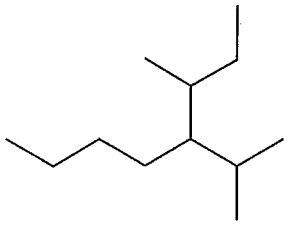
Chem 51A
SS 14

Quiz 3

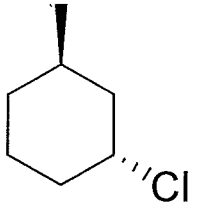
1. Write the name of the compound below in the box provided. Spelling counts!



No partial

(1) 4-isopropyl-3-methyloctane

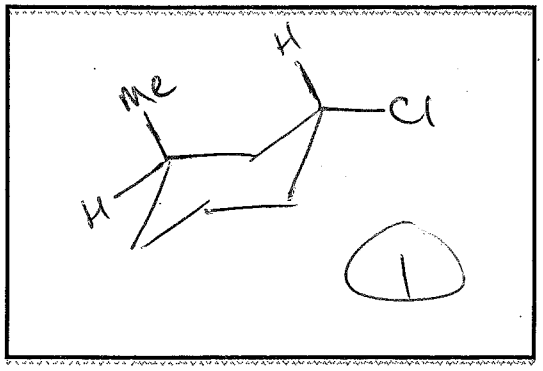
2. Use the following compound to complete these tasks.



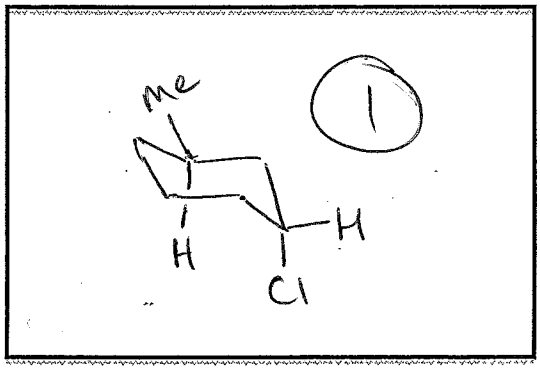
(a) Write the name of the compound in the box provided. (Hint: a Cl substituent is called "chloro" and takes higher priority in numbering than alkyl groups. All the other usual naming rules apply.)

(0.5) trans-1-chloro-3-methyl cyclohexane

(b) Draw both chair conformers in the boxes provided.



(1)



(1)

Chair A **Chair B**

(0.5)

(c) Identify the higher energy conformer (A or B): A

(d) Explain your choice in 1-2 sentences.

(1) Methyl is bigger than chloro so the chair with the equitorial methyl is lower energy.

Chem 51A
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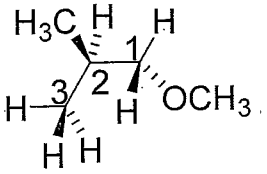
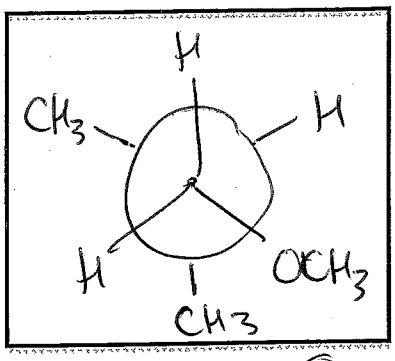
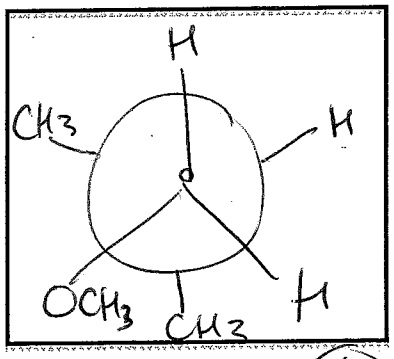
3. Use the following compound to complete these tasks.



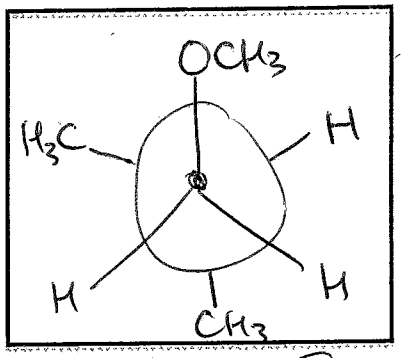
(a) In the boxes provided, draw all three **staggered** Newman projections. Draw your Newman projection looking down the C1-C2 bond, placing C1 in front.



Newman 1 (1)



Newman 2 (1)



Newman 3 (1)

(b) Rank your Newman projections from highest to lowest energy.

(0.5) 2 > 3 = 1

↖ No partial

(c) Explain your ranking in 1-2 sentences.

(1) Structure 2 has two gauche interactions, while ~~each~~ both 3 and 1 have only one gauche interaction.

(d) Convert the highest energy Newman projection to a skeletal/3-D structure.

(0.5)