Ad Hoc H$_4$ MO Problem Set
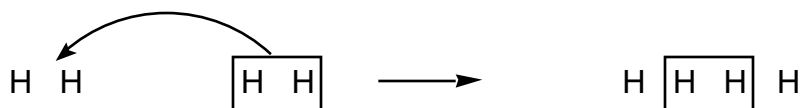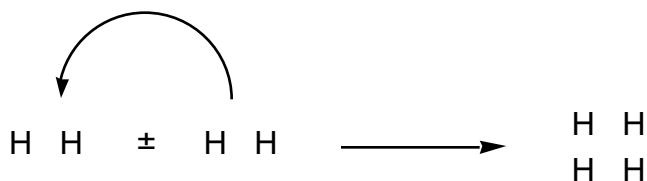
1. Constuct the MOs for linear H$_4$ as shown:

order the new MOs in energy.

2. Build the MOs for square H$_4$ by making the square directly:

3. Construct the MOs for tetrahedral H$_4$ from the MOs of square H$_4$. How do the MOs of square H$_4$ change in energy as you make the transformation? Order these new MOs in energy.

Hint: We suggest that you construct the tetrahedron by "moving" one of the lobes above the plane determined by the other three lobes: