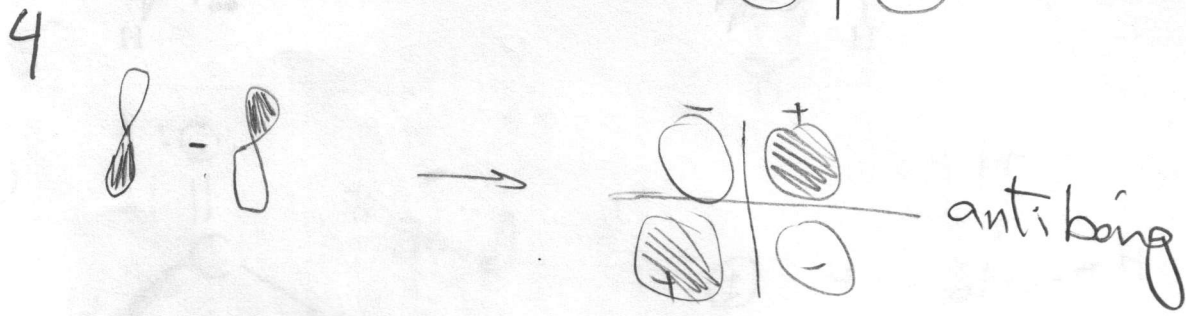
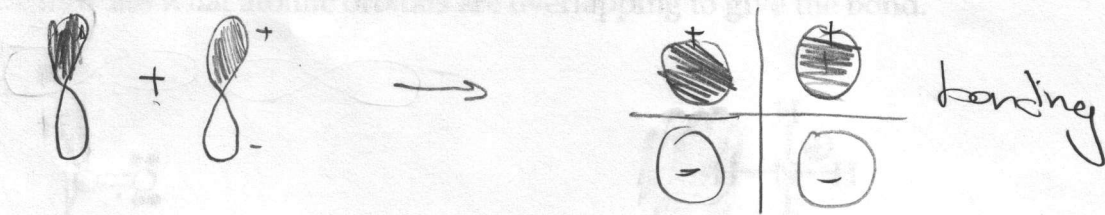


Name: nader

b. Provide drawings of the molecular orbitals which result from the LCAO in part a. Indicate any nodal surfaces and the signs of the wave functions. You may indicate regions of opposite sign by either labeling them with + or -, or by light and dark shading.



where are nodes?

a. Consider the parallel overlap of two $2p_z$ atomic orbitals, one on each atom X, to give π molecular orbitals. Provide a splitting diagram showing schematically the energies of the $2p_z$ orbitals which are being combined and the energies of the molecular orbitals formed. Label the molecular orbitals as bonding or antibonding. (Note: for this part of the question, you do not have to draw the molecular orbitals. You will do that in the next part.)

