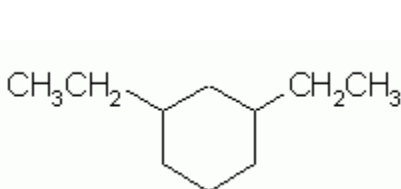
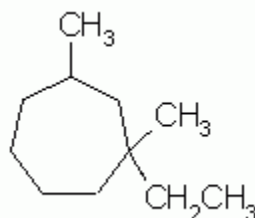


Home Work No 1	Organic Chemistry
Date: 01/10/2011	ANSWERS Dr. Ramy Y. Morjan
Student Name:	Student ID:

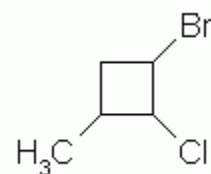
1) Please give the IUBAC names for the following simple hydrocarbons



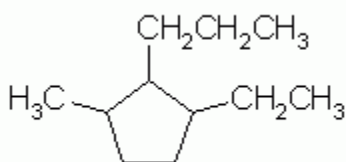
1,3-diethylcyclohexane



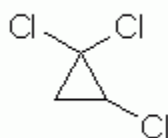
1-ethyl-1,3-dimethylcycloheptane



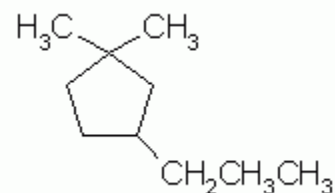
1-bromo-2-chloro-3-methylcyclobutane



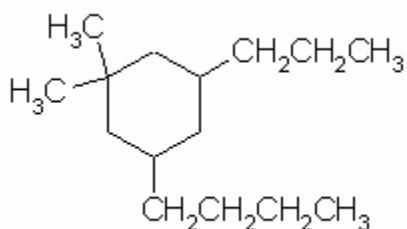
1-ethyl-3-methyl-2-propylcyclopentane



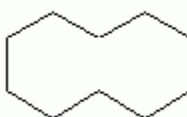
1,1,2-trichlorocyclopropane



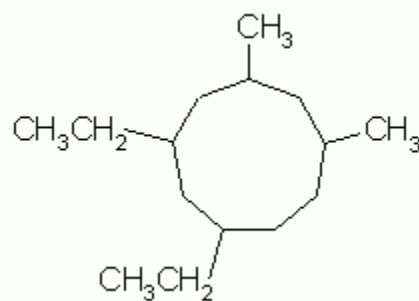
1,1-dimethyl-3-propylcyclopentane



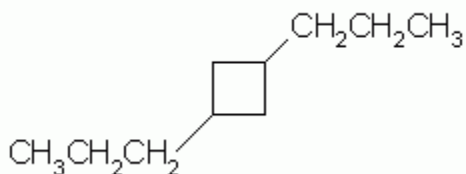
3-butyl-1,1-dimethyl-5-propylcyclohexane



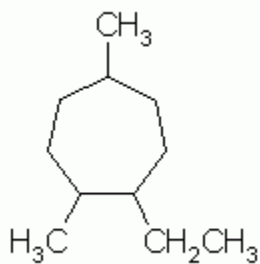
cyclodecane



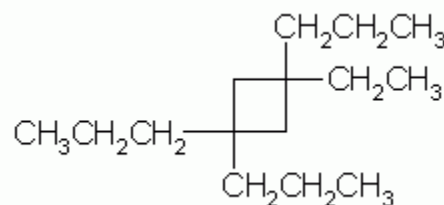
1,3-diethyl-6,8-dimethylcyclononane



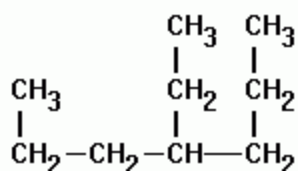
1,2-dipropylcyclobutane



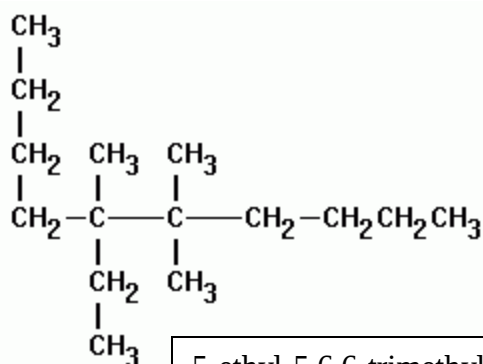
1,4-dimethyl-5-ethylcycloheptane



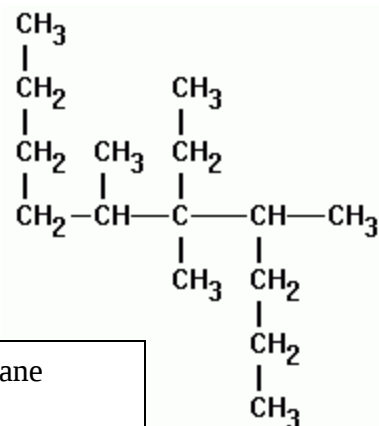
1-ethyl-2,3,3-tripropylcyclobutane



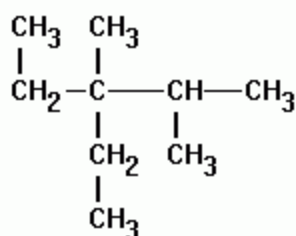
4-ethylheptane



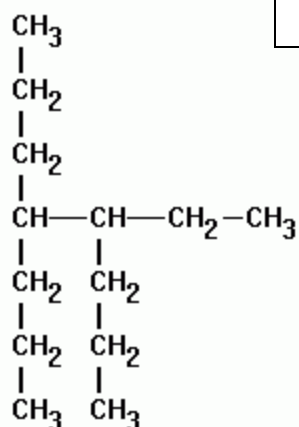
5-ethyl-5,6,6-trimethyldecane



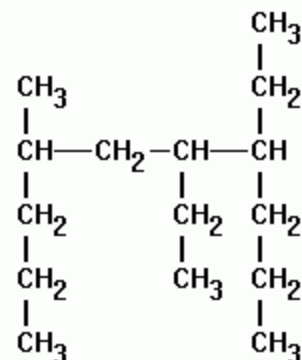
5-ethyl-4,5,6-trimethyl decane



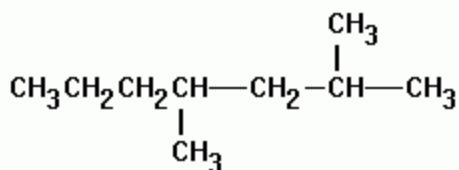
3-ethyl-2,3-dimethylpentane
OR
3-methyl-3-isopropylpentane



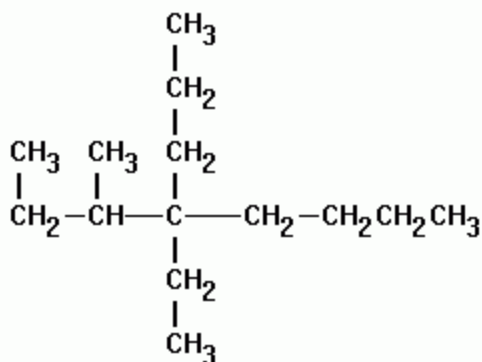
4-ethyl-5-propyloctane



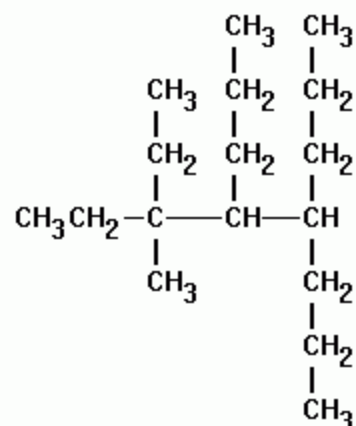
4,5-diethyl-7-methyldecane



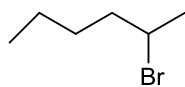
2,4-dimethylheptane



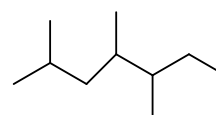
4-ethyl-3-methyl-4-propyloctane



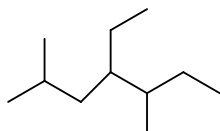
3-ethyl-3-methyl-4,5-dipropyloctane



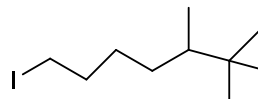
2-bromohexane



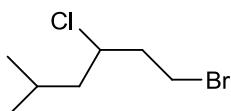
2,4,5-trimethylheptane



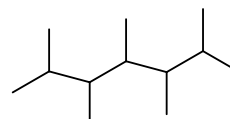
4-ethyl-2,5-dimethylheptane



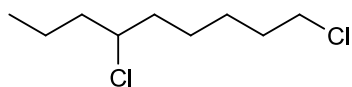
1-iodo-5,6,6-trimethylheptane



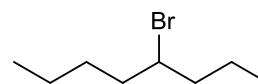
1-bromo-3-chloro-5-methylhexane



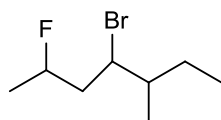
2,3,4,5,6-pentamethylheptane



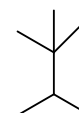
1,6-dichlorononane



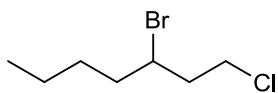
4-bromooctane



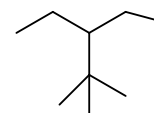
4-bromo-2-fluoro-5-methylheptane



2,2,3-trimethylbutane

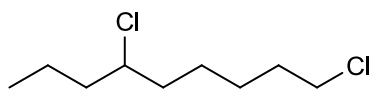


3-bromo-1-chloroheptane

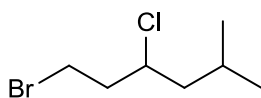


3-ethyl-2,2-dimethylpentane

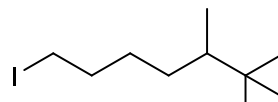
2) Please draw the chemical structure for the following compounds



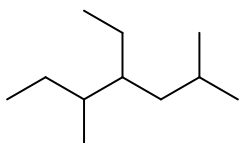
1,6-dichlorononane



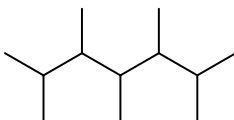
1-bromo-3-chloro-5-methylhexane



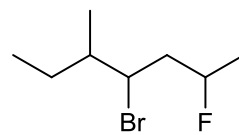
1-iodo-5,6,6-trimethylheptane



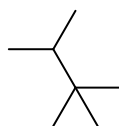
4-ethyl-2,5-dimethylheptane



2,3,4,5,6-pentamethylheptane

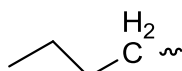


4-bromo-2-fluoro-5-methylheptane



2,2,3-trimethylbutane

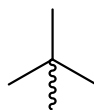
3) Compounds that have the same molecular formula but different chemical structures are called isomers. On the light of your understanding; draw all the possible isomer structures of C_4H_9 and give the IUPAC name for each isomer.



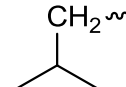
Butyl



sec.butyl

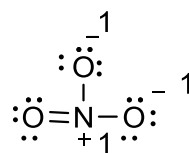
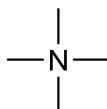
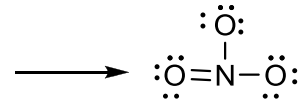
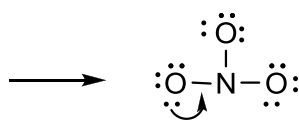
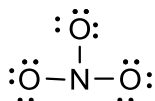
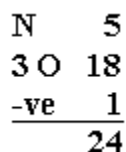


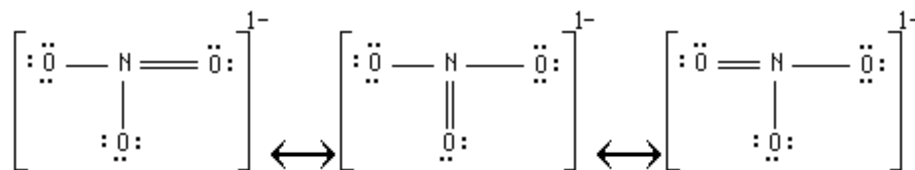
tert.butyl



iso-butyl

4) What is the formal charge on each atom on NO_3^- ? What is the different resonance structures? (Please; draw the structures)





5) What is the formal charge on each atom on NH_3 and NH_2^- and NH_4^+ ?

NH_3 is neutral so the formal charges are zero for each element

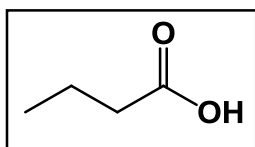
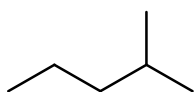
For NH_4^+ The central N atom: This atom has 5 valence electrons, zero nonbonding electrons, and 8 bonding electrons.

Formal charge = $5 - 0 - 1/2 \times 8 = +1$

Terminal H atoms: All these atoms are equivalent. The H atom has 1 valence electron, zero nonbonding electrons, and 2 bonding electrons. Then,

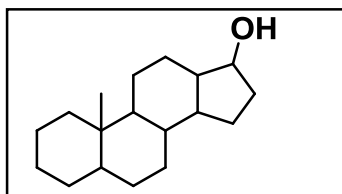
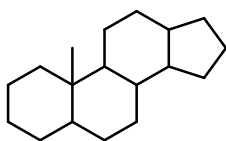
Formal charge = $1 - 0 - 1/2 \times 2 = 0$

6) Which of the following compounds do you expect to be water soluble?



It can form hydrogen bond with H_2O

7) Which of the following compounds has higher boiling point? Why?



It has OH group so it can form hydrogen bonds with other molecules so it has higher B.P.

8) What are the functional groups on the following Compounds?

