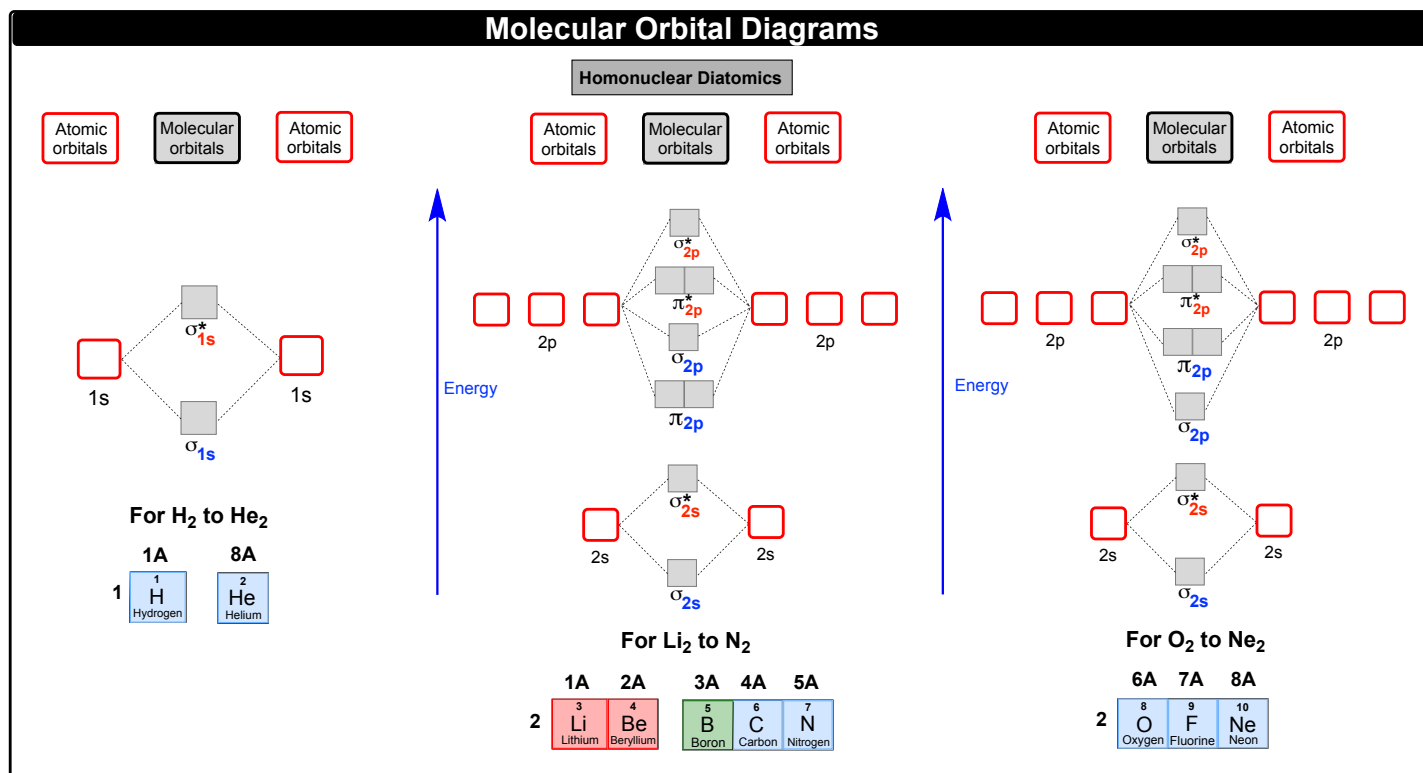


CONCEPT: MO THEORY: HOMONUCLEAR DIATOMIC MOLECULES

- Recall, a homonuclear diatomic molecule is composed of two identical elements bonded together.
 - As a result of ____ electronegativity and ____ atomic size, the order of σ_{2p} and π_{2p} will be reversed for O to Ne.



EXAMPLE: Using a Molecular Orbital (MO) diagram, write the electron configuration for the difluorine anion, F_2^- .

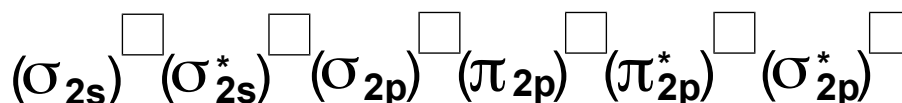
STEP 1: Determine the number of valence electrons.

STEP 2: Construct the Molecular Orbital Diagram based on the location of the valence electrons.

- Period 1 elements start with ____, Period 2 elements start with ____, Period 3 elements start with ____

STEP 3: Fill in the total number of valence electrons for each element into the molecular orbitals.

STEP 4: Fill in the MO electron configuration.



CONCEPT: MO THEORY: HOMONUCLEAR DIATOMIC MOLECULES

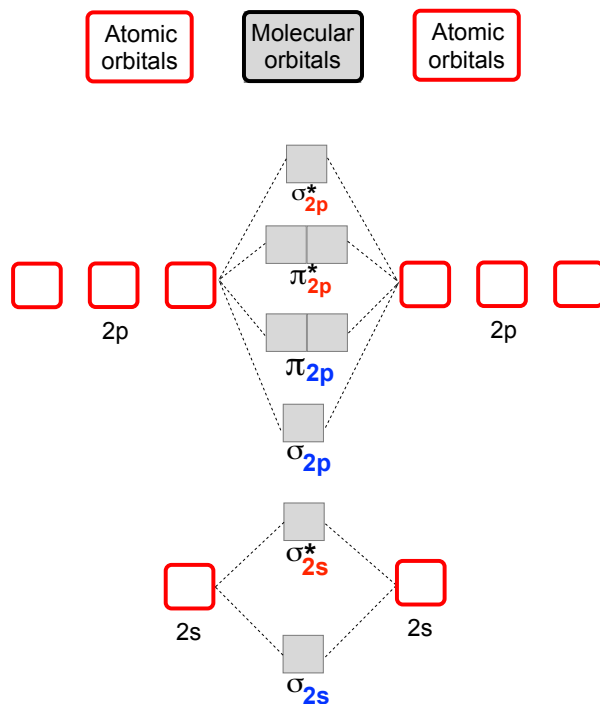
PRACTICE: Determine the number of electrons found in the π_{2p} orbitals for the dioxygen dication, O_2^{2+} .

a) 2

b) 0

c) 4

d) 3



PRACTICE: Using a MO diagram, write the electron configuration for the P_2 molecule?

a) $(\sigma_{2s})^2(\sigma_{2s}^*)^2(\pi_{2p})^4(\sigma_{2p})^2$

b) $(\sigma_{2s})^2(\sigma_{2s}^*)^2(\pi_{2p})^2(\sigma_{2p})^2(\pi_{2p}^*)^2$

c) $(\sigma_{3s})^2(\sigma_{3s}^*)^2(\pi_{3p})^4(\sigma_{3p})^2$

d) $(\sigma_{3s})^2(\sigma_{3s}^*)^2(\pi_{3p})^2(\sigma_{3p})^2(\pi_{3p}^*)^2$

