

# AP CHEMISTRY

## TOPIC 5: BONDING, PART C

## EXAMPLES

Day 51:

- VSEPR (Valence Shell Electron Pair Repulsion Theory)

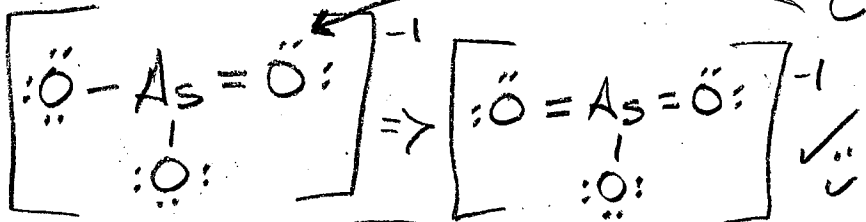
First draw the Lewis Structure, then name the shape (with lone pairs) and then indicate the name of the molecular shape (ignoring lone pairs, the shape the atoms form). Be sure to check formal charges as well.



$$5e^- + (3)6e^- + 1e^- = 24e^-$$

$$\text{F.C. (As)} = \# \text{Assigned} - \text{Val} = \text{F.C.} = 5 - 4 = +1$$

CHANGE ONE MORE OXYGEN

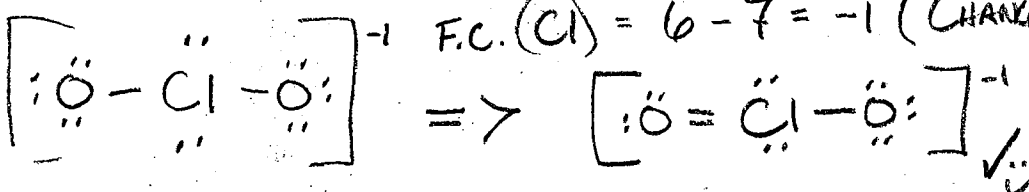


NAME w/L.P. = TRI-PLANAR  
MOLECULAR = TRI-PLANAR



$$7e^- + (2)6e^- + 1e^- = 20e^-$$

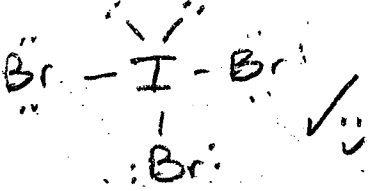
$$\text{F.C. (Cl)} = 6 - 7 = -1 \text{ (CHANGE ONE MORE OXYGEN)}$$



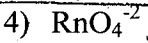
NAME w/L.P. = TETRA  
MOLECULAR = BENT



$$7e^- + (3)7e^- = 28e^- / \text{F.C. (I)} = 7 - 7 = 0 \checkmark$$

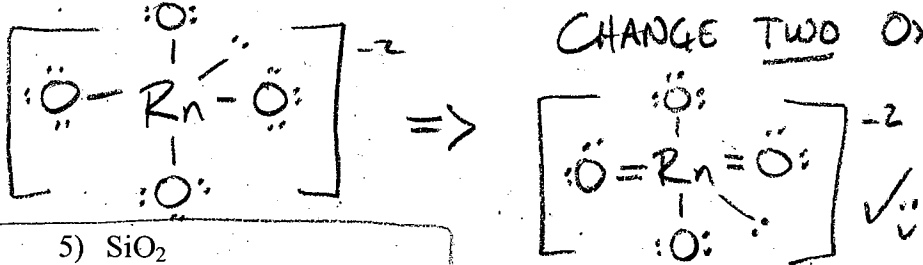


NAME w/L.P. = TRIGONAL B. PYRAMIDAL  
MOLECULAR = T-SHAPED PLANAR

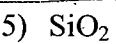


$$8e^- + (4)6e^- + 2e^- = 34e^- / \text{F.C. (Rn)} = 8 - 6 = +2$$

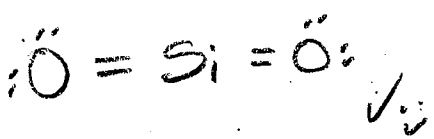
CHANGE TWO OXYGENS



NAME w/L.P. = TRI-BIPYR.  
MOLECULAR = SEE-SAW



$$4e^- + (2)6e^- = 16e^- / \text{F.C. (Si)} = 4 - 4 = 0 \checkmark$$



NAME w/L.P. = LINEAR  
MOLECULAR = LINEAR