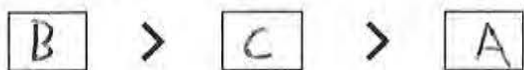
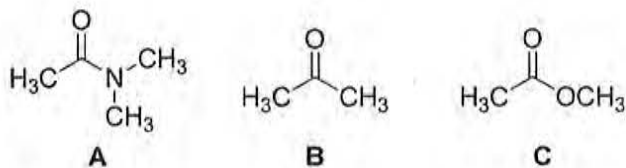


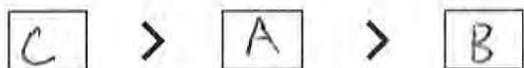
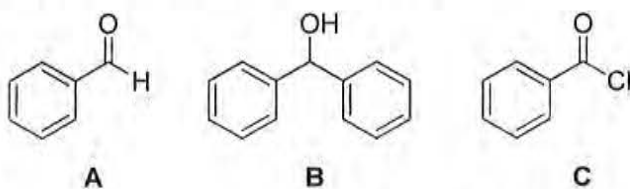
Worksheet 2

1. Rank the following compounds:

a. Fastest to slowest reaction with PhLi:



b. Highest to lowest oxidation state:



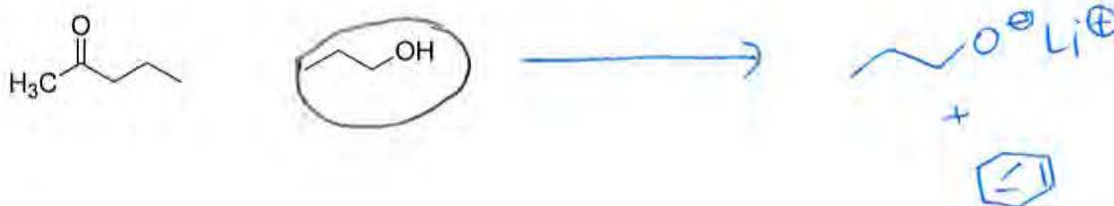
c. Circle the nucleophile that reacts faster with an aldehyde:



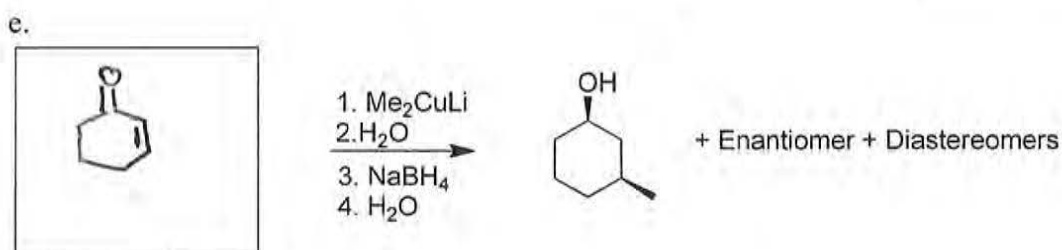
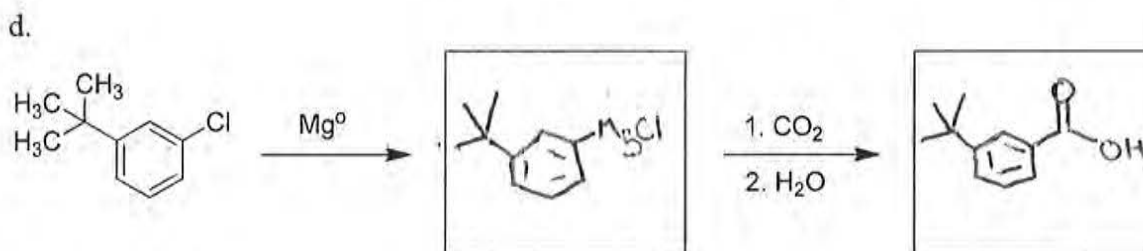
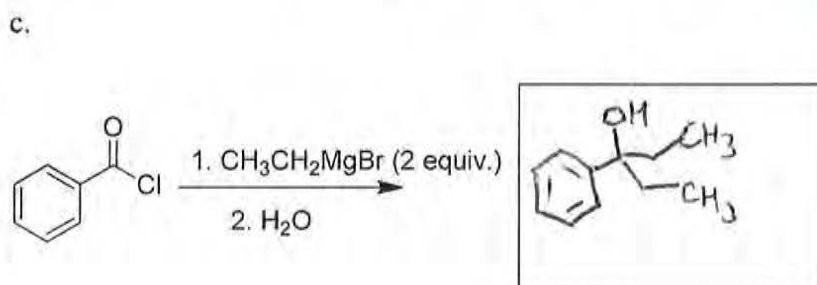
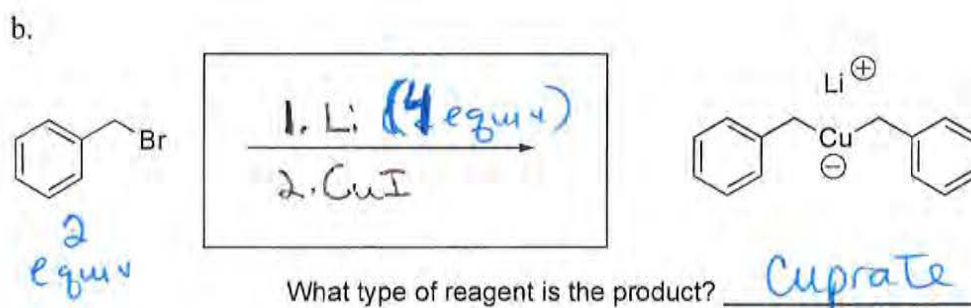
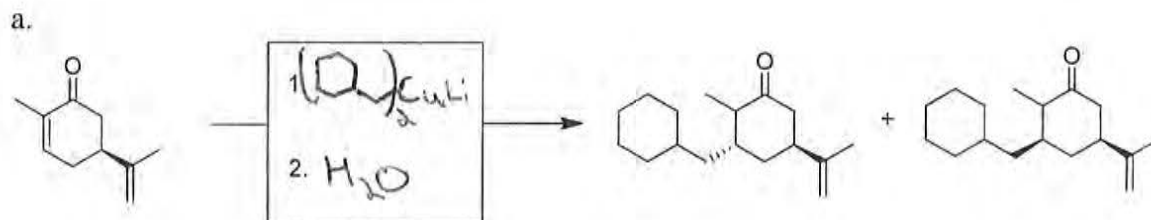
vs.



d. Which reacts faster with PhLi

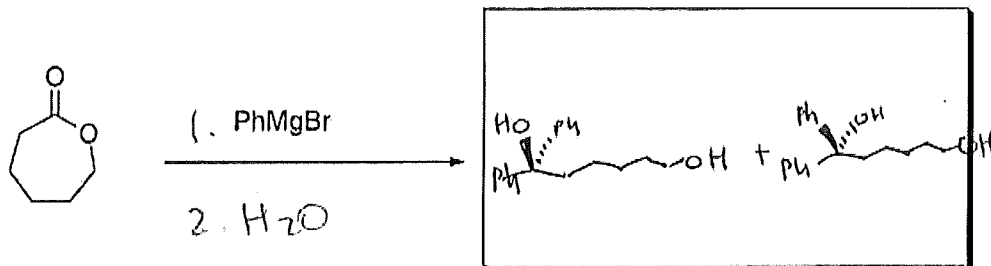


2. Fill in the boxes with the appropriate starting material, reagent or major product. Show stereochemistry where appropriate.

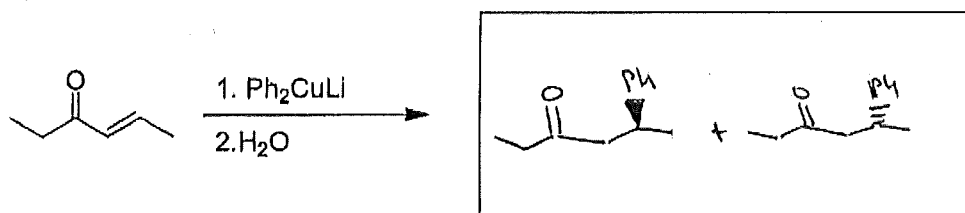


3. Predict the product and provide an arrow-pushing mechanism.

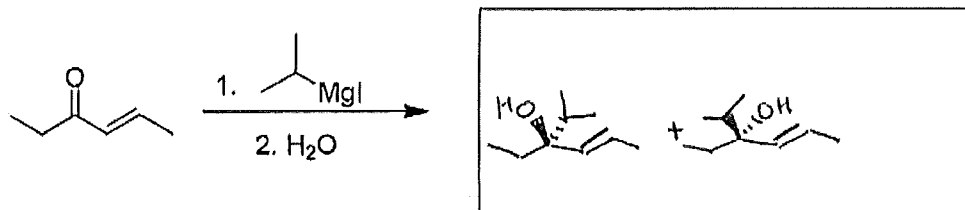
a.



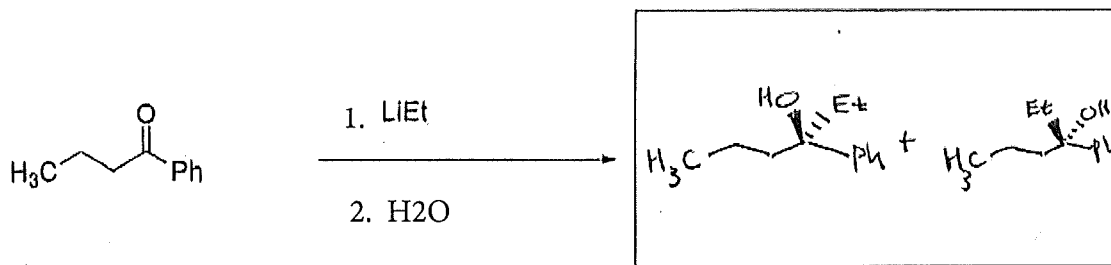
b.



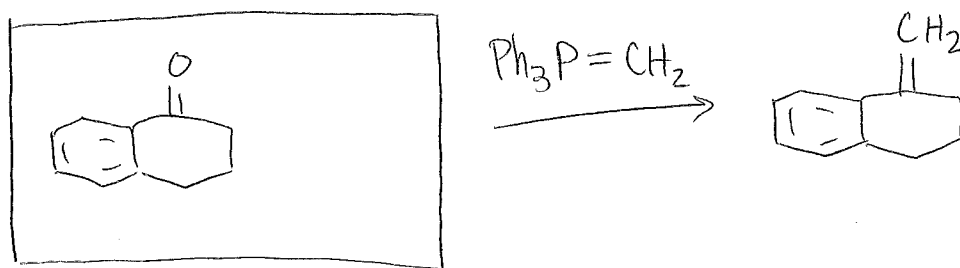
c.

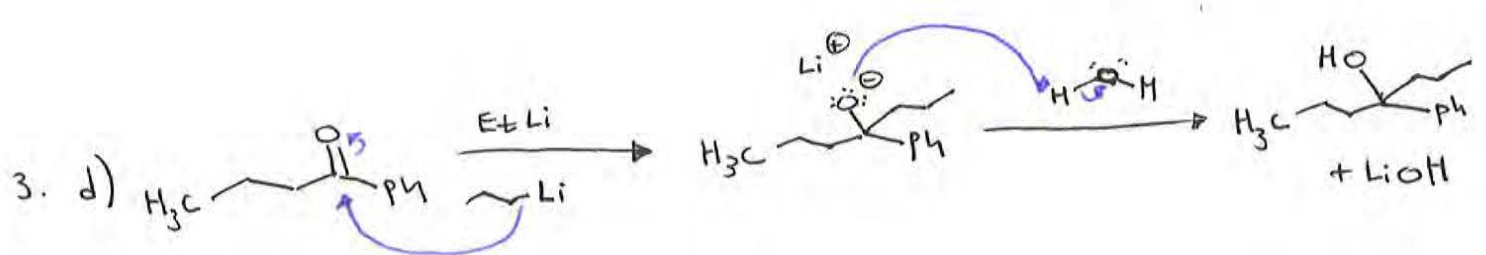
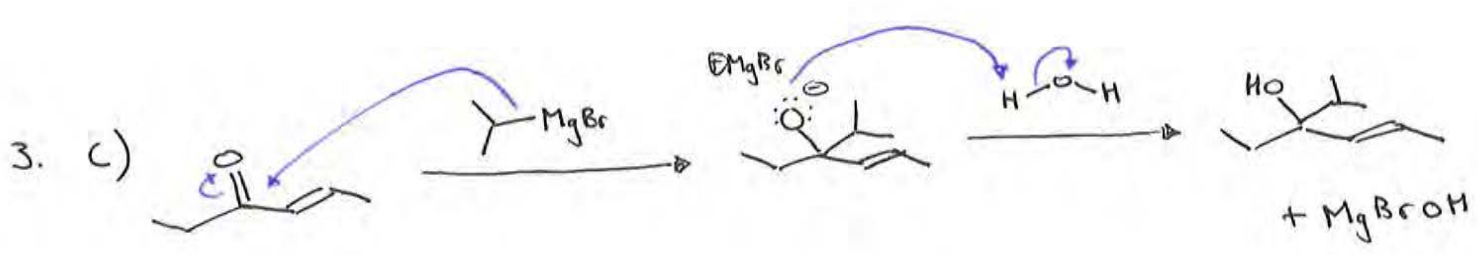
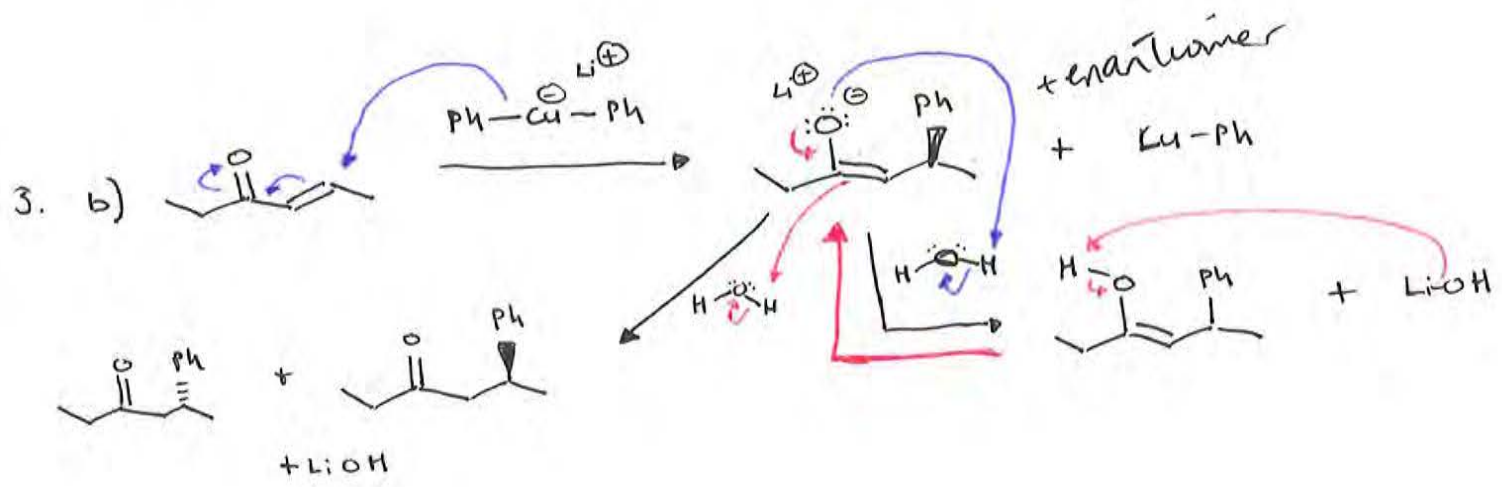
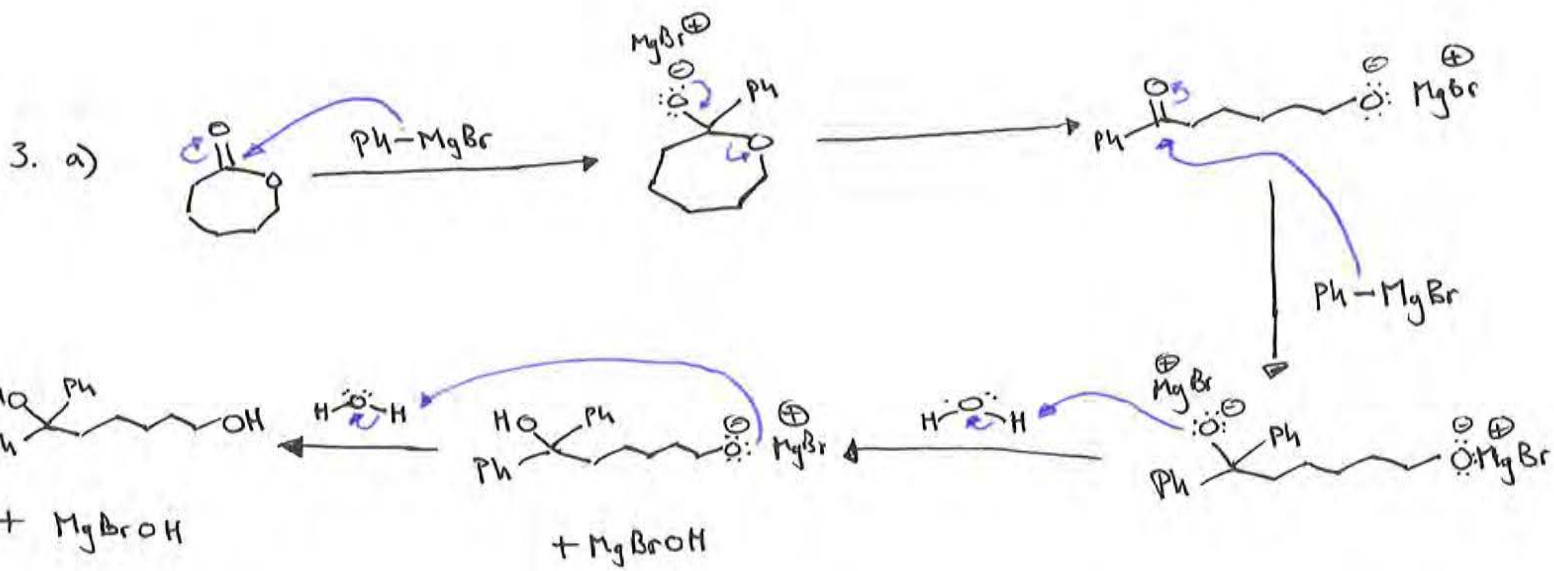


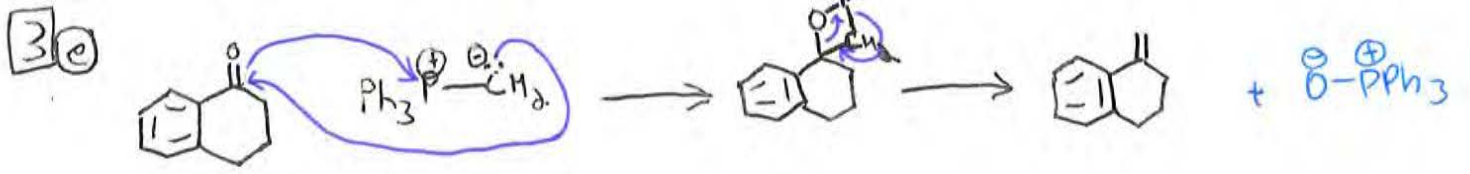
d.



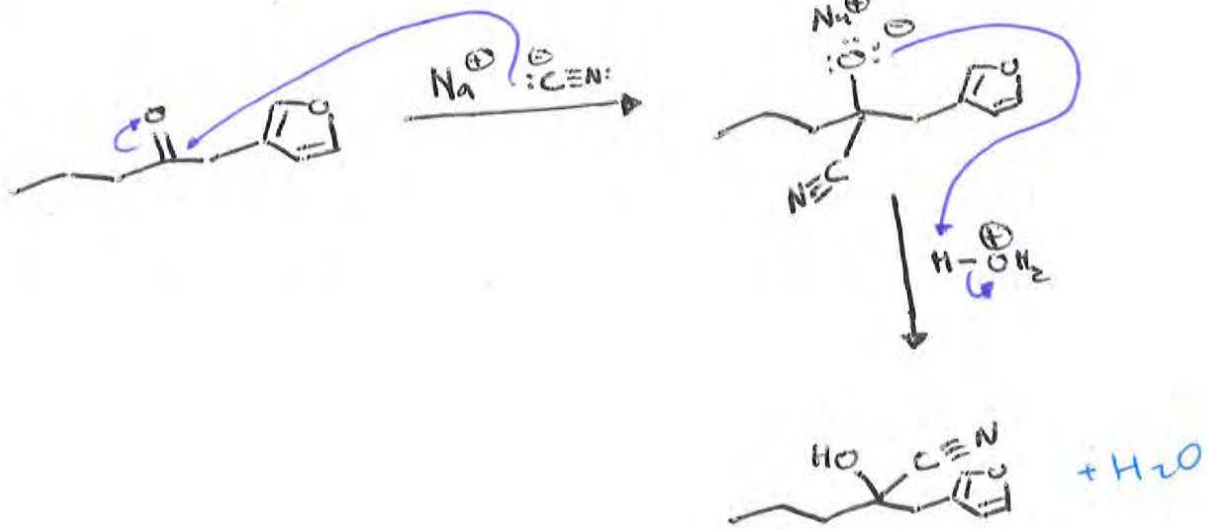
e.



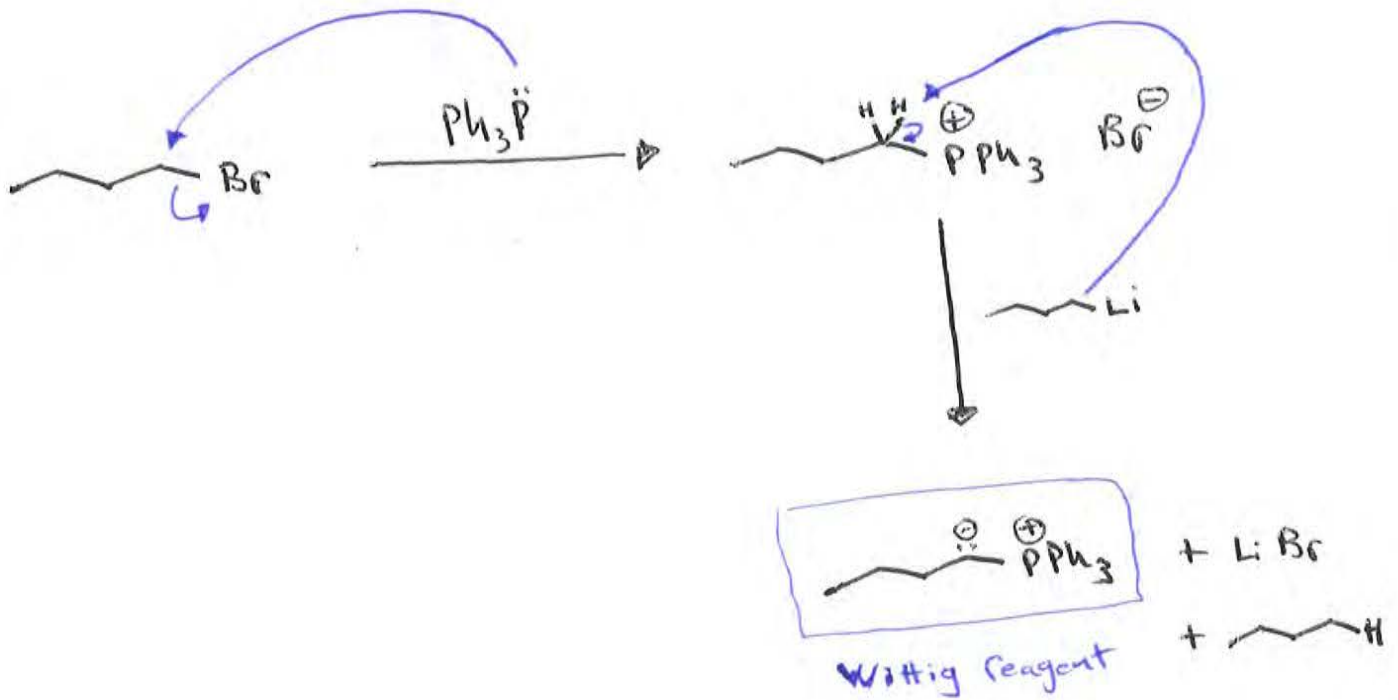




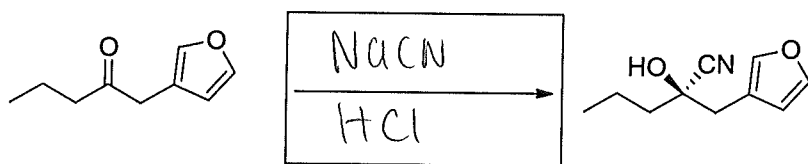
3. f)



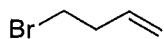
4. b)



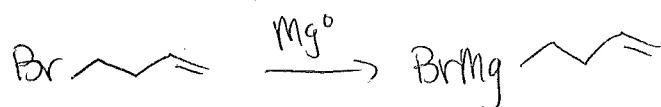
f.



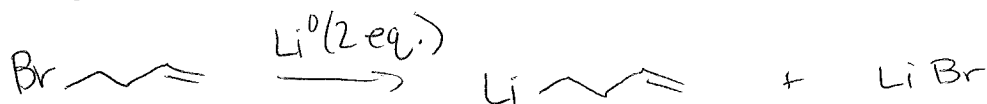
4. a. Propose syntheses of Grignard, alkyl lithium, and cuprate reagents from the following alkyl bromide.



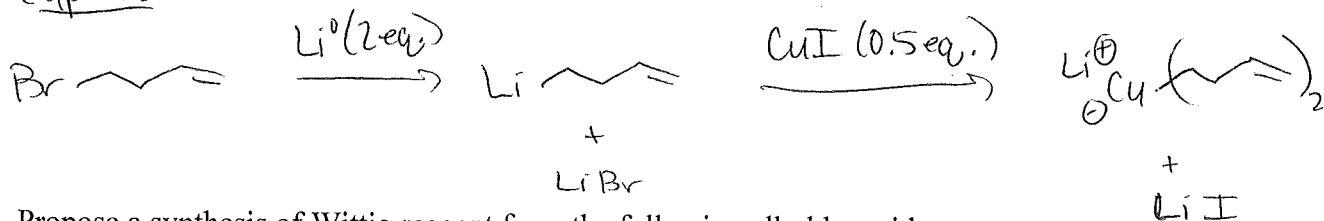
Grignard:



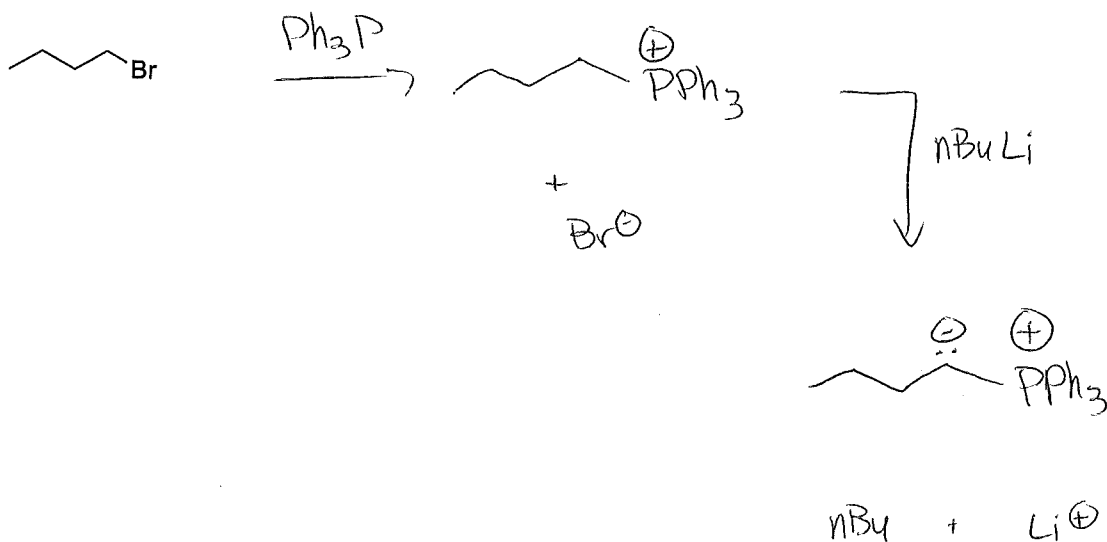
Alkyl lithium:



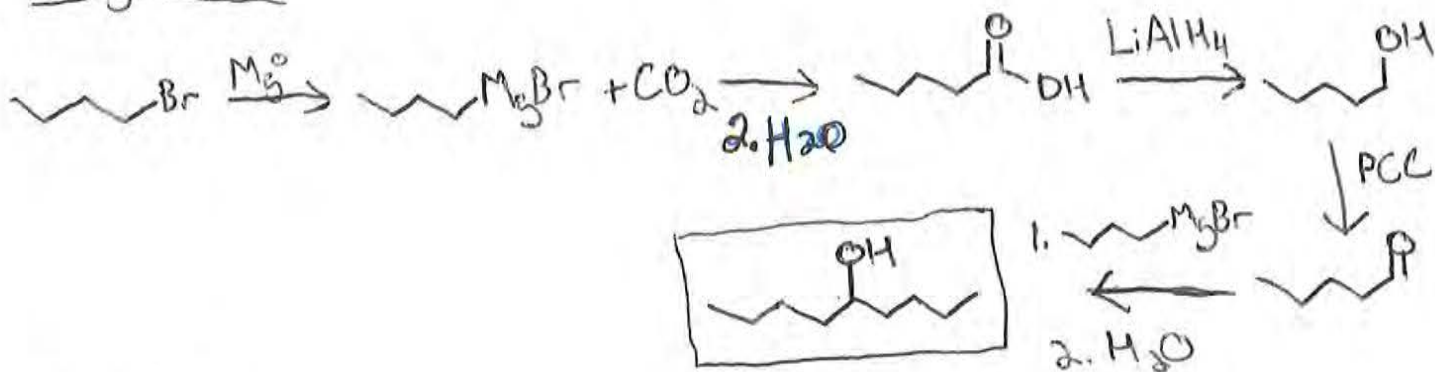
Cuprate:



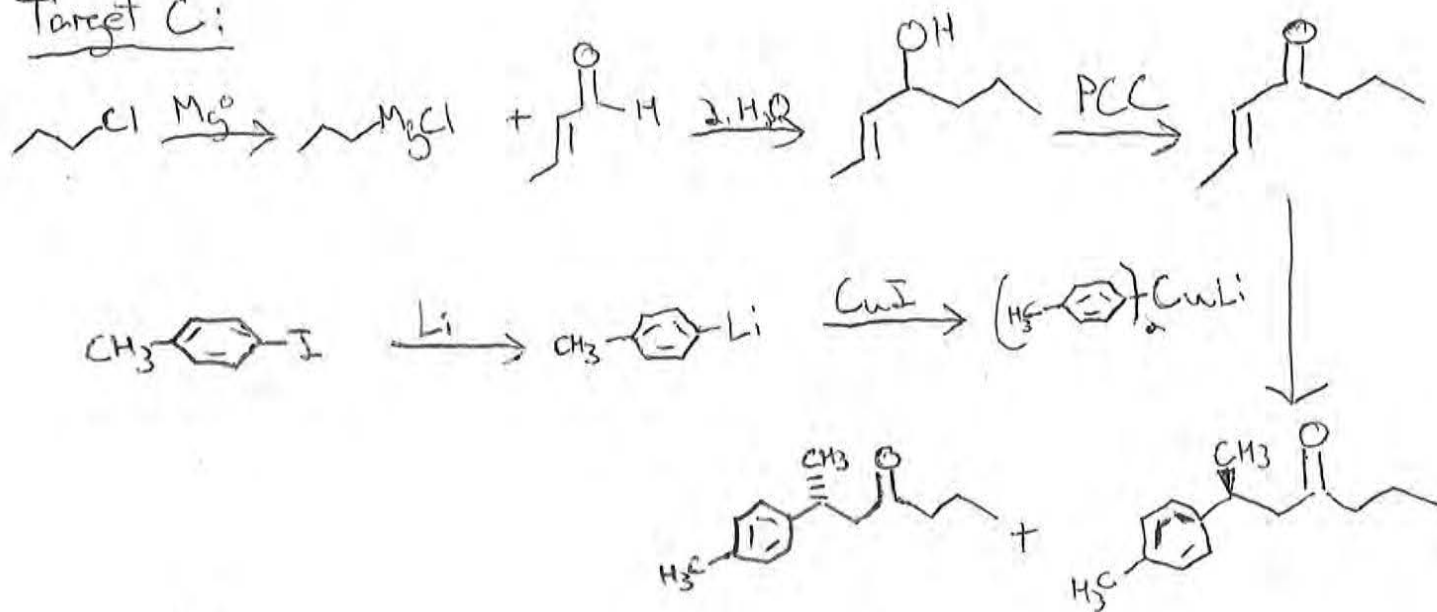
- b. Propose a synthesis of Wittig reagent from the following alkyl bromide:



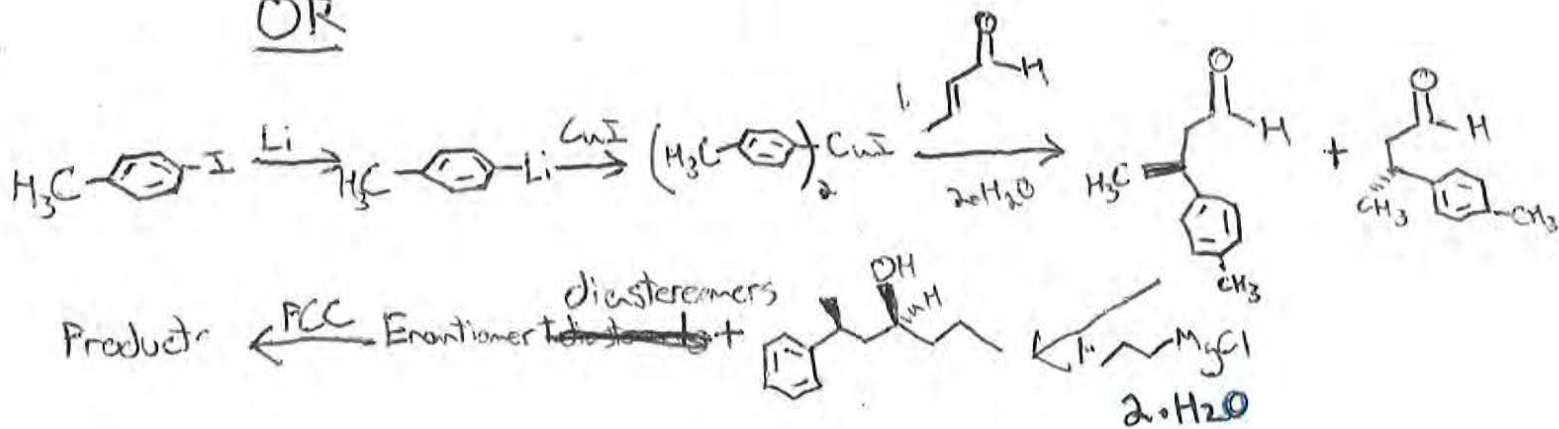
⑤ Target A:



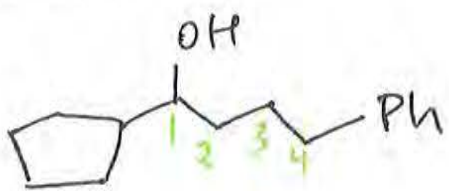
Target C:



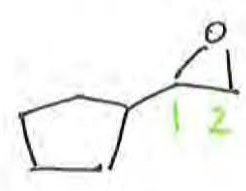
OR



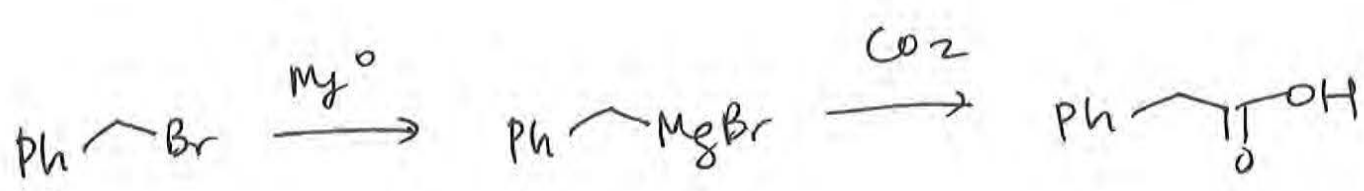
Target B:



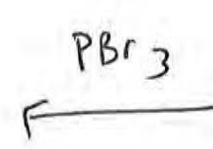
\Rightarrow



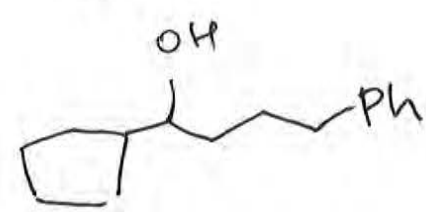
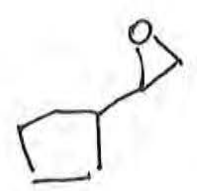
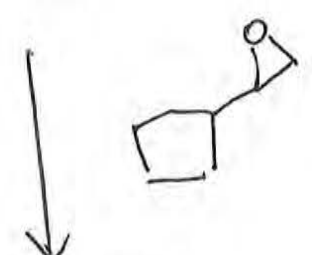
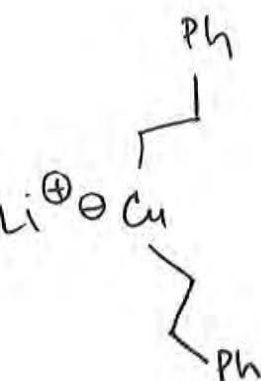
³ CO₂



\downarrow LiAlH₄
 (forcing)



1. 2 Li⁺
~~2. CuI~~
 2. CuI



Note: a better way that we've chemistry from Ch 22:

