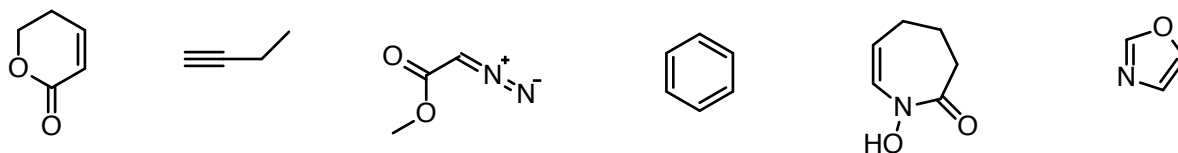


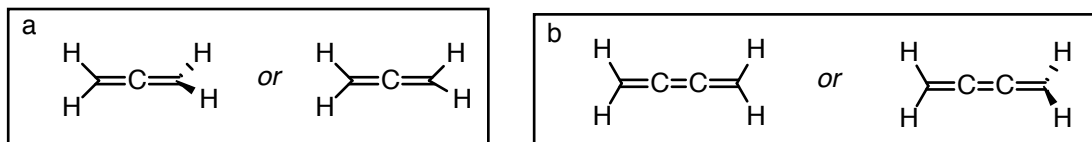
## Worksheet 2: Hybridization and Stereochemistry

**Skill-Building Goals:** Become comfortable drawing molecules in 3D and recognizing similarities and differences between stereoisomers

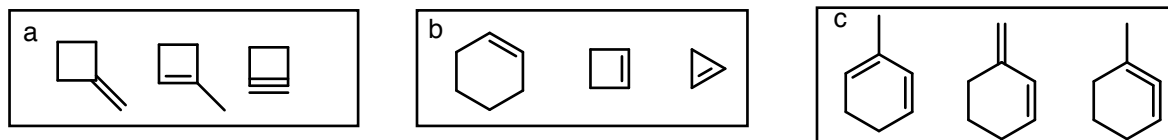
1. Refer to the following molecules. Show all of the pi bonds using the p orbitals. How many atoms for each one are sp<sup>3</sup> hybridized? sp<sup>2</sup>? sp? Identify them.



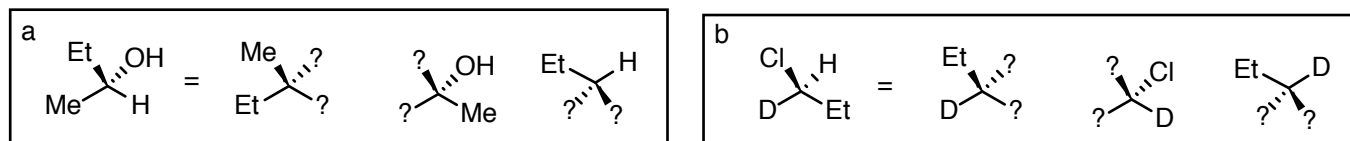
2. Look at each set of allenes and determine which 3D structure is correct. Draw in the pi bonds using the p orbitals that help explain that.



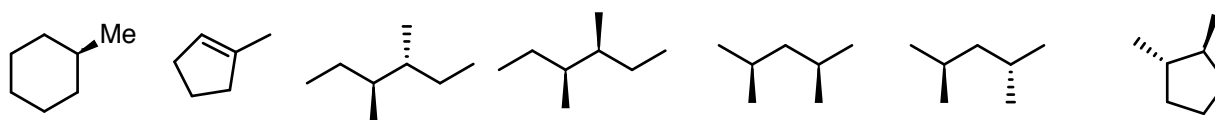
3. Rank the following in order of stability. Explain your reasoning.



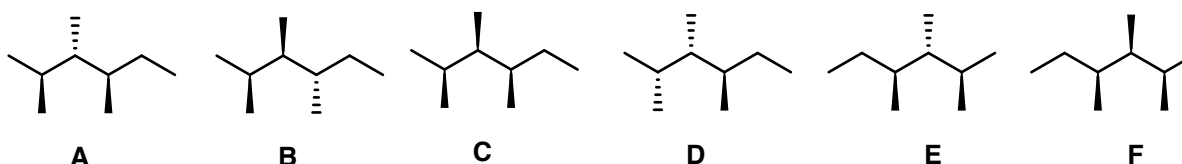
4. Is the stereochemistry of the molecule shown (R) or (S)? Fill in the blanks to help redraw the molecule. Then check the (R) and/or (S) designation to make sure it is correct.



5. Are the following molecules chiral or achiral? If achiral, are they meso?



6. What are the relationships between each of the following molecules? Options are constitutional isomer, diastereomer, enantiomer, or identical



A					
B					
C					
D					
E					
F					