

CHE 310 – 002 & 003
Lecture Homework #32

Due: Monday, April 15, 2019, 10:00 am.

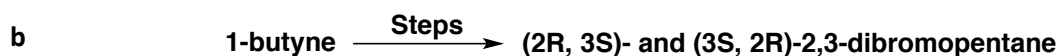
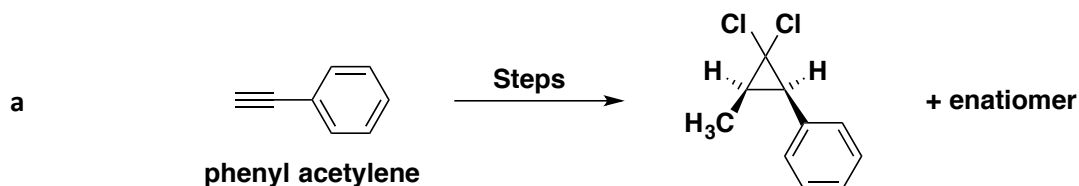
1. Provide the major product(s). Clearly indicate the stereochemistry in your structures where appropriate. Where more than one stereoisomer is formed you only need to draw one of the stereoisomeric products. Other stereoisomers should be indicated by writing, “+ *enantiomer*” or “+ *diastereomer*”, as appropriate. Check the boxes on the right to indicate whether the reaction product solution would be optically active ($[\alpha]_D \neq 0$) or not optically active ($[\alpha]_D = 0$). Under the check boxes indicate why that box was chosen (possible answers are single enantiomer, diastereomers, racemic, meso and achiral)



3. **Multiple Step Synthesis:** Using the starting material given, propose a synthetic route for each molecule below. For full credit you must show:
- All reagents for each step.
 - The structure of all compounds that would be isolated (*not intermediates*).
 - *Do not show mechanisms.*

Hint: There are three steps to each synthesis in the order listed below. The steps are always in the same order for this kind of synthesis.

- 1) alkylation (a. base; b. alkyl halide)
- 2) reduction (either H_2 / Lindlar or dissolving metal)
- 3) electrophilic addition or oxidation of the double bond



3. Go to the chemistry match game and select 1-methylcyclohexene and pKa's. Study the pairs for a couple of minutes before you begin to refresh yourself with the reactions you already know and familiarize yourself with those you will be learning very soon. Play the match game for 1-methylcyclohexene and pKa's at least five minutes and five attempts each. To make best use of the learning opportunity I encourage you to play on a tablet or computer, not a phone.

<https://www.nku.edu/~russellk/demo/login.php>