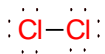
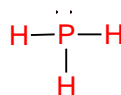


1. Write Lewis dot structures for the following molecules: (4 pts)

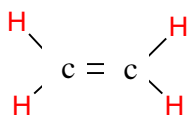
a)  $\text{Cl}_2$



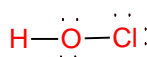
b)  $\text{PH}_3$



c)  $\text{C}_2\text{H}_4$



d)  $\text{HOCl}$



2. Classify each of the following bonds as ionic, covalent, or polar covalent. (4 pts)  
(Electronegativity values: I = 2.5, H = 2.1, S = 2.5, Br = 2.8, C = 2.5)

a. I-C

$$2.5 - 2.5 = 0$$

Covalent

b. C-S

$$2.5 - 2.5 = 0$$

Covalent

c. S-H

$$2.5 - 2.1 = 0.4$$

Polar covalent

d. H-Br

$$2.8 - 2.1 = 0.7$$

Polar covalent

3. Indicate both the electron geometry and molecular shape of  $\text{H}_2\text{O}$ . (2 pts)



4 groups of electron pairs (2 bonding + 2 lone pairs)

Electron geometry = tetrahedral

Molecular shape = bent