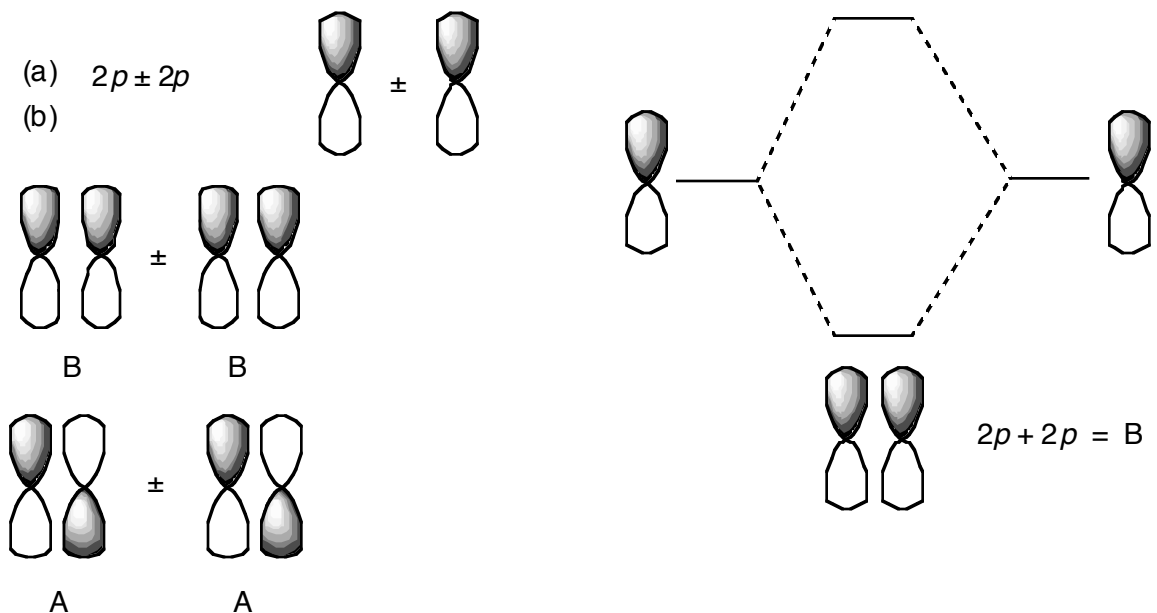


# Answers to Problem 4, 2006

(a)  $2p \pm 2p$

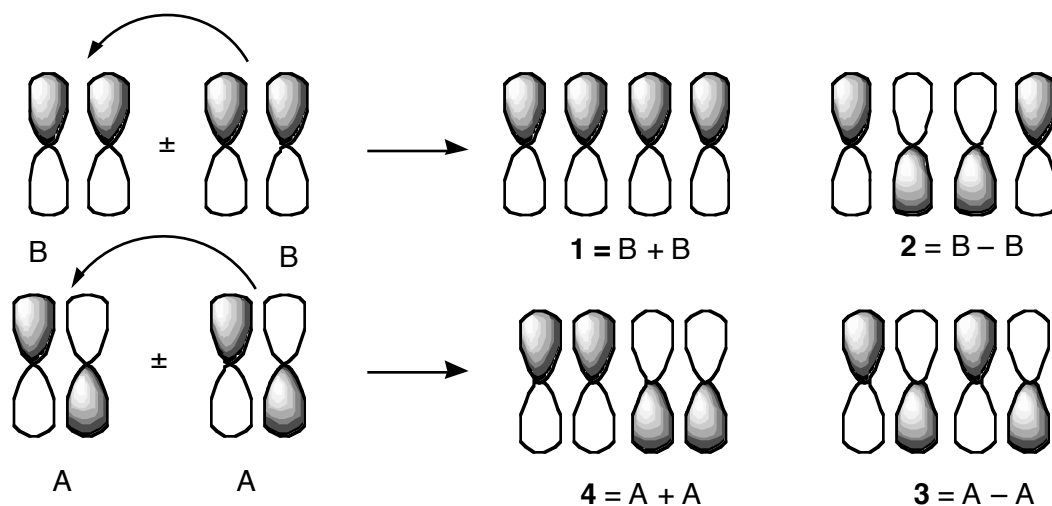
(b)



We interact  $B \pm B$  and  $A \pm A$

For two reasons we need not examine  $B \pm A$ .

1. all such interactions are "net zero"
2. at this level of "theory" we need only interact the orbitals closest in energy ( $B \pm B$ ,  $A \pm A$ )



order in energy  
by counting  
new nodes:

- 3 three new nodes
- 2 two new nodes
- 4 one new node
- 1 no new nodes