

1. Draw the structure (skeletal) for each of the following compounds.

a. 3-ethyloctane

b. 4-isopropyl-2-decanol

c. *sec*-butylcycloheptane

d. 1,2-dimethylcyclopentane

e. 3-chloro-2-methylpentane

f. *N*-methyl-1-ethanamine

g. *N,N*-diethyl-1-propanamine

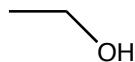
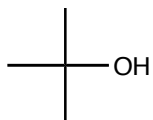
h. 4-(1-bromoethyl)decane

2. List the following alcohols in order of decreasing solubility in water.

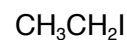
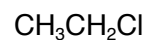
octanol, methanol, ethanol, 2-methyl-2-butanol

3. For each pair of molecules circle the molecule with the higher boiling point.

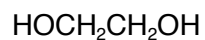
a.



b.

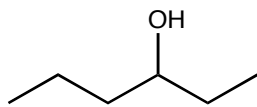


c.



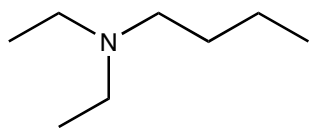
4. Provide IUPAC names for the following molecules.

a. \_\_\_\_\_



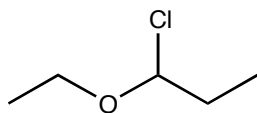
1°, 2°, or 3° alcohol

c. \_\_\_\_\_

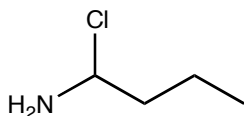


1°, 2°, or 3° amine

e. \_\_\_\_\_

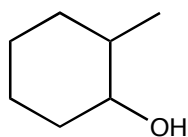


g. \_\_\_\_\_



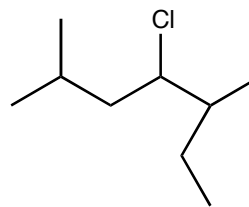
1°, 2°, or 3° amine

i. \_\_\_\_\_



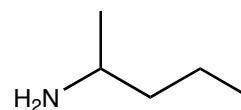
1°, 2°, or 3° alcohol

b. \_\_\_\_\_

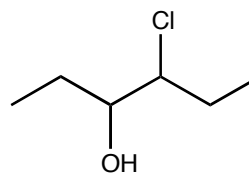


circle all tertiary carbon atoms

d. \_\_\_\_\_



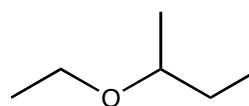
f. \_\_\_\_\_



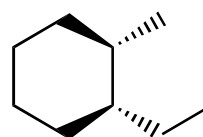
1°, 2°, or 3° alcohol

1°, 2°, or 3° halide

h. \_\_\_\_\_



i. \_\_\_\_\_



don't forget, *cis* or *trans*

6. Draw a Newman projection that best shows the lowest energy conformation of butane.

7. Draw a Newman projection that best shows the highest energy conformation of butane

8. Use perspective drawings to show the lowest energy conformations of the following molecules

*cis*-1,2-dimethylcyclohexane

*cis*-1-ethyl-3-methylcyclohexane

*trans*-1,4-dichlorocyclohexane

*trans*-1-methyl-2-ethylcyclohexane