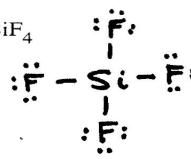


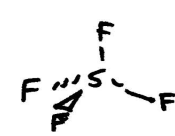
For the following: (a) draw the Lewis structure, (b) write the VSEPR formula, (c) define shape, (d) identify the hybridization of the central atom, and (e) draw the geometric formula.

1. SiF_4

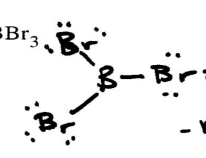
$$\begin{array}{r} 1-\text{Si} \rightarrow 4 \\ 4-\text{F} \rightarrow 28 \\ \hline 32 \\ -18 \\ \hline 24 \end{array}$$



AX_4LP_0 tetrahedral sp^3

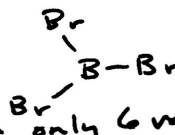

2. BBr_3

$$\begin{array}{r} 1-\text{B} \rightarrow 3 \\ 3-\text{Br} \rightarrow 21 \\ \hline 24 \\ -18 \\ \hline 6 \end{array}$$

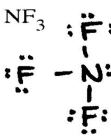


AX_3LP_0 trigonal planar sp^2

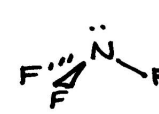
- remember B + Al can survive with only 6 valence e⁻


3. NF_3

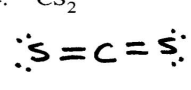
$$\begin{array}{r} 1-\text{N} \rightarrow 5 \\ 3-\text{F} \rightarrow 21 \\ \hline 26 \\ -16 \\ \hline 10 \end{array}$$



AX_3LP_1 trigonal pyramidal sp^3


4. CS_2

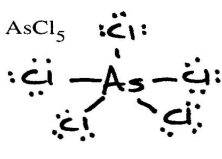
$$\begin{array}{r} 1-\text{C} \rightarrow 4 \\ 2-\text{S} \rightarrow 12 \\ \hline 16 \\ -8 \\ \hline 8 \end{array}$$



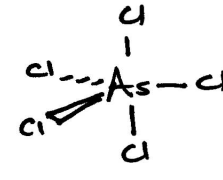
AX_2LP_0 linear sp

$\text{S}=\text{C}=\text{S}$
5. AsCl_5

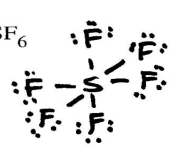
$$\begin{array}{r} 1-\text{As} \rightarrow 5 \\ 5-\text{Cl} \rightarrow 35 \\ \hline 40 \\ -10 \\ \hline 30 \end{array}$$



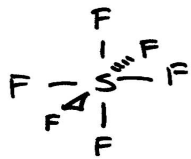
AX_5LP_0 trigonal bipyramidal sp^3d


6. SF_6

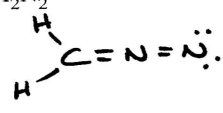
$$\begin{array}{r} 1-\text{S} \rightarrow 6 \\ 6-\text{F} \rightarrow 42 \\ \hline 48 \\ -12 \\ \hline 36 \end{array}$$



AX_6LP_0 octahedral


7. CH_2N_2

$$\begin{array}{r} 1-\text{C} \rightarrow 4 \\ 2-\text{H} \rightarrow 2 \\ 2-\text{N} \rightarrow 10 \\ \hline 16 \\ -12 \\ \hline 4 \end{array}$$



AX_3LP_1 (for C) trigonal planar sp^2
 AX_2LP_0 (for N) linear sp

