Organic Chemistry I, CHM 3140
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Chapter 1 General Chemistry Review, Part 1 – Practice Problems

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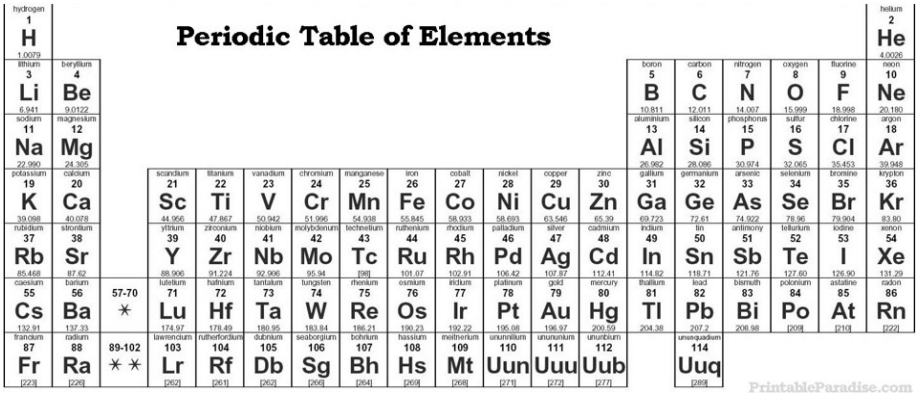
1 What is the **second-most** electronegative element?



2 For each pair of atoms, describe the type of bond that is expected to form between them.

LiBr | CH | NH

3 For each element below, attach as many H atoms as necessary to give a stable, neutral molecule.

C

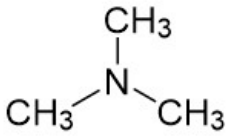
N

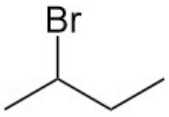
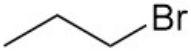
O

Br

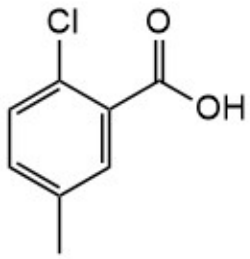
4 Which of the following represents a pair of constitutional isomers?

I. H_2O and H_3O^+

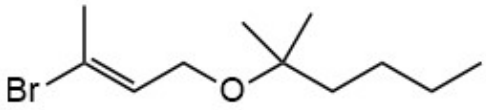
II.  and $CH_3CH_2CH_2NH_2$

III.  and 

5 How many carbon atoms and hydrogen atoms are in the following structure?



6



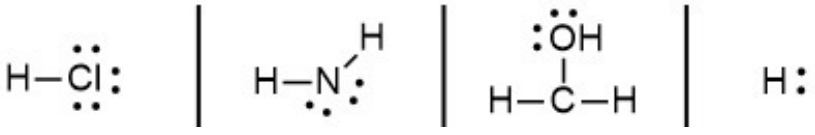
7 Draw the Lewis structure of the following

$CCl_3CO_2CH_2CH_3$

Drawing Lewis Structures (Klein 1.3)

1) draw skeleton - connectivity
2) count total # of valence electrons
   (valence e^- = group no.)
3) subtract charge (if any)
4) fill in missing electrons (fill octets)
5) determine formal charges (if any)

8 Add any missing formal charges in the following Lewis structures:



Formal Charges (Klein 1.4)

- **determine "electron count"**
  = all nonbonded + 1/2 bonded/shared
- **compare "electron count" with valence**
  missing an electron → + charge
  extra electron → – charge