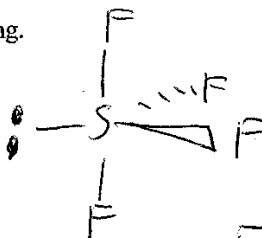
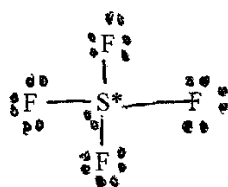


Name key Name _____
 (print name) (sign name)

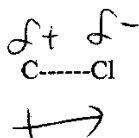
Please show work for full credit and to get partial credit.

1. For the following Lewis Dot structure, complete the following.

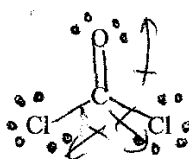


- How many electron pairs (VSEPR electron pair) are on the atom with the *? 5 2 pt
 - How many lone pairs are on the atom with the *? 1 3 pt
 - What is the geometry of the electron pairs? trigonal bipyramidal 3 pt
 - What is the geometry of the molecule? see saw 3 pt
 - What is the hybridization of the atom with the *? sp³d 3 pt
 - What is the bond angle in the molecule? 120°, 90° 3 pt
2. Draw the molecule above in 3D using the wedge, dash, line drawing in the space next to the Lewis Dot structure. Remember that (coming away from plane) (going below plane) (in plane) (3 pt)

Extra Credit (3 pts, 1 pt per letter) a. For the bond between the atoms show the dipole of the bond using the following $+ \cdots >$ or the $\delta+ / \delta-$



b. For the 3D drawing below, show all individual dipole moment arrows.



Cl + O - different

c. Is the molecule above (polar) or (nonpolar) (circle one of the two parenthesis) Explain.

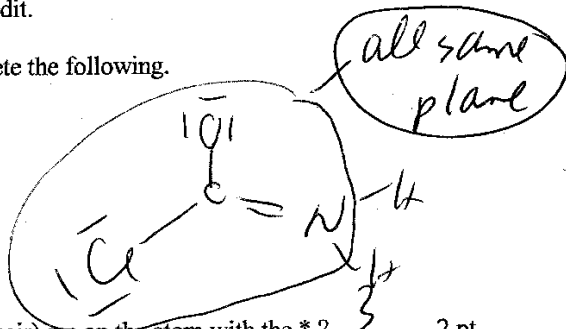
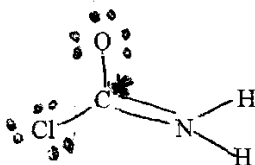
vector sum $\neq 0$

Name Key Name _____
 (print name) (sign name)

green

Please show work for full credit and to get partial credit.

1. For the following Lewis Dot structure, complete the following.



a. How many electron pairs (VSEPR electron pair) are on the atom with the *? 3 2 pt

b. How many lone pairs are on the atom with the *? 0 3 pt

c. What is the geometry of the electron pairs? trigonal planar 3 pt

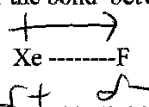
d. What is the geometry of the molecule? trigonal planar 3 pt

e. What is the hybridization of the atom with the *? sp² 3 pt

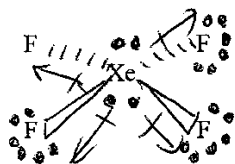
f. What is the bond angle in the molecule? 120° 3 pt

2. Draw the molecule above in 3D using the wedge, dash, line drawing in the space next to the Lewis Dot structure. Remember that (coming away from plane) (going below plane) (in plane) (3 pt)

Extra Credit (3 pts) a. For the bond between the atoms show the dipole of the bond using the following +---> or the δ+ / δ- (1 pt. per letter)



b. For 3D drawing below, show all individual dipole moment arrows.



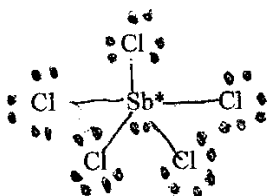
c. Is the molecule above [(polar) or (nonpolar)] (circle one of the two parenthesis) Explain.

nonpolar
 Symmetric + Xe-F bonds all same
 Vector sum = zero

Name Key Name _____
 (print name) (sign name)

Please show work for full credit and to get partial credit.

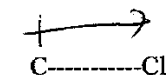
1. For the following Lewis Dot structure, complete the following.



- a. How many electron pairs (VSEPR electron pair) are on the atom with the *? 6 (2pt)
 b. How many lone pairs are on the atom with the *? 1 (3pt)
 c. What is the geometry of the electron pairs? octahedral (3pt)
 d. What is the geometry of the molecule? square pyramidal (3pt)
 e. What is the hybridization of the atom with the *? sp³d² (3pt)
 f. What is the bond angle in the molecule? 90° (3pt)

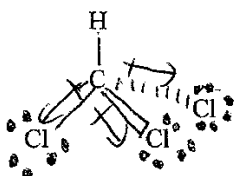
2. Draw the molecule above in 3D using the wedge, dash, line drawing in the space next to the Lewis Dot structure. Remember that (coming away from plane) (going below plane) (in plane) (3pt)

Extra Credit (3 pts) a. For the bond between the atoms show the dipole of the bond using the following +---> or the δ+ / δ-



(1 pt per letter)

- b. For 3D drawing below, show all individual dipole moment arrows.



C & H almost same electro negativity

- c. Is the molecule above [(polar)] or (nonpolar)] (circle one of the two parenthesis) Explain.

vector sum ≠ zero

Name Key Name Green
 (print name) (sign name)

Please show work for full credit and to get partial credit.

1. For the following Lewis Dot structure, complete the following.



all in same plane

- a. How many electron pairs (VSEPR electron pair) are on the atom with the *? 3 (2 pt)
- b. How many lone pairs are on the atom with the *? 1
- c. What is the geometry of the electron pairs? trigonal planar (3 pt)
- d. What is the geometry of the molecule? bent (3 pt)
- e. What is the hybridization of the atom with the *? sp² (3 pt)
- f. What is the bond angle in the molecule? 120° (3 pt)
2. Draw the molecule above in 3D using the wedge, dash, line drawing in the space next to the Lewis Dot structure. Remember that (coming away from plane) (going below plane) (in plane) (3 pt)

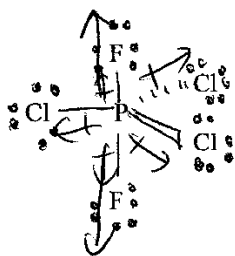
- Extra Credit (3 pts) a. For the bond between the atoms show the dipole of the bond using the following +---> or the δ+ / δ-



(1 pt per letter)



- b. For 3D drawing below, show all individual dipole moment arrows.



P more EN than Cl

but F-P-F symmetric

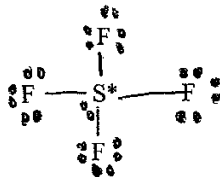
are symmetric
 vector sum = 0

- c. Is the molecule above [(polar) or (nonpolar)] (circle one of the two parenthesis) Explain.

Name _____ Name _____
 (print name) (sign name)

Please show work for full credit and to get partial credit.

1. For the following Lewis Dot structure, complete the following.

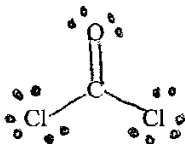


- How many electron pairs (VSEPR electron pair) are on the atom with the *? _____ 2 pt
 - How many lone pairs are on the atom with the *? _____ 3 pt
 - What is the geometry of the electron pairs? _____ 3 pt
 - What is the geometry of the molecule? _____ 3 pt
 - What is the hybridization of the atom with the *? _____ 3 pt
 - What is the bond angle in the molecule? _____ 3 pt
2. Draw the molecule above in 3D using the wedge, dash, line drawing in the space next to the Lewis Dot structure. Remember that (coming away from plane) (going below plane) (in plane) (3 pt)

Extra Credit (3 pts, 1 pt per letter) a. For the bond between the atoms show the dipole of the bond using the following $+ \text{---} >$ or the $\delta+ / \delta-$



- b. For the 3D drawing below, show all individual dipole moment arrows.

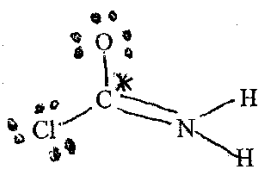


- c. Is the molecule above [(polar) or (nonpolar)] (circle one of the two parenthesis) Explain.

Name _____ Name _____
 (print name) (sign name)

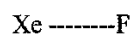
Please show work for full credit and to get partial credit.

1. For the following Lewis Dot structure, complete the following.

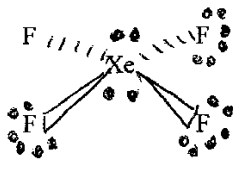


- How many electron pairs (VSEPR electron pair) are on the atom with the * ? _____ 2 pt
 - How many lone pairs are on the atom with the * ? _____ 3 pt
 - What is the geometry of the electron pairs ? _____ 3 pt
 - What is the geometry of the molecule ? _____ 3 pt
 - What is the hybridization of the atom with the * ? _____ 3 pt
 - What is the bond angle in the molecule ? _____ 3 pt
2. Draw the molecule above in 3D using the wedge, dash, line drawing in the space next to the Lewis Dot structure. Remember that (coming away from plane) (going below plane) (in plane _____)

Extra Credit (3 pts) a. For the bond between the atoms show the dipole of the bond using the following +---> or the $\delta+$ / $\delta-$



b. For 3D drawing below, show all individual dipole moment arrows.

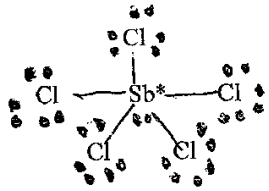


c. Is the molecule above [(polar) or (nonpolar)] (circle one of the two parenthesis) Explain.

Name _____ Name _____
 (print name) (sign name)

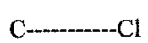
Please show work for full credit and to get partial credit.

1. For the following Lewis Dot structure, complete the following.

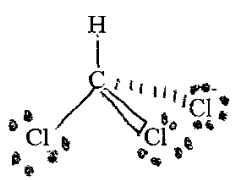


- How many electron pairs (VSEPR electron pair) are on the atom with the *? _____ (2 pt)
 - How many lone pairs are on the atom with the *? _____ (3 pt)
 - What is the geometry of the electron pairs? _____ (3 pt)
 - What is the geometry of the molecule? _____ (3 pt)
 - What is the hybridization of the atom with the *? _____ (3 pt)
 - What is the bond angle in the molecule? _____ (3 pt)
2. Draw the molecule above in 3D using the wedge, dash, line drawing in the space next to the Lewis Dot structure. Remember that (coming away from plane) (going below plane) (in plane) (3 pt)

Extra Credit (3 pts) a. For the bond between the atoms show the dipole of the bond using the following $\delta^+ \delta^-$ or the δ^+ / δ^-



b. For 3D drawing below, show all individual dipole moment arrows.

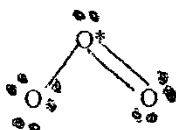


c. Is the molecule above [(polar) or (nonpolar)] (circle one of the two parenthesis) Explain.

Name _____ Name _____
 (print name) (sign name)

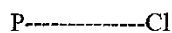
Please show work for full credit and to get partial credit.

1. For the following Lewis Dot structure, complete the following.

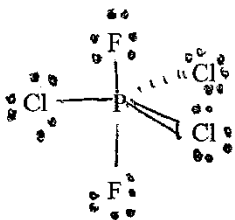


- How many electron pairs (VSEPR electron pair) are on the atom with the *? _____ (2 pt)
 - How many lone pairs are on the atom with the *? _____ (3 pt)
 - What is the geometry of the electron pairs? _____ (3 pt)
 - What is the geometry of the molecule? _____ (3 pt)
 - What is the hybridization of the atom with the *? _____ (3 pt)
 - What is the bond angle in the molecule? _____ (3 pt)
2. Draw the molecule above in 3D using the wedge, dash, line drawing in the space next to the Lewis Dot structure. Remember that (coming away from plane) (going below plane) (in plane) _____ (3 pt)

Extra Credit (3 pts) a. For the bond between the atoms show the dipole of the bond using the following $\text{+} \text{---} \text{>}$ or the δ^+ / δ^-



- b. For 3D drawing below, show all individual dipole moment arrows.



- c. Is the molecule above [(polar) or (nonpolar)] (circle one of the two parenthesis) Explain.