

Problem 15, Chemistry 301X - 2006

- a. Make super-clear “stick” or “line” drawings of staggered and eclipsed ethane.
- b. Make super-clear Newman projections of staggered and eclipsed ethane.
- c. Which is better (lower energy)? Why? I’ll bet you give a sensible, but wrong answer. We’ll deal with the right answer, which you NEVER see in books, in the next problem.

In preparation:

- d. Make a MO diagram showing the two orbitals involving the C-H bonds,  $sp^3 + 1s$  and  $sp^3 - 1s$  ( $\sigma$  and  $\sigma^*$ )