Honors Chemistry Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WS Molecular Geometry Period \_\_\_\_\_\_\_

1.a) How does one determine the number of electron domains in a molecule or ion?

b) What is the difference between a ***bonding electron domain*** and a ***nonbonding electron domain***?

2. What are the electron-domain and molecular geometries of a molecule that has the following electron

domains on its central atom?

a) Three bonding domains and no nonbonding domains

b) Three bonding domains and one nonbonding domain

c) Two bonding domains and two nonbonding domains

3. Give approximate values for the indicated bond angles in the following molecules:

a) 1.

2.

b) 3.

4.

c) 5.

6.

d) 7.

8.

4. Explain why the following ions have different bond angles: ClO2-1 and NO2-1.

Predict the bond angle in each case.

5. Draw the **Lewis structure** (electron dot structure) for each molecule or ion and **predict its shape**.

a) AsF3

b) ClO3-1

c) BrO2-1

d) NH2-1

e) NH3

f) NH4+1