

Notes 01/14

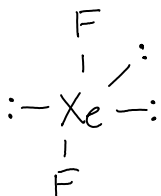
Monday, January 14, 2008
9:58 AM



Notes 0114

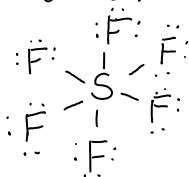
Audio recording started: 10:01 AM Monday, January 14, 2008

- Continuing from 1/11: XeF_2 $8 + 2(7) = 22e^-$



linear

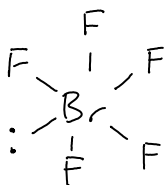
- Octahedral: SF_6 $6 + 6(7) = 48$



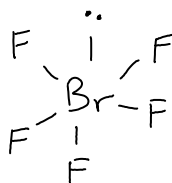
octahedral

Elements past period 3 can violate octet rule

- BrF_5

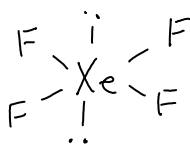


same



square pyramidal

- XeF_4

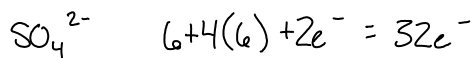


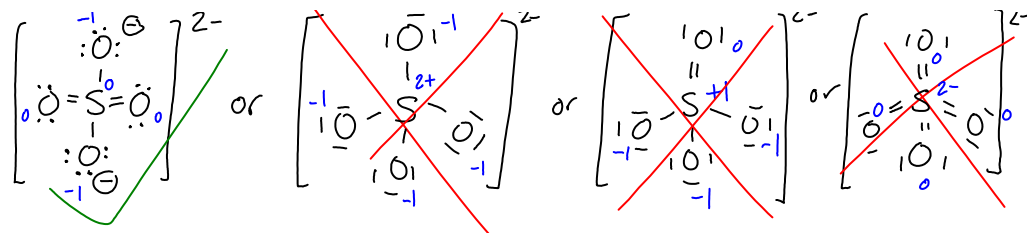
square planar

- Strategy for determining structure

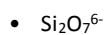
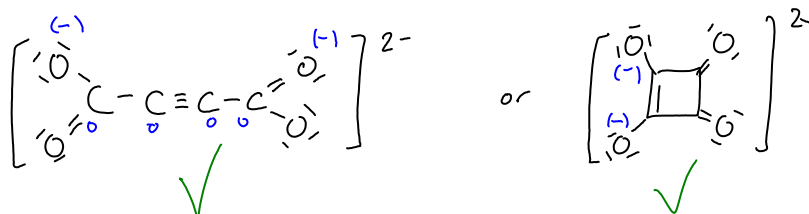
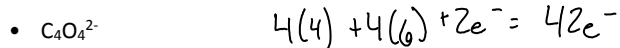
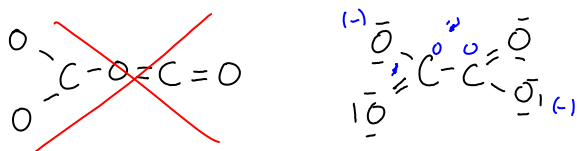
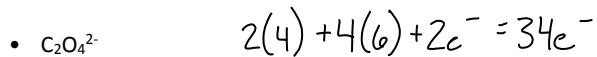
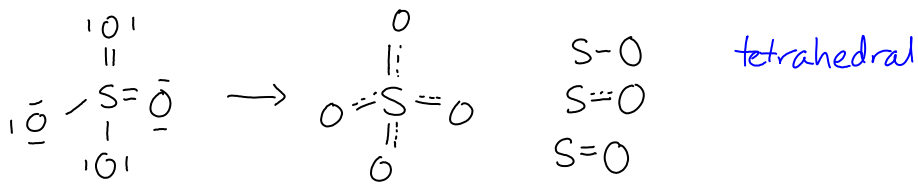
- Count total # of valence electrons
- Put the least electronegative element in center (majority of time is true). Or element you have less of
- Distribute everything around, count groups of electron domains... based on domain #, match to a parent geometry.

- There are times when two viable structures are obtained

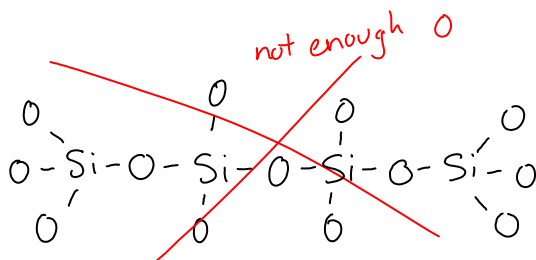
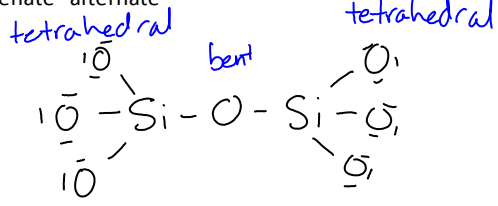


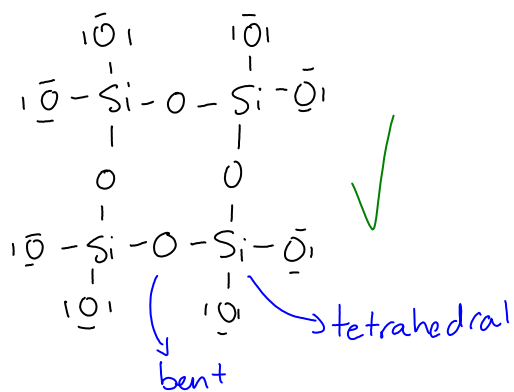


Formal charge: $1/2(\text{bonding electrons})$

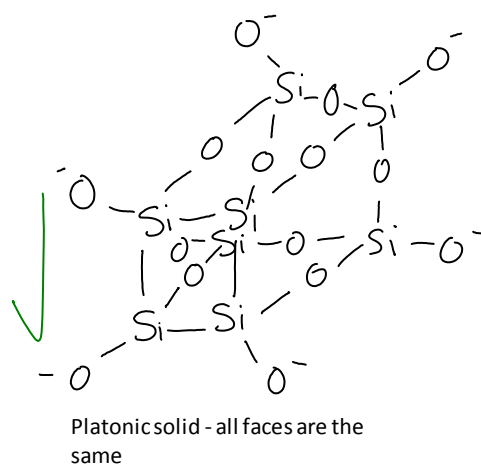
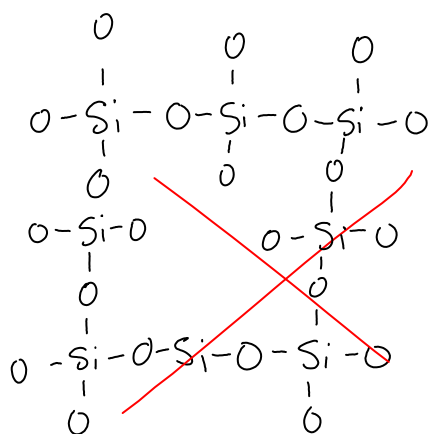


○ Catenate - alternate



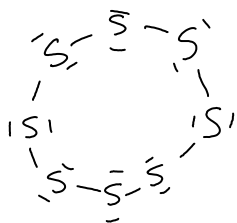


- $\text{Si}_8\text{O}_{20}^{8-}$



*hint - 8... cube is one of only shapes that has 8 corners

- S_8



Crown

