

## Organic Chemistry I, CHM 3140

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### Chapter 4 Alkanes & Cycloalkanes, Part 1 – [Practice Problems](#)

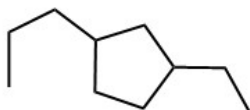
*Many of these problems are from the Ch. 4 skeleton notes.*

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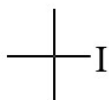
Which is the correct IUPAC name for the given compound?

1

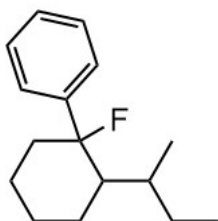


Provide both a common name and an IUPAC name for the given compound.

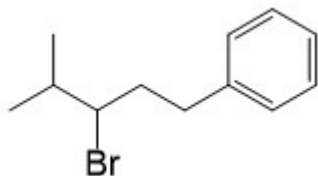
2



3



4



5

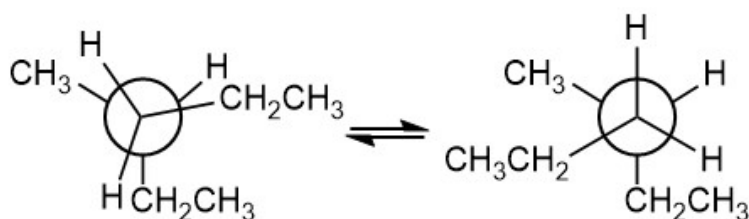
Draw **2-isobutylhexane** and then rename the compound (assign the correct IUPAC name to the drawing).

6

Draw all the isomers of  $C_4H_9Cl$ .

7

- 1) Provide the **IUPAC name** of the compound below (it may help to redraw it).
- 2) Determine the **direction** of the equilibrium. Explain.
- 3) Draw the **lowest** and **highest energy** conformations of this compound.



*lowest Energy:*

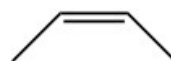
*highest Energy:*

8

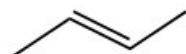
### Cis-Trans Isomerism in Cycloalkanes (4.14)

*cis* means two groups are on the same side

*trans* means two groups are on opposite sides



*cis* alkene



*trans* alkene



*trans*-1,3-dimethyl-  
cyclopentane

*cis*-1,3-dimethyl-  
cyclopentane