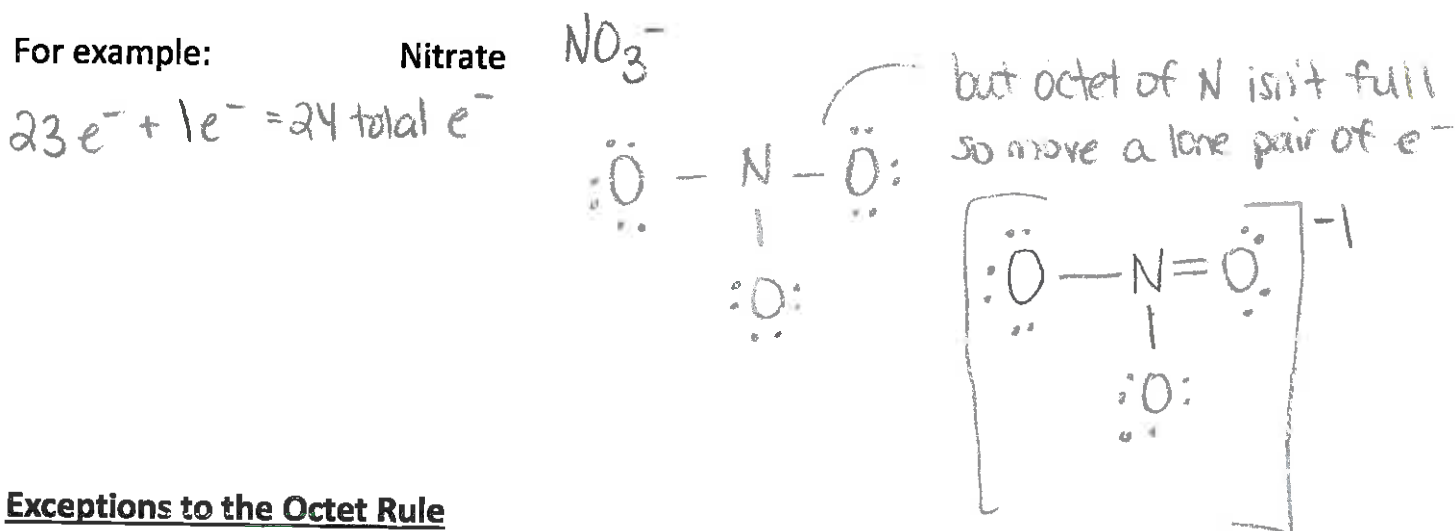
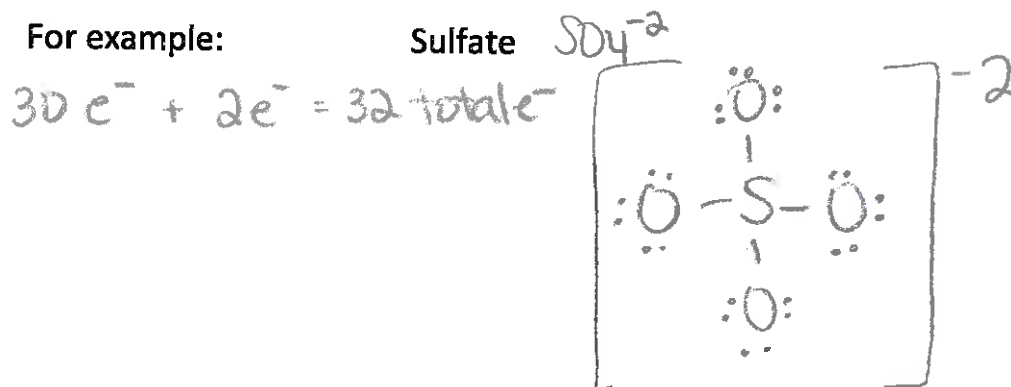


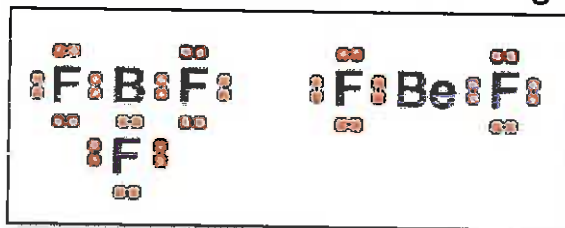
## Lewis Structures (continued)

Lewis structures can also be drawn for polyatomic ions, remembering to place square brackets around the entire structure and write the charge superscript outside the brackets.

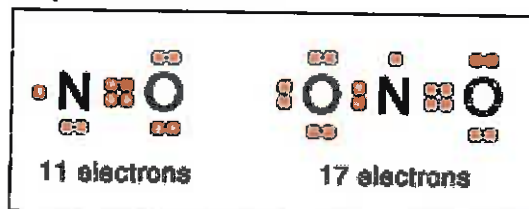


### Exceptions to the Octet Rule

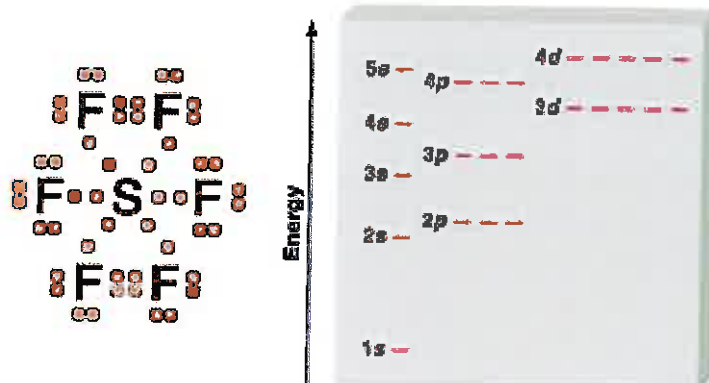
- Too few electrons - B and Be are sometimes stable in compounds with less than an octet. Be is generally satisfied with 4 valence electrons and B is generally satisfied with 6.



- Odd number of electrons - Atoms in molecules with odd numbers of electrons, such as NO and NO<sub>2</sub>, cannot satisfy the octet rule.



- Too many electrons - Elements in period 3 or higher, such as S and P, have unoccupied d orbitals which can hold up to 10 electrons beyond the 8 usually held in the valence shell.



- Coordinate covalent bonding – sometimes the covalent bond can be formed by sharing two electrons donated by a single atom, as in ammonia or aluminum chloride (Al<sub>2</sub>Cl<sub>6</sub>).

