1.

In terms of one-electron integrals *h* and two-electron integrals *J* and *K* over spatial orbitals,

what is the Hartree-Fock energy of the Be atom? For the purposes of this problem, label

your one- and two-electron integrals using subscripts corresponding to the relevant orbitals (i.e., write your answer in terms $h\_{1s}, h\_{2s}, J\_{1s,2s}, J\_{1s,2s,} and K$ terms labeled the same way as the J terms). Note that *Jij = Jji, Kij = Kji, and Jii = Kii.*

2.

What is the ground state electron configuration for the boron atom? What term symbols can arise from this electron configuration? (Include J). Which term symbol represents the ground electronic state of the system?