General Chemistry HW 5

*Optional: practice naming the molecules from the problems for your own practice.

1. Explain why hydrogen and helium follow the duet rule while other elements tend to follow the octet rule.

2. Give the Lewis dot structures for each molecule:

a. SF₂

b. PCI_5

 $c. \ NO_2$

d. O₃

e. CIF_3

f. SO₃

g. XeO_4

h. CO32-

3. Determine the formal charge for each atom in the following molecules:

a. CIO₂-

b. HNO_2

c. SO₃²⁻

d. 104⁻

e. $Cr_2O_7^{2-}$

4. Draw the resonance structures for the following molecules. Place each molecule in a bracket with the charge outside the bracket and double headed arrows between each structure.

a. HCO_2^{-1}

b. NCO⁻

5. Predict the VSEPR structures for the following molecules.

a. SF₄

b. BF_3

c. I₃⁻

 $d. \ CH_4$

e. BrF_5