

Organic Chemistry I, CHM 3140
Dr. Laurie S. Starkey, Cal Poly Pomona
Chapter 1 General Chemistry Review, Part 1 – [Practice Problems](#)

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1

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

hydrogen 1 H 1.0079																helium 2 He 4.0026																																																																																																																																																																																																																																																																																																																																																																																																																															
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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

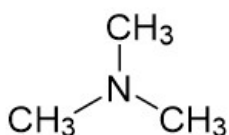
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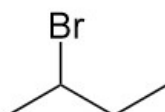
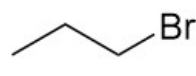
Br

Which of the following represents a pair of constitutional isomers?

4

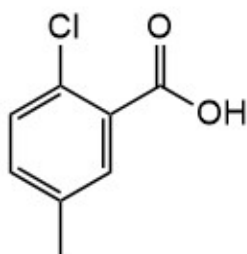
I. H_2O and H_3O^+

II.  and $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2$

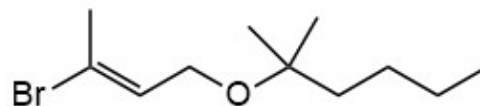
III.  and 

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

5

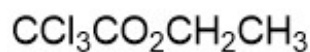


6



7

Draw the Lewis structure of the following

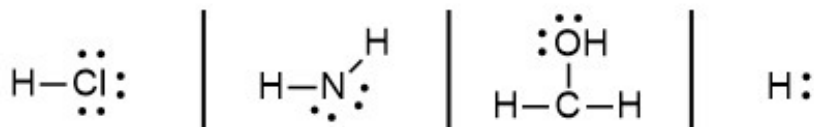


Drawing Lewis Structures (Klein 1.3)

- 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 \rightarrow + charge
extra electron \rightarrow - charge