

Covalent Bonding—Additional Practice

1. Draw a Lewis structure for each of the following molecules:

(a) CCl_4	(d) Br_2
(b) PH_3	(e) SiH_4
(c) C_2H_2	(f) H_2S

2. Using the periodic table and your knowledge of electronegativity, predict which atom in each of the following pairs of atoms has the higher electronegativity. Justify your prediction.

(a) magnesium and sulfur _____

(b) potassium and bromine _____

(c) hydrogen and oxygen _____

3. Arrange the following bonds in order from most polar to least polar: S—O , Cl—Cl , Cl—O . Justify your order.

4. In each of the following pairs of bonded atoms, which bond is more polar?

(a) H—O or S—O _____

(b) H—O or H—S _____

(c) N—Cl or N—F _____

5. State whether each molecule in **Table 1** is polar or nonpolar. Use the Lewis structures you drew in question 1 to help you.

Table 1 Shape and Polarity of Molecules

Molecule	Polar or nonpolar?
CCl_4	
PH_3	
C_2H_2	
Br_2	
SiH_4	
H_2S	