

## Lewis' Rules

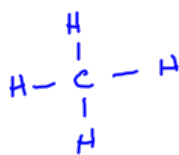
1. Count electrons
2. Arrange atoms
3. Single Bond Everything
4. Add the rest of the electrons  
in pairs  
from the outside, in
5. Fix octets  
if needed  
if possible

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Examples: CH<sub>4</sub>, F<sub>2</sub>, NF<sub>3</sub>, CO<sub>2</sub>

$$\text{CH}_4 \quad 4 + 4(1) = 8$$

$$\begin{array}{r} -8 \\ \hline 0 \end{array}$$



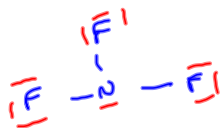
$$\text{F}_2 \quad 2(7) = 14$$

$$\begin{array}{r} -2 \\ \hline 12 \div 2 = 6 \end{array}$$



$$\text{NF}_3 \quad 5 + 3(7) = 26$$

$$\begin{array}{r} -6 \\ \hline 20 \div 2 = 10 \end{array}$$

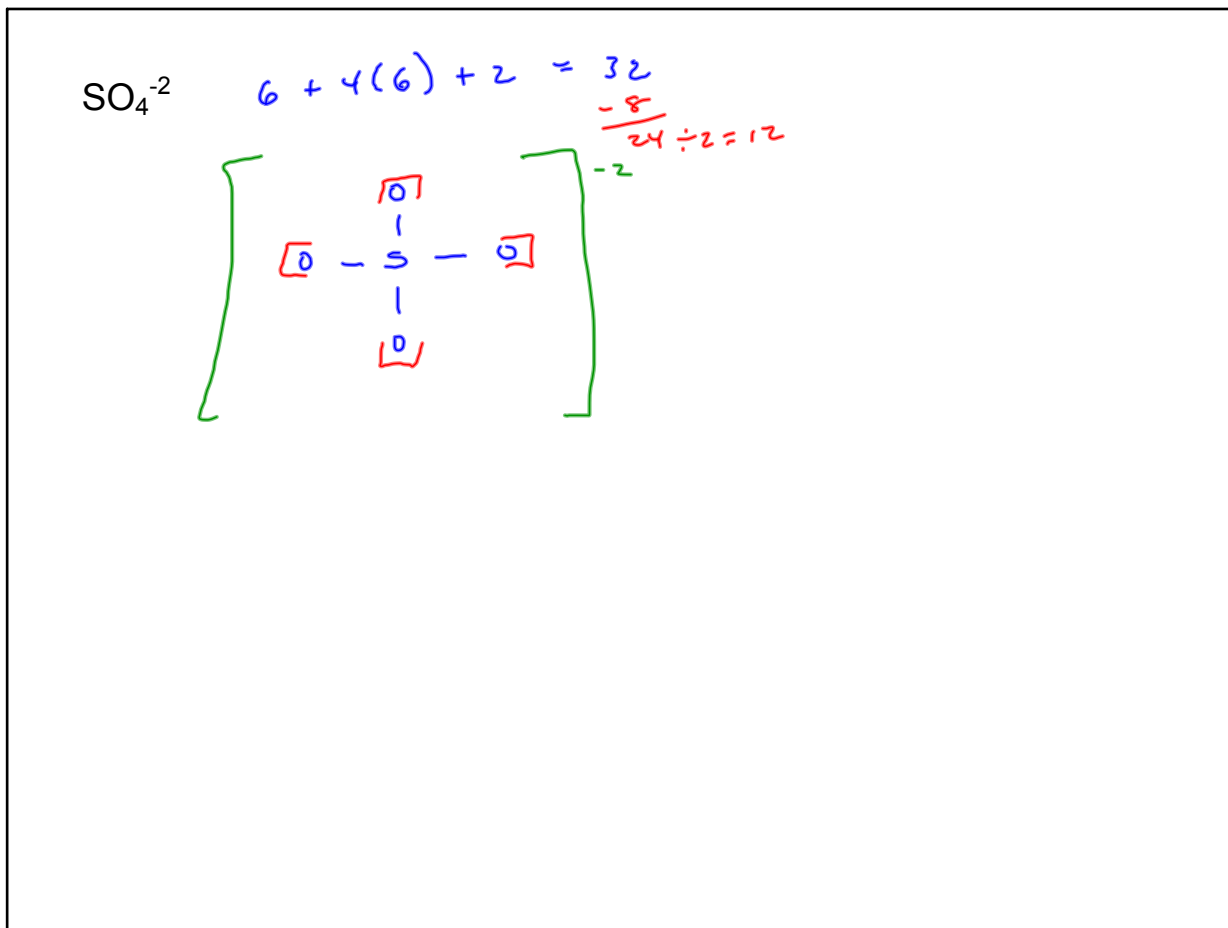


$$\text{CO}_2 \quad 4 + 2(6) = 16$$

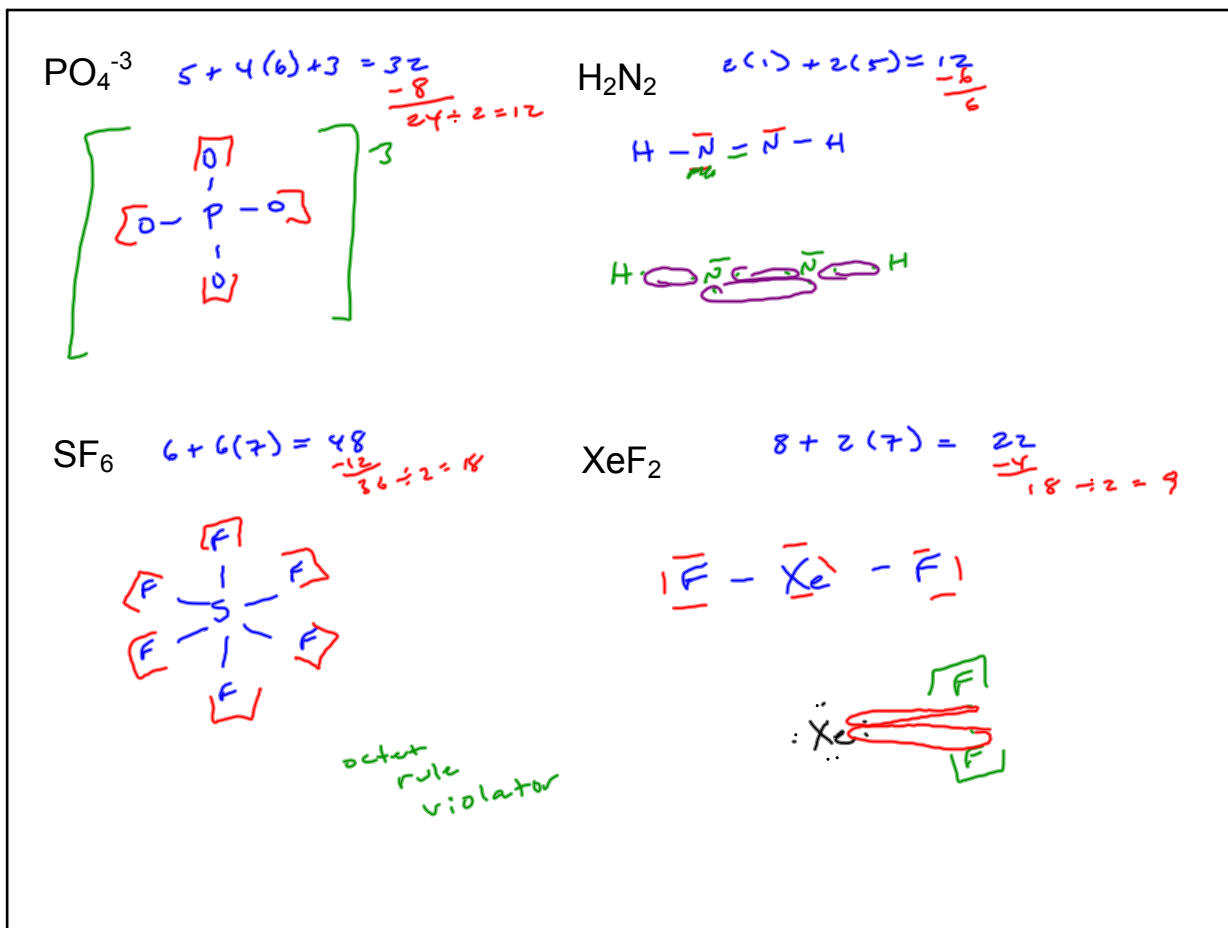
$$\begin{array}{r} -4 \\ \hline 12 \div 2 = 6 \end{array}$$



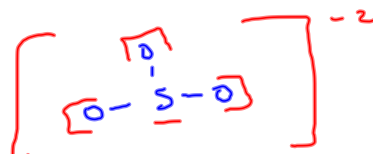
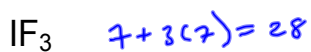
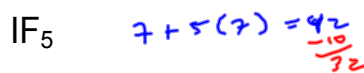
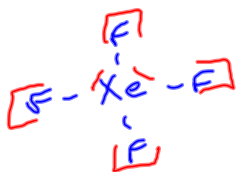
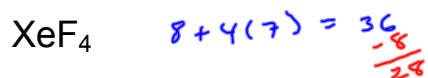
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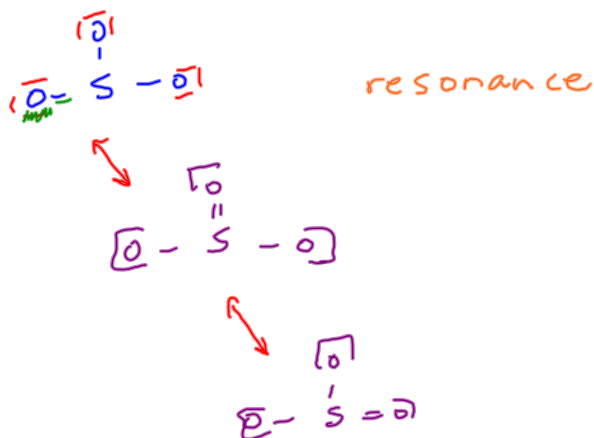
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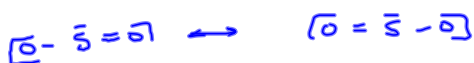


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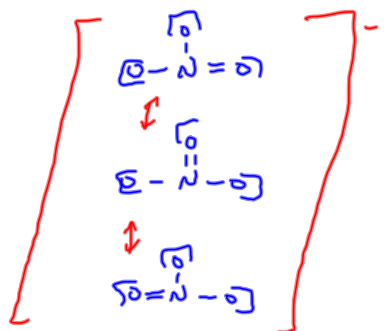


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$\text{SO}_2 \quad 6 + 2(6) = 18$



$\text{NO}_3^{-1} \quad 5 + 3(6) + 1 = 24$



$\text{C}_2\text{O}_4^{-2} \quad 2(4) + 4(6) + 2 = 34$



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$\text{NO}_2 \quad 5 + 2(6) = 17$   
 $\frac{-4}{13} \div 2 = 6.5$



free radical  
monomer



$\text{N}_2\text{O}_4$

dimer

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