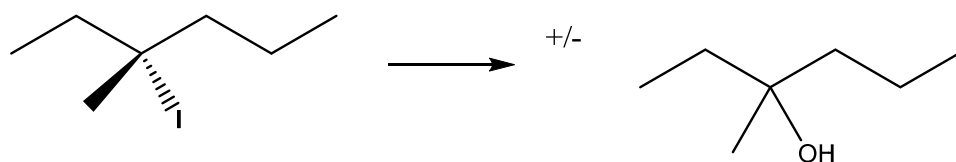
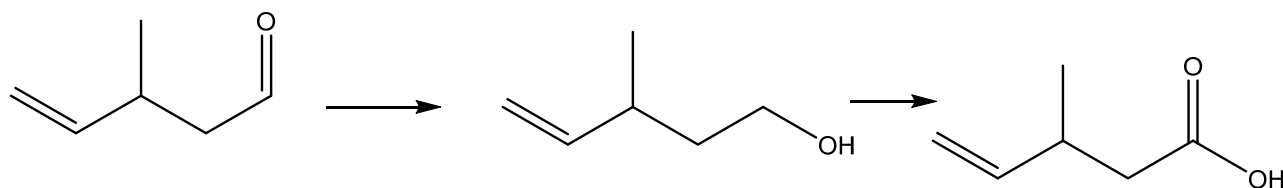
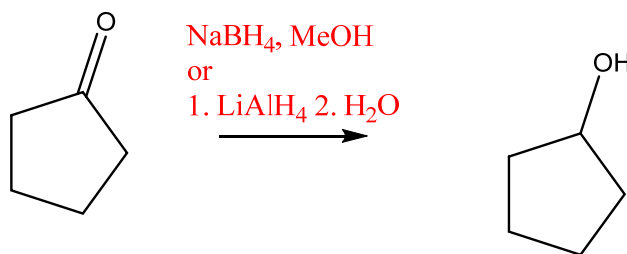
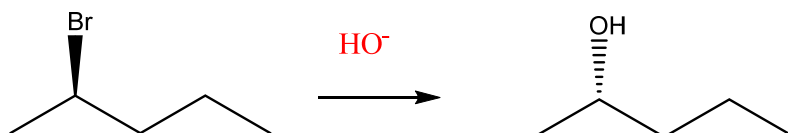


Partial Answers Discussion Worksheet #8
Formation of Alcohols

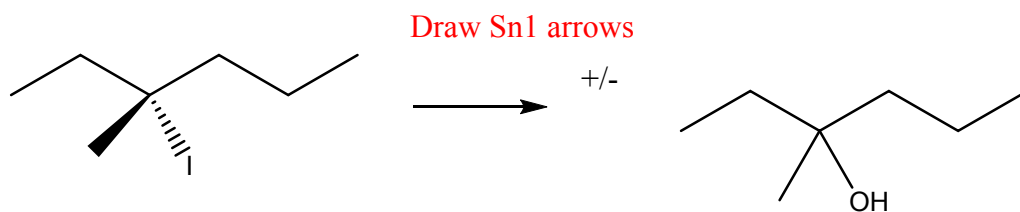
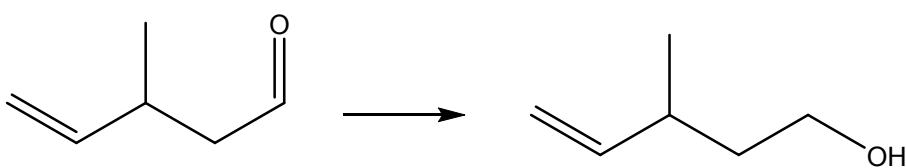
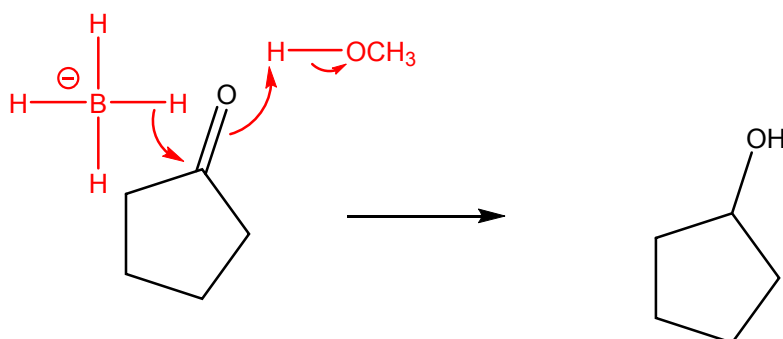
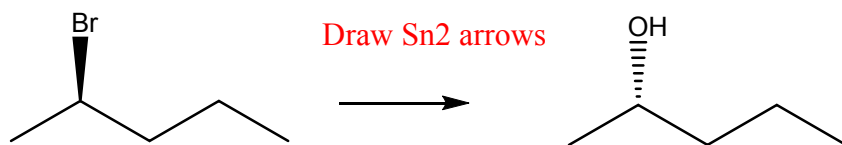
Skill 1: Functional group transformations for alcohols

- Alcohols can be made through substitution or reduction
- Alcohols can be oxidized to aldehydes and ketones

Problem 1: Provide the reagents necessary for formation of these alcohols.



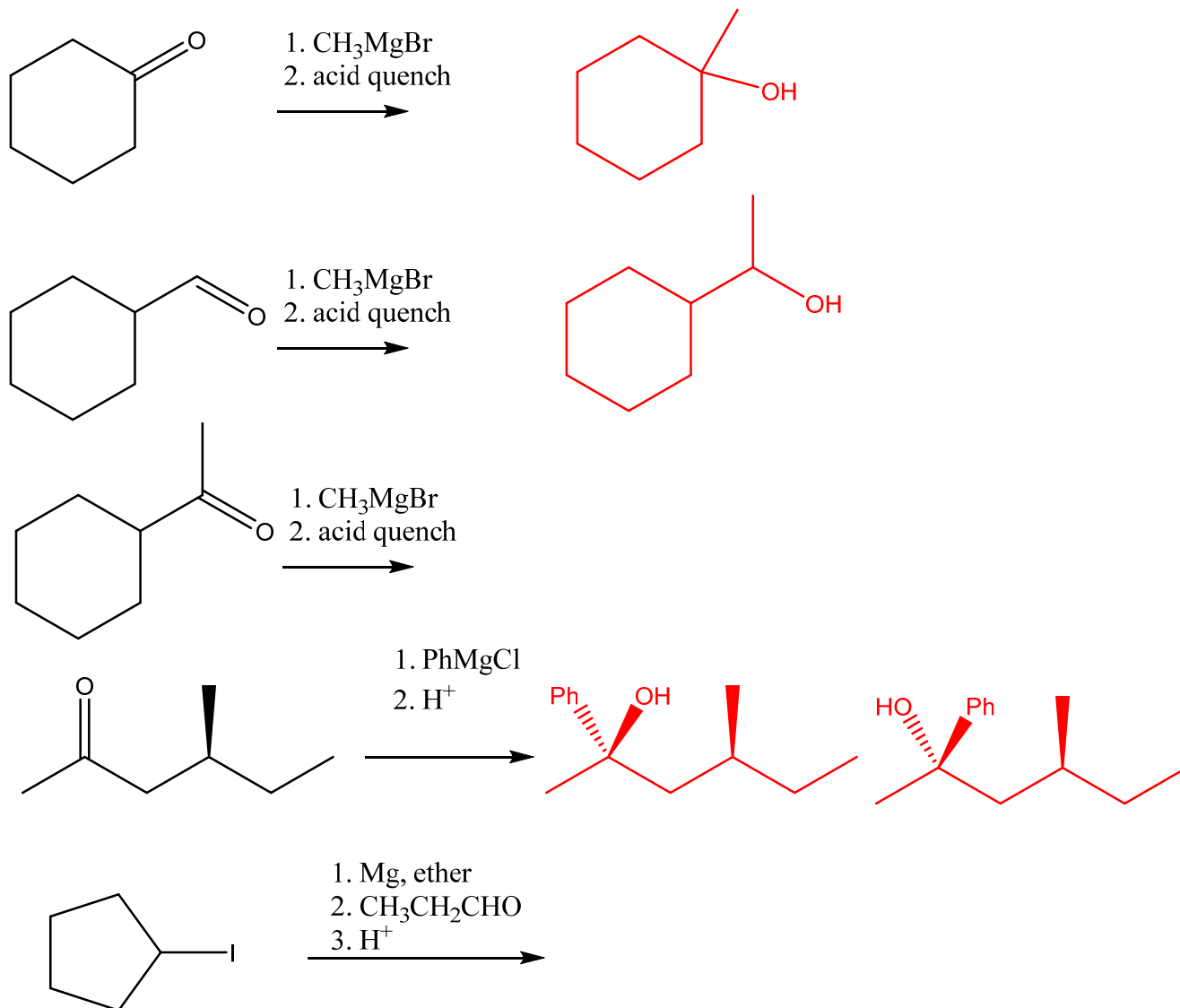
Problem 2. Provide a mechanism for each of these reactions based on the reagents from problem 1.



Skill 2: Predict the products of Grignard reactions

- Reaction of Grignard with an aldehyde (except formaldehyde) leads to a secondary alcohol
- Reaction of a Grignard with a ketone gives a tertiary alcohol
- Grignard reagents react with esters twice to form tertiary alcohols

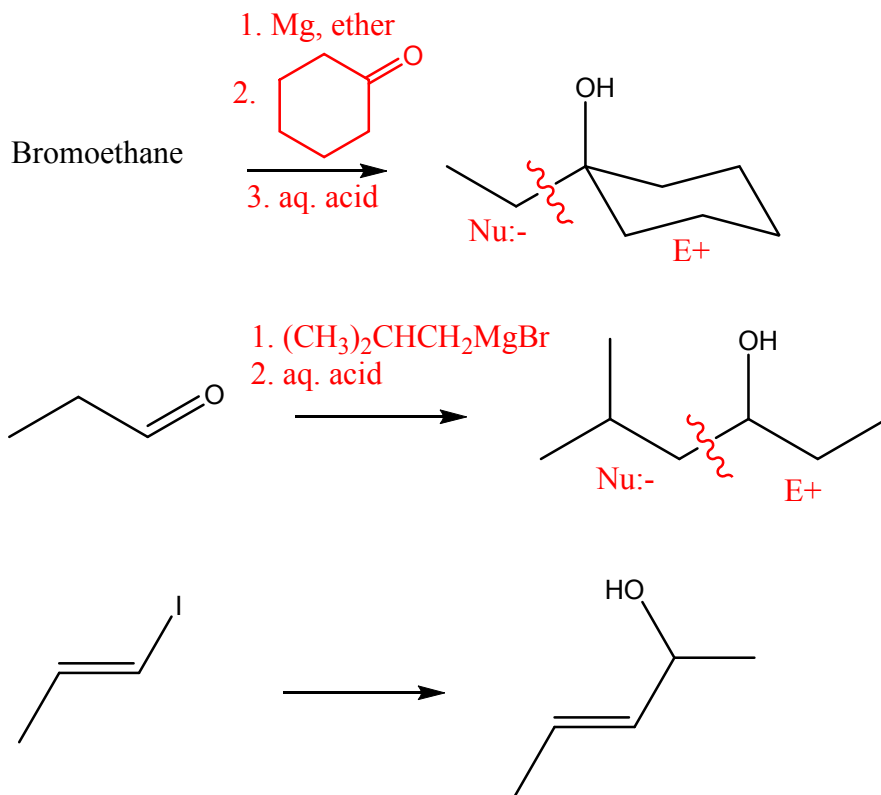
Problem 3: Predict the products of each Grignard reaction. Include stereochemistry where necessary.



Skill 3: Grignard in retrosynthesis

- Plan a Grignard retrosynthesis if you need to make a carbon-carbon bond next to a hydroxyl group--Retrosynthesis

Problem 4: Provide the necessary reagents



Problem 5. Plan two alternative syntheses involving Grignard reagents for each of these compounds. If two syntheses are not possible, explain.

only 1 possibility

