

Revised August 2010



HONORS WORKSHEET 9e: Lewis Structures and Shapes II

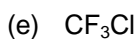
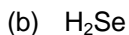


1. What does the term VSEPR stand for? What single principle determines the shape of a molecule or ion? (2)
2. What is meant by the "octet rule"? (1)
3. Give two exceptions to the octet rule and explain why they exist. (4)
4. Draw Lewis structures for the following species. (8)
 - (a) CN^-
 - (b) SiCl_4
 - (c) AsBr_6^-
 - (d) ClO_4^-

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5. Predict the shape (and the bond angles present) of the following species. (15)



6. Oxygen can form a compound with fluorine that has the formula OF_2 , BUT it does not form compounds such as OF_4 or OF_6 . Sulfur on the other hand, ALSO in group 16 (the same group as O), DOES form SF_4 and SF_6 as well as SF_2 . Suggest a reason for this observation. (HINT: Try drawing Lewis structures for the species). (2)