$$\begin{bmatrix} : \ddot{O}: \\ \vdots \\ O : \end{bmatrix}^{2^{-}} \longleftrightarrow \begin{bmatrix} : O: \\ \vdots \\ O : \end{bmatrix}^{2^{-}} \longleftrightarrow \begin{bmatrix} : \ddot{O}: \\ \vdots \\ O : \end{bmatrix}^{2^{-}} \longleftrightarrow \begin{bmatrix} : \ddot{O}: \\ \vdots \\ O : \end{bmatrix}^{2^{-}}$$

$$\begin{bmatrix} \vdots \\ S - C = N \end{bmatrix} \quad \text{or} \quad \begin{bmatrix} \vdots \\ S = C = N \\ 0 \quad 0 \quad -1 \end{bmatrix} \quad \text{or} \quad \begin{bmatrix} \vdots \\ S = C - N \\ +1 \quad 0 \quad -2 \end{bmatrix}$$

X + E	Overall Structure (Electronic Geometry)	Forms
2	Linear	AX ₂
3	Trigonal Planar	AX ₃ , AX ₂ E
4	Tetrahedral	AX_4 , AX_3E , AX_2E_2
5	Trigonal bipyramidal	AX_5 , AX_4E , AX_3E_2 , AX_2E_3
6	Octahedral	AX ₆ , AX ₅ E, AX ₄ E ₂

"Rules" for Drawing Lewis Structures

- 1) Count and sum valence electrons.
- 2) Place your atoms.
- 3) Bond all atoms w/ a single bond (try simplest way 1st).
- 4) Give all atoms a full shell.
- 5) Re-count the electrons you used.
- 6) Used too few? Put extras on the central atom.
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- 8) Re-count.

$$\begin{bmatrix} \vdots \ddot{O} \vdots \\ \vdots \ddot{O} \vdots \\ C & \vdots \ddot{O} \end{bmatrix}^{2^{-}} \longleftrightarrow \begin{bmatrix} \vdots O \vdots \\ \vdots \ddot{O} \vdots \\ \vdots \ddot{O} \vdots \\ \vdots \ddot{O} \vdots \end{bmatrix}^{2^{-}} \longleftrightarrow \begin{bmatrix} \vdots \ddot{O} \vdots \\ \vdots \ddot{O} \vdots \\ \vdots \ddot{O} \vdots \\ \vdots \ddot{O} \vdots \end{bmatrix}^{2^{-}}$$

$$\begin{bmatrix} \vdots \ddot{S} - C \equiv N \vdots \\ -1 & 0 & 0 \end{bmatrix} \text{ or } \begin{bmatrix} \ddot{S} = C = \ddot{N} \\ 0 & 0 & -1 \end{bmatrix} \text{ or } \begin{bmatrix} \vdots \ddot{S} \equiv C - \ddot{N} \vdots \\ +1 & 0 & -2 \end{bmatrix}$$

$$\begin{bmatrix} \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \end{bmatrix}^{2-} \begin{bmatrix} \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \end{bmatrix}^{2-} \begin{bmatrix} \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \end{bmatrix}^{2-} \begin{bmatrix} \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \\ \vdots \ddot{\bigcirc} & \vdots \end{bmatrix}^{2-}$$

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$$\begin{bmatrix} : \ddot{O}: \\ \vdots \\ C & O \end{bmatrix}^{2-} \longleftrightarrow \begin{bmatrix} : O: \\ \vdots \\ C & O \end{bmatrix}^{2-} \longleftrightarrow \begin{bmatrix} : \ddot{O}: \\ \vdots \\ O & O \end{bmatrix}^{2-}$$

$$\begin{bmatrix} \vdots \ddot{S} - C \equiv N \vdots \end{bmatrix}^{-1} \text{ or } \begin{bmatrix} \ddot{S} = C = \ddot{N} \\ 0 & 0 & -1 \end{bmatrix}^{-1} \text{ or } \begin{bmatrix} \vdots S \equiv C - \ddot{N} \vdots \end{bmatrix}^{-1}$$

$$\begin{bmatrix} \vdots \ddot{\bigcirc} & \\ \end{bmatrix}^{2-} \begin{bmatrix} \vdots \ddot{\bigcirc} & \\ \vdots \ddot{} & \\ \ddot{} & \\ \vdots \ddot{} & \\ \vdots \ddot{} & \\ \vdots \ddot{} & \\ \ddot{} & \\ \vdots \ddot{} & \\ \ddot$$

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