

Chem 14A Dr. Ow  
Su2021 Week 4 Quiz

1. The ground state electron configuration of the ion  $B_2^{n-}$  is  $\sigma_{2s}^2\sigma_{2s}^{*2}\pi_{2p}^3$ . What is the charge of this ion?

Boron has 3 valence electrons each, so  $B_2$  has a total of 6 valence electrons. In the MO electron configuration given, there are a total of 7 valence electrons. Therefore, the ion is **1-** charge.

2. Select all chemical species that are paramagnetic.



Use MO diagrams to see which species have at least 1 unpaired electron.

3. Select all compounds that are polar.



Draw out Lewis structure and determine molecular geometry to gauge polarities.