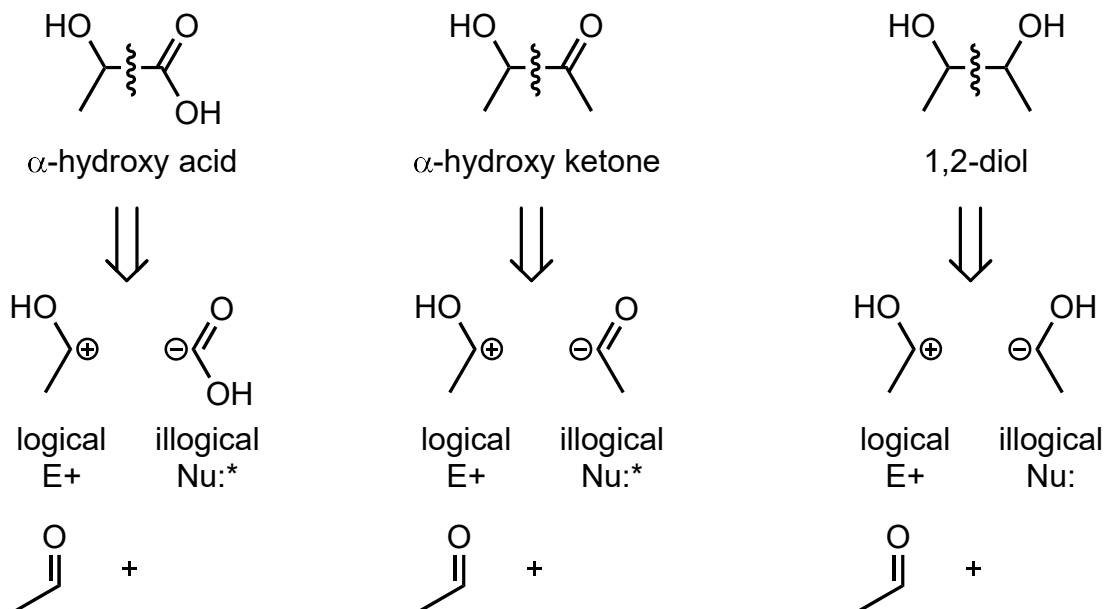


4.3 "Illogical" 2-FG TMs: 1,2-Dioxygenated Patterns

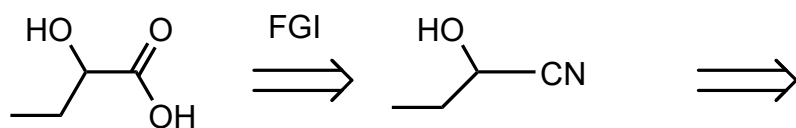
typical alcohol disconnections lead to illogical synthons



use of synthetic equivalents gives logical disconnections

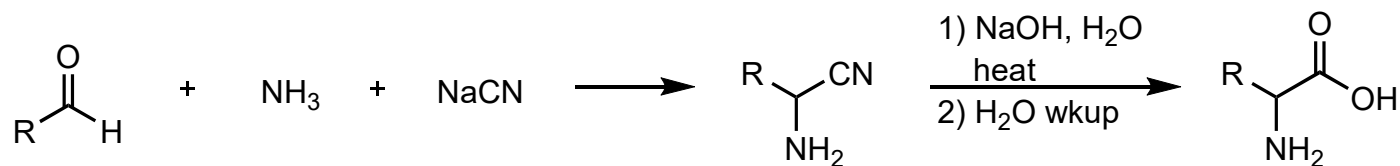
making a carbonyl carbon a nucleophile is called **Umpolung (polarity reversal)*

α -Hydroxy Carboxylic Acid Target Molecule

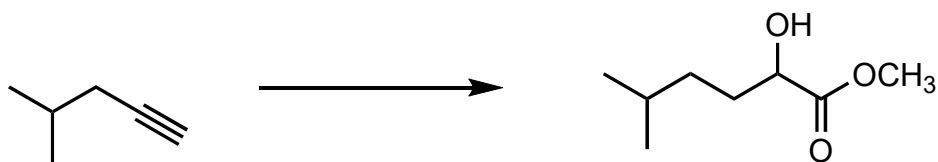


synthesis:

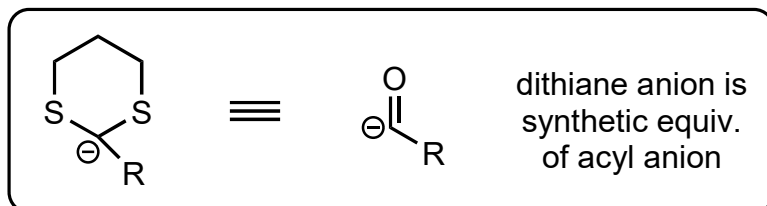
α -Amino Carboxylic Acid Target Molecule - via Strecker amino acid synthesis



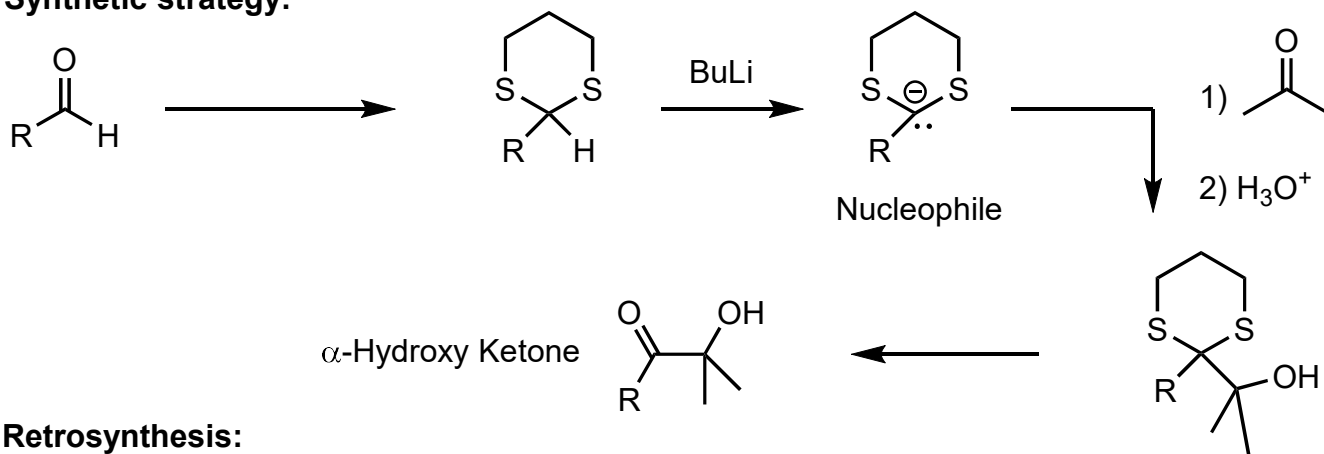
Practice - provide reagents for the given transformation (consider retrosynthesis first!)



α -Hydroxy Ketone Target Molecule



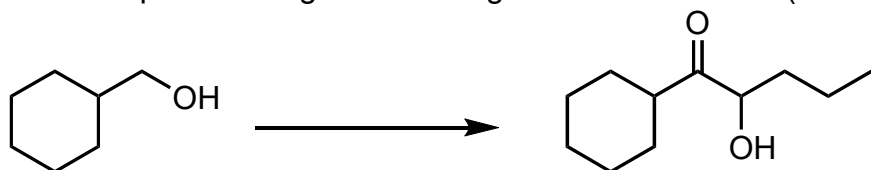
Synthetic strategy:



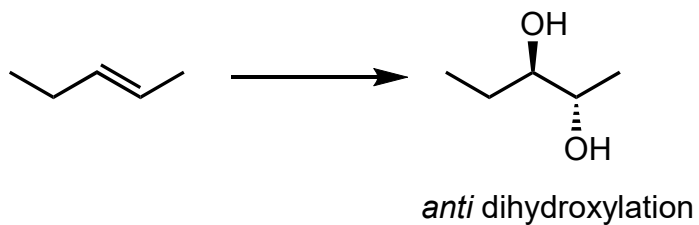
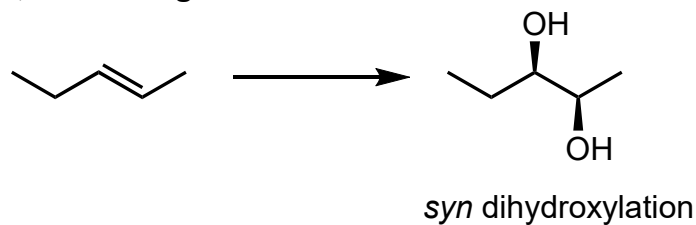
Retrosynthesis:



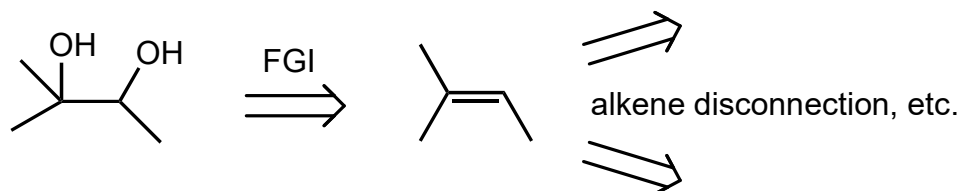
Practice - provide reagents for the given transformation (consider retrosynthesis first!)



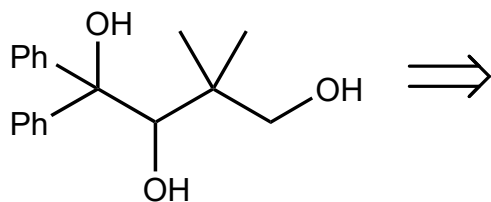
1,2-Diol Target Molecule



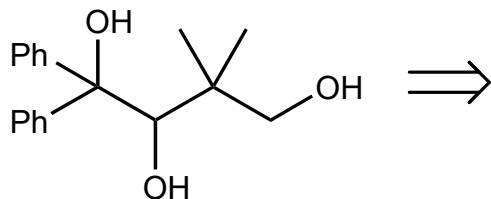
Retrosynthesis:



Practice: provide a retrosynthesis. Work back to only **monofunctional** starting materials.



consider 1,2-diol pattern



note ROH with two identical groups