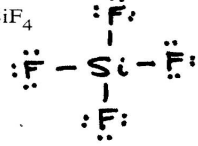


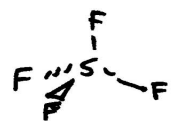
For the following: (a) draw the Lewis structure, (b) write the VSEPR formula, (c) define shape, (d) identify the hybridization of the central atom, and (e) draw the geometric formula.

1.  $\text{SiF}_4$

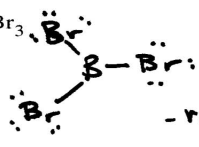
$1-\text{Si} \rightarrow 4$   
 $4-\text{F} \rightarrow 28$   
 $\frac{32}{-8}$   
 $\frac{24}{24}$



$\text{AX}_4\text{LP}_0$  tetrahedral  $sp^3$

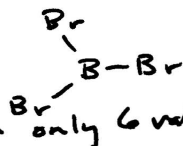

2.  $\text{BBr}_3$

$1-\text{B} \rightarrow 3$   
 $3-\text{Br} \rightarrow 21$   
 $\frac{24}{-6}$   
 $\frac{18}{18}$

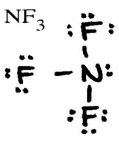


$\text{AX}_3\text{LP}_0$  trigonal planar  $sp^2$

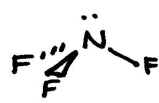
- remember B + Al can survive with only 6 valence e<sup>-</sup>


3.  $\text{NF}_3$

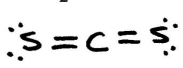
$1-\text{N} \rightarrow 5$   
 $3-\text{F} \rightarrow 21$   
 $\frac{26}{-6}$   
 $\frac{20}{20}$



$\text{AX}_3\text{LP}_1$  trigonal pyramidal  $sp^3$

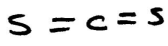

4.  $\text{CS}_2$

$1-\text{C} \rightarrow 4$   
 $2-\text{S} \rightarrow 12$   
 $\frac{16}{-8}$   
 $\frac{8}{8}$

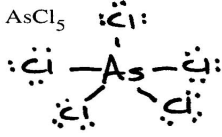


$\text{AX}_2\text{LP}_0$  linear  $sp$

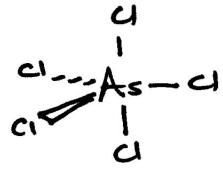
$\text{S}=\text{C}=\text{S}$


5.  $\text{AsCl}_5$

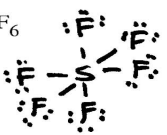
$1-\text{As} \rightarrow 5$   
 $5-\text{Cl} \rightarrow 35$   
 $\frac{40}{-10}$   
 $\frac{30}{30}$



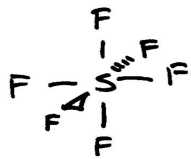
$\text{AX}_5\text{LP}_0$  trigonal bipyramidal  $sp^3d$


6.  $\text{SF}_6$

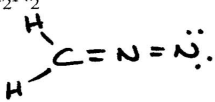
$1-\text{S} \rightarrow 6$   
 $6-\text{F} \rightarrow 42$   
 $\frac{48}{-12}$   
 $\frac{36}{36}$



$\text{AX}_6\text{LP}_0$  octahedral


7.  $\text{CH}_2\text{N}_2$

$1-\text{C} \rightarrow 4$   
 $2-\text{H} \rightarrow 2$   
 $2-\text{N} \rightarrow 10$   
 $\frac{16}{-12}$   
 $\frac{4}{4}$



$\text{AX}_3\text{LP}_1$  (for C) trigonal planar  $sp^2$   
 $\text{AX}_2\text{LP}_0$  (for N) linear  $sp$

