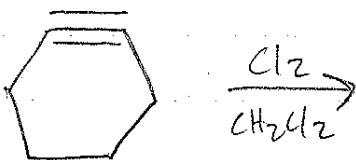
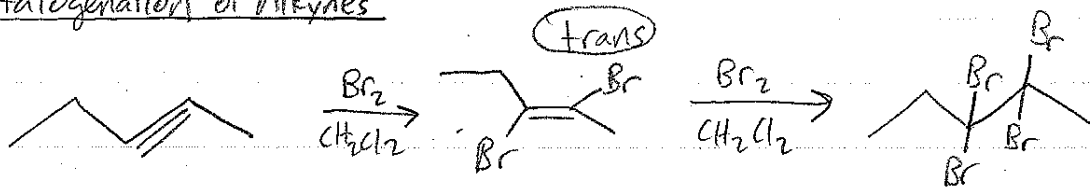
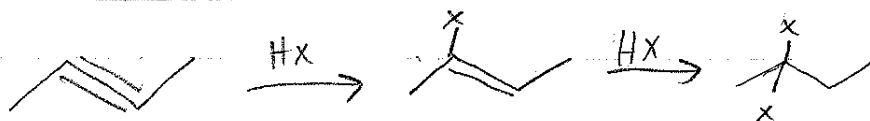
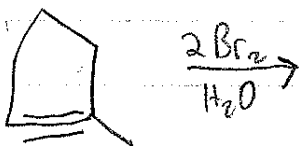
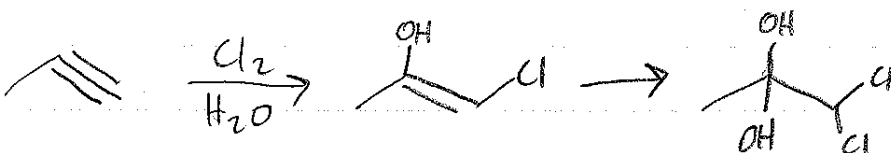
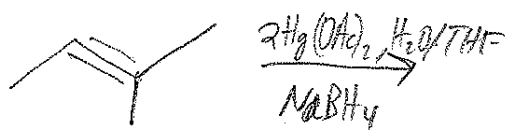
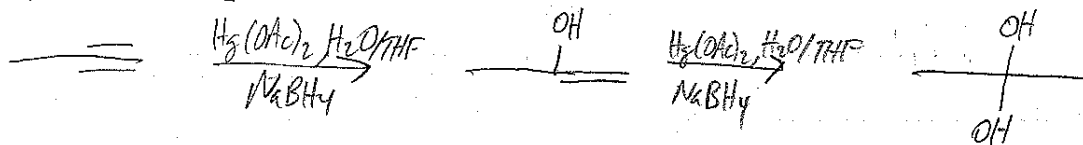
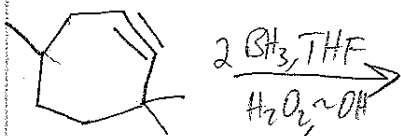
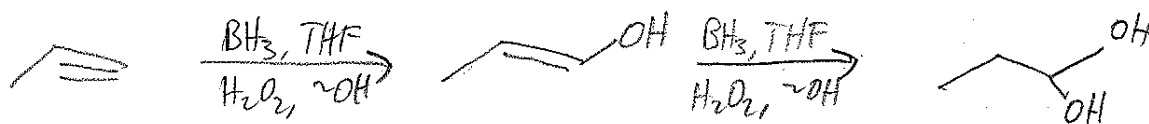


Halogenation of AlkynesHX Addition to AlkynesHalohydrin Formation of Alkynes

Oxymercuration



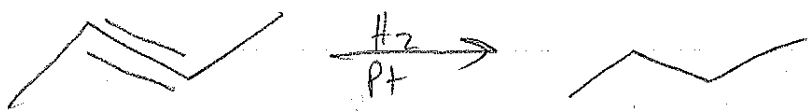
Hydroboration



Reduction

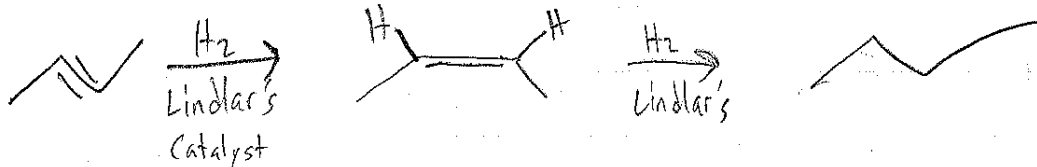
Hydrogenation of Alkynes

- Reduces triple bond straight to single bond



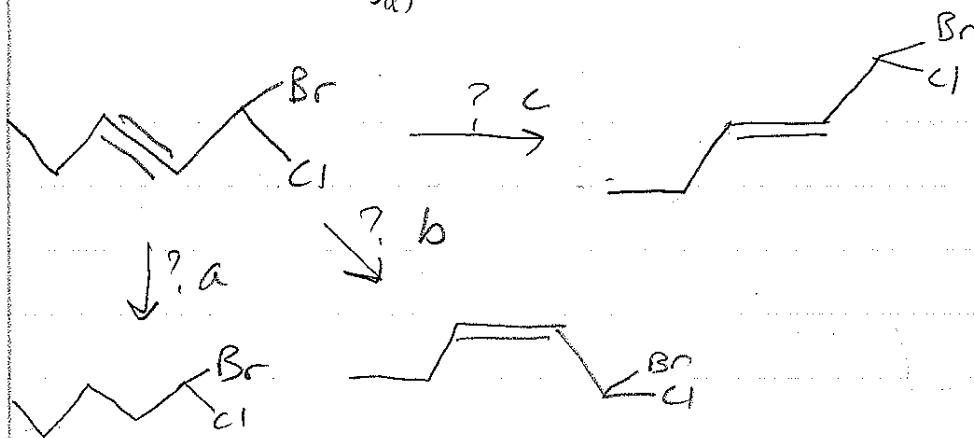
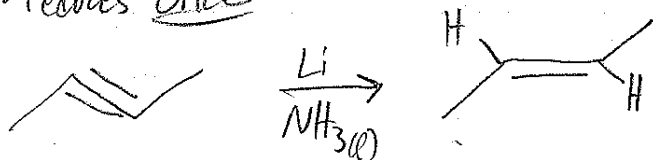
Lindlar's Catalyst

(cis)



Li/NH₃ Reduction

- trans addition of hydrogen
- reduces once



Keto-Enol Tautomerization

- Keto form is preferred (more stable)

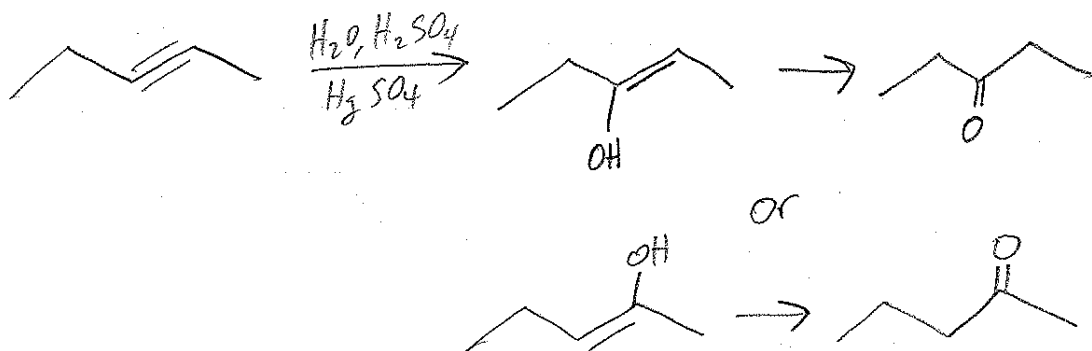


C=C with an adjacent ~OH

Look back at oxymercuration + hydroboration + determine the products again!

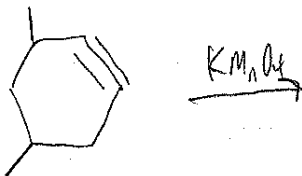
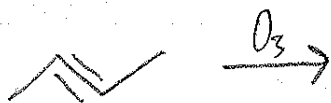
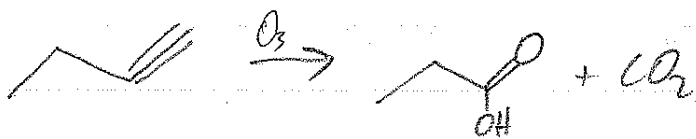
Hg(II) Catalyzed Hydration of Alkynes

- Cannot do acid-catalyzed hydration on alkynes \rightarrow need HgSO_4
- Markovnikov
- Enol to ketone



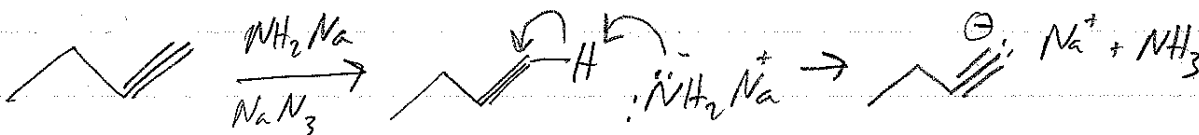
Oxidative Cleavage

- Internal Alkyne \rightarrow 2 COOH
- Terminal Alkyne \rightarrow $\text{COOH} + \text{CO}_2$

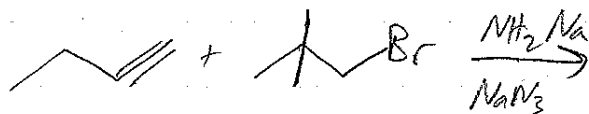
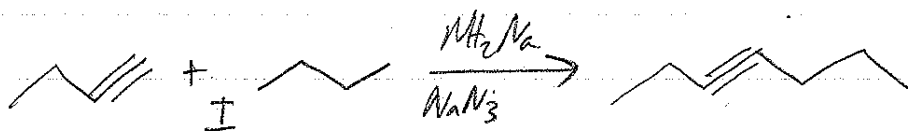


Acetylide Anion Formation

• Allows addition of triple bonds to compounds



• Now you can add this to a primary (1°) alkyl halide (Br or I only)
— reacting with 2° or 3° alkyl halides converts the alkyl halide to an alkene



Roadmaps

