

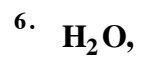
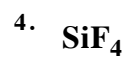
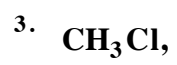
OCTET (DOUBLET) REQUIREMENT
METHOD FOR COVALENT BONDING ADV

1. DRAW ELECTRON DOT STRUCTURE OF ELEMENTS IN COMPOUND
2. HAVES: count the total # of valence electrons in the compound
3. WANTS: how many electrons are required to fulfill the octet or doublet for each atom in the compound
4. DIFFERENCE: take the difference between the wants and hases
5. -- 2 = # of shared pairs: divide the DIFFERENCE by 2 to calculate the pairs of shared electrons
6. # BONDING SITES = count the # of connections to the central atom

Examples:

1. NH ₃	2. CO ₂	3. [SO ₄] ⁻²
1. N H	C O	S O
2. HAVES 5 + 3 (1) = 8	4 + 2 (6) = 16	6 + 4(6) + 2 e ⁻ = 32
3. WANTS 8 + 3 (2) = 14	3 (8) = 24	5 (8) = 40
4. DIFF 6	8	8
5. - 2 3 pairs	4 pairs	4 pairs
6. # SITES 3	2	3
H N H	O C O	O S O
H		O

YOU TRY on a clean piece of paper.





Identify lone pairs of electrons within the compounds by highlighting each pair.