiz 3

Name_____
Section: **101** **102** **103**
M W F
(circle one)

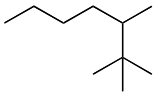
1. Give the IUPAC name for each of the following compounds. (10 pts)

(a) 

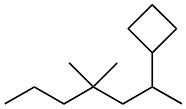
4-isopropyloctane or 4-(1-methylethyl)octane

(b) 

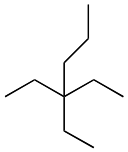
trans-1-butyl-3-methylcyclohexane

(c) 

2,2,3-trimethylheptane

(d) 

2-cyclobutyl-4,4-dimethylheptane

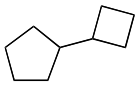
(e) 

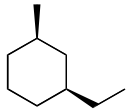
3,3-diethylhexane

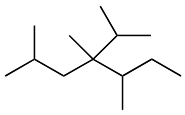
2. Which has the highest boiling point, propane, butane, or hexane? Explain. (10 pts)

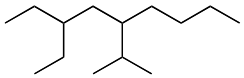
Hexane has the highest boiling point. Hexane is the longest of the three straight-chain alkanes. It has the most surface area, and the most intermolecular van der Waals interactions, and thus the highest boiling point.

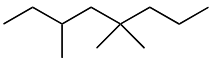
3. Draw the structure corresponding to each of the following IUPAC names. (10 pts)

(a) 

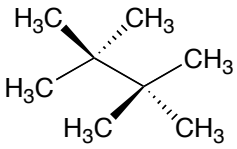
(b) 

(c) 

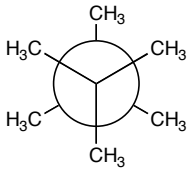
(d) 

(e) 

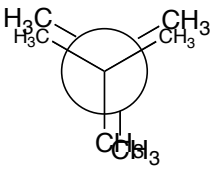
4. Sighting down the C2-C3 bond of 2,2,3,3-tetramethylbutane, show:



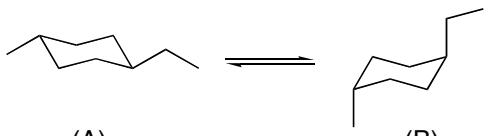
(a) A Newman projection for the lowest energy conformation (5 pts)



(b) A Newman projection for the highest energy conformation (5 pts)



5. Draw two chair conformations for *trans*-1-methyl-4-ethylcyclohexane. Which conformer, if either, is more stable? Explain. (10 pts)



(A) (B)

Conformer (A) is more stable because the two substituents are in the equatorial position, which minimizes 1,3-diaxial interactions.