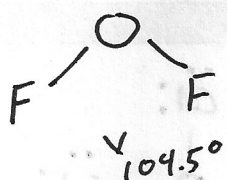
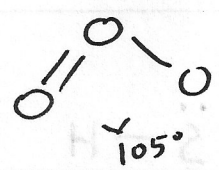
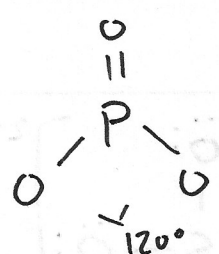
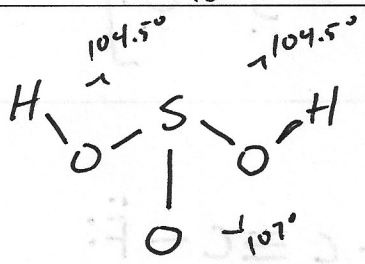
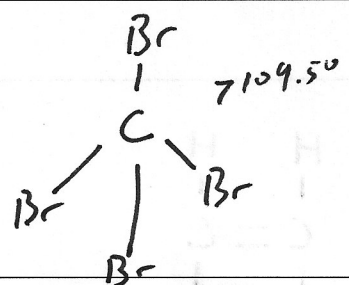
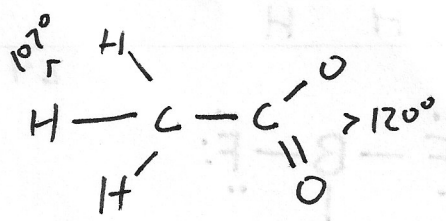


# Practice - Molecular Shape (VSEPR)

Draw a Lewis structure and the molecular shape for each of the following covalent compounds, labeling the bond angles and naming the shape.

	Lewis Structure	Model & Angle	Name of Shape
1. PCl <sub>3</sub>	$  \begin{array}{c}  \text{:}\ddot{\text{Cl}}\text{:} \\    \\  \text{:}\ddot{\text{Cl}}-\text{P}-\ddot{\text{Cl}}\text{:} \\  \text{:}  \end{array}  $	$26$ 	Pyramidal
2. H <sub>2</sub> S	$  \text{H}-\ddot{\text{S}}-\text{H}  $	$8$ 	Bent
3. HCN	$  \text{H}-\text{C}\equiv\text{N:}  $	$10$ 	Linear
4. SO <sub>3</sub> <sup>2-</sup>	$  \left[ \begin{array}{c}  \text{:}\ddot{\text{O}}\text{:} \\    \\  \text{:}\ddot{\text{O}}-\text{S}-\ddot{\text{O}}\text{:} \\  \text{:}  \end{array} \right]^{2-}  $	$\frac{24+2}{26}$ 	Pyramidal
5. C <sub>2</sub> F <sub>2</sub>	$  \text{:}\ddot{\text{F}}-\text{C}\equiv\text{C}-\ddot{\text{F}}\text{:}  $	$22$ 	Linear & Linear
6. C <sub>2</sub> H <sub>4</sub>	$  \begin{array}{cc}  \text{H} & \text{H} \\    &   \\  \text{C} & = & \text{C} \\    &   \\  \text{H} & \text{H}  \end{array}  $	$12$ 	Trigonal Planar & Trigonal Planar
7. BF <sub>3</sub>	$  \begin{array}{c}  \text{:}\ddot{\text{F}}-\text{B}-\ddot{\text{F}}\text{:} \\    \\  \text{:}\ddot{\text{F}}\text{:}  \end{array}  $	$24$ 	Trigonal Planar

	Lewis Structure	Model & Angle	Name of Shape
8. OF <sub>2</sub>	$\begin{array}{c} \cdot\cdot \\ \cdot\cdot \\ \text{:}\ddot{\text{F}} - \ddot{\text{O}} - \ddot{\text{F}}\text{:} \\ \cdot\cdot \\ \cdot\cdot \end{array}$		Bent
9. O <sub>3</sub>	$\begin{array}{c} \cdot\cdot \\ \cdot\cdot \\ \text{:}\ddot{\text{O}} - \ddot{\text{O}} = \ddot{\text{O}} \\ \cdot\cdot \\ \cdot\cdot \\ \ddot{\text{O}} = \ddot{\text{O}} - \ddot{\text{O}}\text{:} \\ \cdot\cdot \\ \cdot\cdot \end{array}$		Bent
10. NO <sup>+</sup>	$\left[ \text{:N} \equiv \text{O:} \right]^+$	$\text{N} \equiv \text{O}$	Linear
11. PO <sub>3</sub> <sup>-</sup>	$\left[ \begin{array}{c} \cdot\cdot \\ \cdot\cdot \\ \text{:}\ddot{\text{O}}\text{:} \\ \parallel \\ \text{:}\ddot{\text{O}} - \text{P} - \ddot{\text{O}}\text{:} \\ \cdot\cdot \\ \cdot\cdot \end{array} \right]^- \left[ \begin{array}{c} \cdot\cdot \\ \cdot\cdot \\ \text{:}\ddot{\text{O}}\text{:} \\ \parallel \\ \ddot{\text{O}} - \text{P} - \ddot{\text{O}}\text{:} \\ \cdot\cdot \\ \cdot\cdot \end{array} \right]^-$		Trigonal Planar
12. H <sub>2</sub> SO <sub>3</sub>	$\begin{array}{c} \cdot\cdot \\ \cdot\cdot \\ \text{:}\ddot{\text{O}}\text{:} \\   \\ \text{H} - \ddot{\text{O}} - \text{S} - \ddot{\text{O}} - \text{H} \\ \cdot\cdot \\ \cdot\cdot \end{array}$		Bent's Pyramidal Bent
13. CBr <sub>4</sub>	$\begin{array}{c} \text{Br} \\   \\ \text{Br} - \text{C} - \text{Br} \\   \\ \text{Br} \end{array}$		Tetrahedral
14. Challenge C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> <sup>-</sup> Challenge	$\left[ \begin{array}{c} \text{H} \quad \cdot\cdot \\   \quad \cdot\cdot \\ \text{H} - \text{C} - \text{C} \\   \quad \parallel \\ \text{H} \quad \cdot\cdot \\ \cdot\cdot \end{array} \right]^-$		Tetrahedral & Trigonal Planar