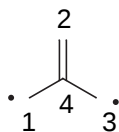


Chem 131/231A // problem set 14

1. Set up and solve the secular determinant for trimethylenemethane; it's illustrated below. Use the atom numbering system indicated by the drawing.



2. For the allyl anion:

Set up and solve the secular determinant for the eigenvalues.

Set up the secular equations. Use the eigenvalues to determine the relationships between the AO-coefficients for each MO.

Normalize each MO eigenfunction. [Normalized functions satisfy the condition:

$$\langle \psi_i | \psi_i \rangle = 1]$$