


## SHEET #2

Instructions: (Part 1) Complete the table below. The first entry has been done for you.

### 10 Unique MOs From SHEET #1

$\Psi$	$\psi_1$	sign	$\psi_2$	sketch
$\sigma_s$	2s	+	2s	
$\sigma_s^*$				
$\sigma_p$				
$\sigma_p^*$				
$\sigma_{s/p}$				
$\sigma_{s/p}^*$				
$\pi_y$				
$\pi_y^*$				
$\pi_z$				
$\pi_z^*$				

# Eliminate Redundancies

Many of the atomic orbital combinations on SHEET #1 were disallowed by symmetry. Of the 16 allowed combinations, 6 pairs are redundant in the sense that the orbitals in these pairs are phase-inverted with respect to each other (i.e., they have the opposite sign everywhere). Crossing off the 6 redundant orbitals on SHEET #1 (one from each redundant pair) leaves us with 10 unique MOs. Copy the 10 unique orbitals into the table on SHEET #2.

