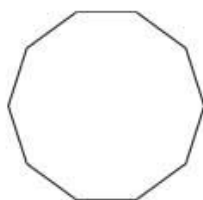


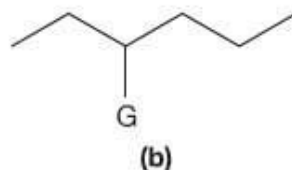
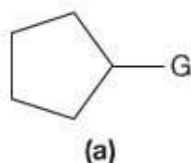
Nomenclature 1 – Introduction: The Basic System for Naming Organic Compounds

problem N1.1 Draw the structure of cyclononane. (*Hint:* Consult Table N1-1.)

problem N1.2 What is the name of the following cycloalkane? (*Hint:* Consult Table N1-1.)



problem N1.3 How would you describe each of the following molecules, where G is a generic substituent?



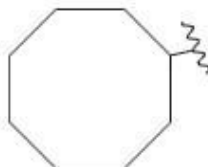
a)

b)

problem N1.4 Using G as a generic substituent, draw (a) a substituted cyclobutane and (b) a substituted heptane.

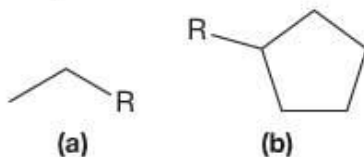
problem N1.5

(a) What is the name of the following alkyl substituent? (*Hint:* See Table N1-2.)



(b) Draw the structure of a cycloheptyl substituent.

problem N1.6 How would you describe each of the following molecules?

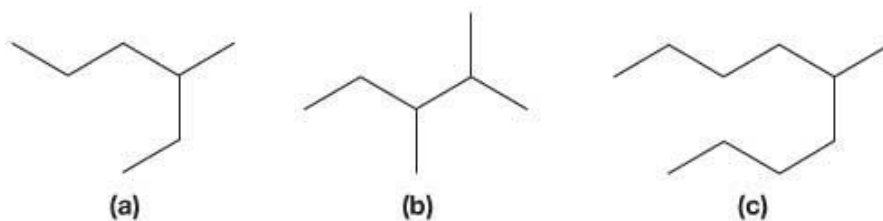


a)

b)

problem N1.7 Draw the structures of (a) a generic alkyl-substituted pentane and (b) a generic alkyl-substituted cyclopropane.

problem N1.8 For each of the molecules below, how many carbons are in the longest continuous chain? What is the root for each molecule?

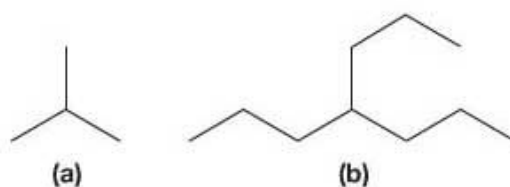


a)

b)

c)

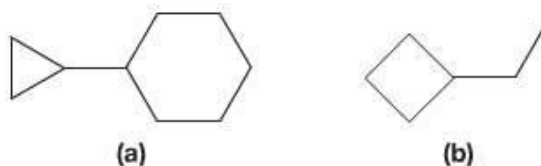
problem N1.9 What is the IUPAC name for each of the following alkanes?



a)

b)

problem N1.10 Name the following molecules.

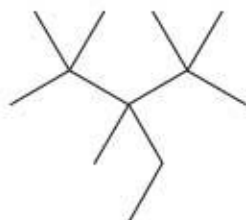


a)

b)

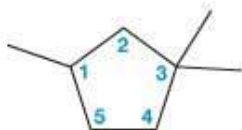
problem N1.11 Draw the structures for (a) cyclobutylcyclohexane and (b) pentylcycloheptane.

problem N1.12 What is the IUPAC name for the following compound?

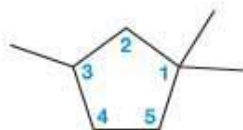


problem N1.13 Draw the structures of (a) hexamethylcyclopropane and (b) cyclobutylcyclopentylmethane.

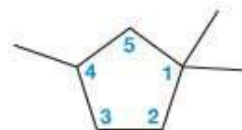
problem N1.14 What is the correct IUPAC name for the following trimethylcyclopentane molecule, shown with three different numbering systems?



1,3,3-Trimethylcyclopentane



1,1,3-Trimethylcyclopentane



1,1,4-Trimethylcyclopentane

problem N1.15 What is the IUPAC name for each of the following molecules?



(a)

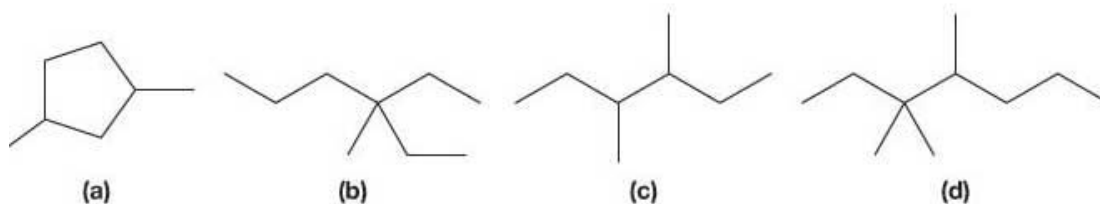
a)



(b)

b)

problem N1.16 What is the IUPAC name of each of the following molecules?



a)

b)

c)

d)

problem N1.17 Draw each of the following generic alkyl-substituted molecules.

(a) A 3,3-dialkylpentane

(b) A 1,2,3,4-tetraalkylcyclopentane

problem N1.18 Given each of the IUPAC names provided, draw the corresponding structure.

(a) 2-Methylhexane

(b) 3-Methylhexane

(c) 2,3-Dimethylbutane

(d) 1,1-Dimethylcyclohexane

(e) 2,2,3-Trimethylbutane

(f) 2,2,4-Trimethylpentane

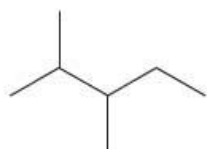
(g) 3-Ethyl-2,3-dimethylpentane

(h) 1,2-Dimethylcyclohexane

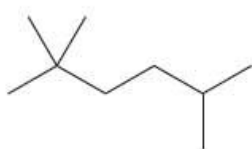
(i) 1,2,3-Trimethylcyclobutane

(j) 2,2,3,3-Tetramethylhexane

problem N1.19 Given each of the structures provided, write the corresponding IUPAC name.



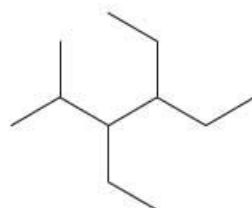
(a)



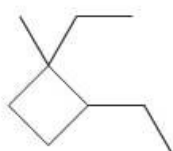
(b)



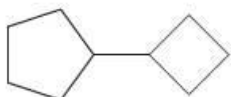
(c)



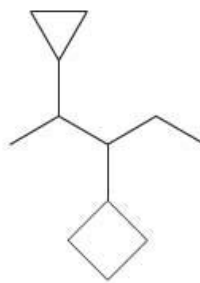
(d)



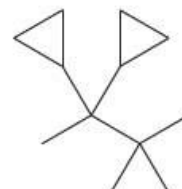
(e)



(f)



(g)



(h)

a)

b)

c)

d)

e)

f)

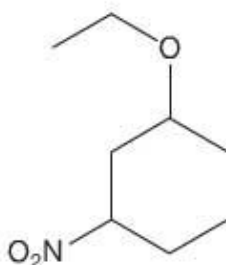
g)

h)

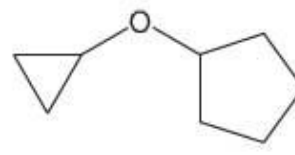
problem N1.29 What is the IUPAC name for each of the following ethers?



(a)



(b)



(c)

a)

b)

c)