

Name: _____

Date: _____

[15 pt] 1. Complete the following questions about Lewis Structures:

- (a) When counting valence electrons in a cation _____ an electron for each positive charge.
- (b) When counting valence electrons in an anion _____ and electron for each negative charge.
- (c) Molecules should be drawn as _____ as possible and the least _____ should be in the center.
- (d) Hydrogen makes _____ bonds.
- (e) Oxygen generally makes _____ bonds and very rarely (never in CHE 101) bonds to _____
- (f) Nitrogen generally makes _____ bonds.
- (g) Rarely Nitrogen can make _____ bonds if it is a _____
- (h) F, Cl, Br, I generally make _____ bond.
- (i) After making a trial structure start to complete _____ until you run out of _____
- (j) If you can't complete _____ then you will need to form _____ and _____ bonds
- (k) If you have completed all octets you are _____

[2 pt] 2. What does VSEPR stand for? What primary force determines the shape of molecules?

[3 pt] 3. Complete the following table:

# bonding e ⁻ pairs	# lone e ⁻ pairs	Molecular Shape	Bond Angle
4	0		
3	1		
		Bent	109.5
		Trigonal Planar	
2	1		
2			180

CHE 101 - Homework - Ch 7e

[20 pt] 4. Draw the Lewis Structure **AND** use the VSEPR theory to predict the shape **AND** bond angle of each atom (with more than one atom attached). Draw an arrow from the information to the atom. Also tell whether the molecule is Nonpolar (NP) or Dipolar (DP).

