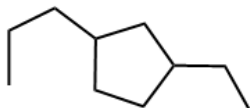


Library of Organic Chemistry Active Learning Resources LOCAL
Chapter 4 Alkanes & Cycloalkanes - Part 1



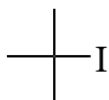
Which is the correct IUPAC name for the given compound?

1

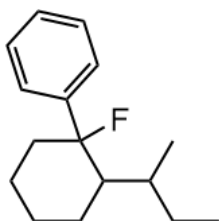


Provide both a common name and an IUPAC name for the given compound.

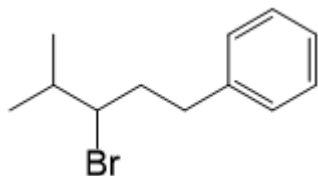
2



3



4

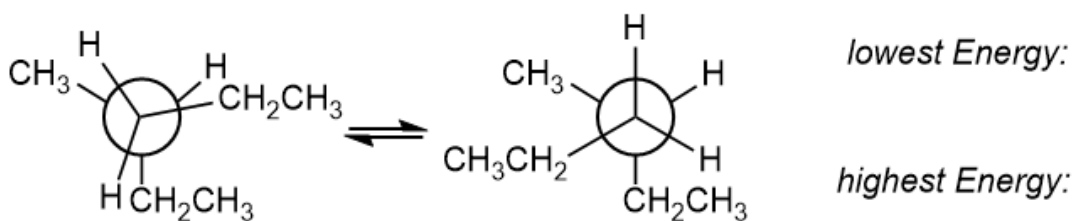


5

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 .

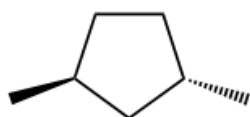
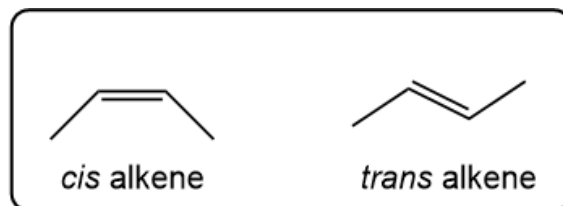
- 7
- 1) Provide the **IUPAC name** of the compound below (it may help to redraw it).
 - 2) Determine the **direction** of the equilibrium. Explain.
 - 3) Draw the **lowest** and **highest energy** conformations of this compound.



8

Cis-Trans Isomerism in Cycloalkanes (4.14)

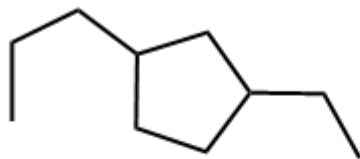
cis means two groups are on the same side
trans means two groups are on opposite sides



trans-1,3-dimethyl-
cyclopentane

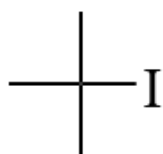
cis-1,3-dimethyl-
cyclopentane

1 Which is the correct IUPAC name for the given compound?



- A) 3-ethylcyclooctane
- B) 4-propylcyclooctane
- C) 3,5-pentylcyclooctane
- D) 1-ethyl-3-propylcyclopentane
- E) 3-ethyl-1-propylcyclopentane

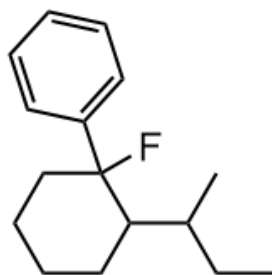
2 Provide both a common name and an IUPAC name for the given compound.



- | | |
|------------------------------|---------------------------------|
| A) <i>sec</i> -butyl iodide | A) 1-iodo-1,1-dimethylethane |
| B) <i>tert</i> -butyl iodide | B) 2-iodo-2,2-dimethylpropane |
| C) isobutyl iodide | C) 2-iodo-2-methylpropane |
| D) isopropyl iodide | D) 1-iodo-1,1,1-trimethylethane |
| E) <i>n</i> -propyl iodide | E) iodotrimethylmethane |

3

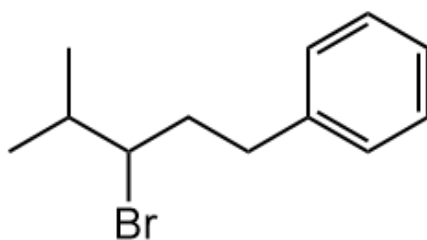
Which is the correct IUPAC name for the given compound?



- A) 1-fluoro-2-(1-methylpropyl)-1-phenylcyclohexane
- B) 2-benzyl-1-fluoro-2-(1-methylpropyl)cyclohexane
- C) 2-(2-butyl)-1-fluoro-2-phenylcyclohexane
- D) 2-benzyl-2-(2-butyl)-1-fluorocyclohexane
- E) none of the above

4

Which is the correct IUPAC name for the given compound?



- A) 3-bromo-2-methyl-5-phenylpentane
- B) 3-bromo-4-methyl-1-phenylpentane
- C) 2-bromo-1,1-dimethyl-5-phenylpentane
- D) 3-bromo-2-methyl-6-phenylhexane
- E) 4-bromo-5-methyl-1-phenylhexane

5

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

A) 3-(2-methylpropyl)hexane

B) 3-ethyl-2,2-dimethylhexane

C) 4-ethyl-2-methylheptane

D) 4-ethyloctane

E) 2,4-dimethyloctane

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.

