Problem 9, Chemistry 301X - 2006

Distort (bend) the MO's of linear HHH to make the MO's of triangular H_3. How will the energy of each MO change in forming the triangle?

You may use the MOs for HHH directly if you remember them or generate them from HH and H.

Order the new MO's in energy, and place electrons for the cation, anion, and radical.

Now do the same thing for allyl (Problem 5) - transform the MOs into the MOs for the cyclic version, called "cyclopropenyl."

Which is more stable, linear or triangular H_3^+?