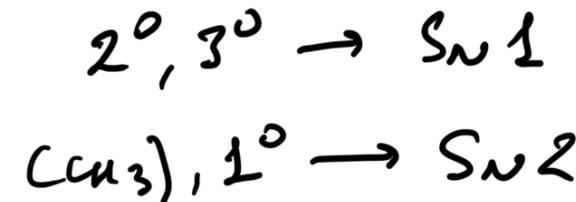
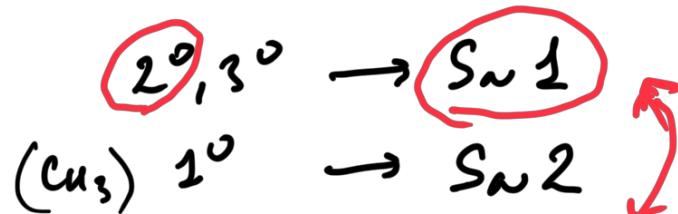
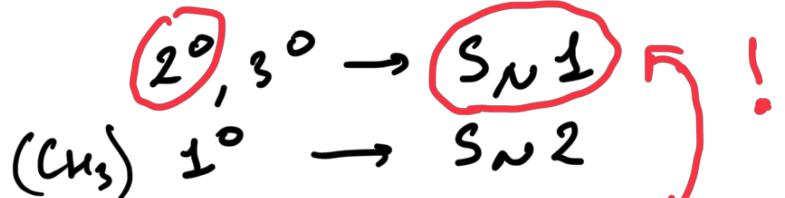
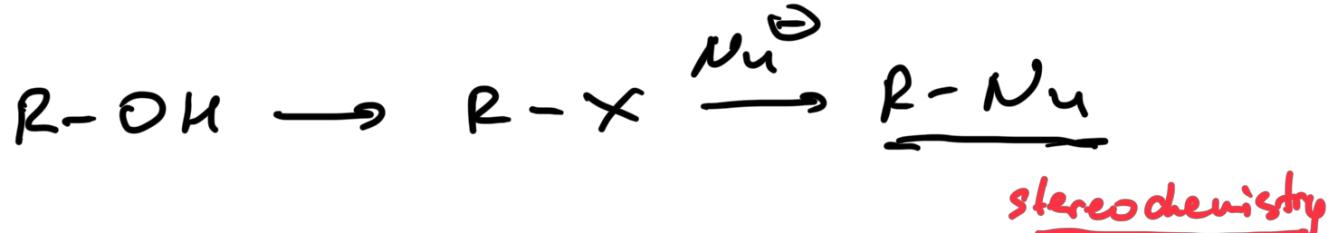


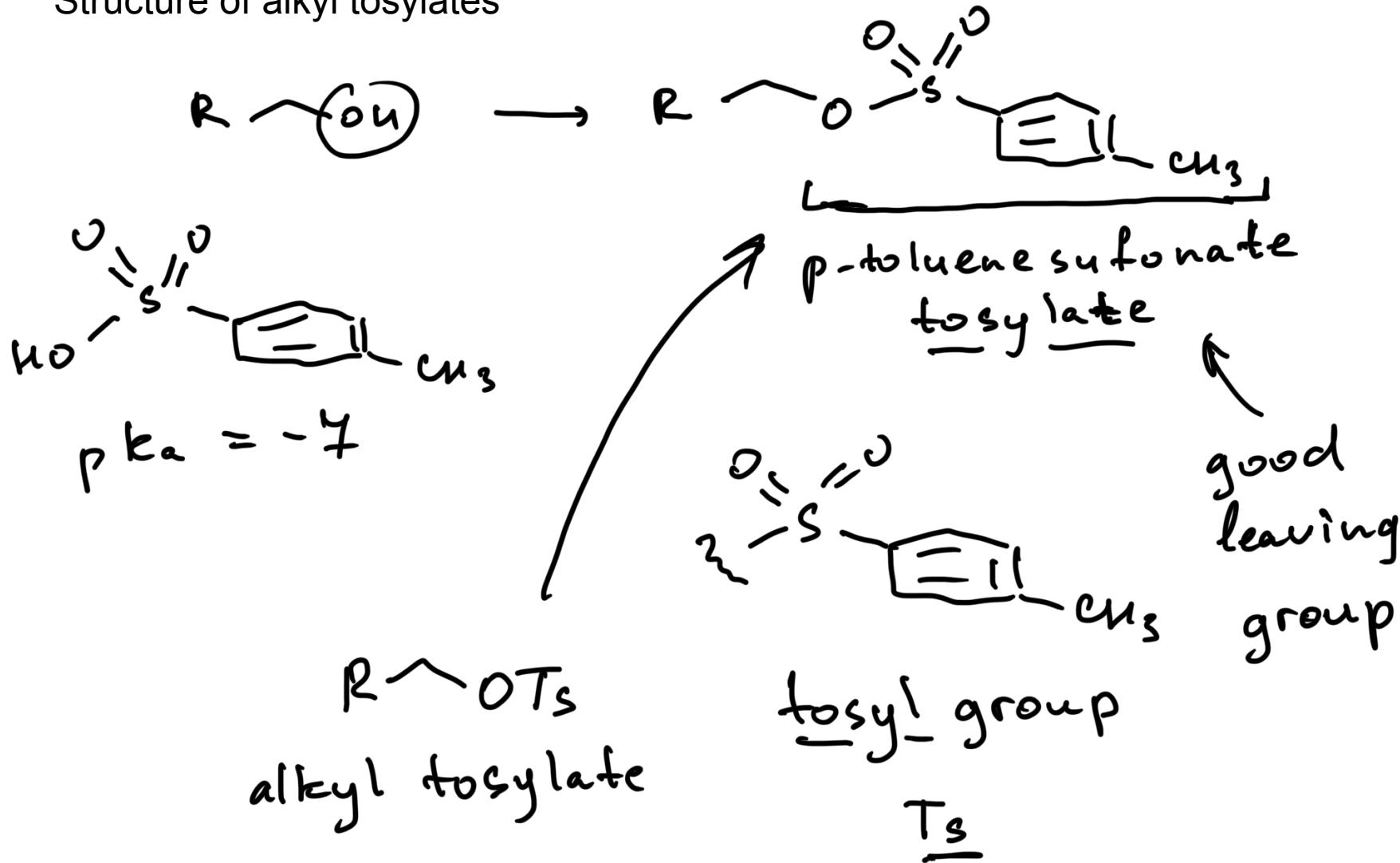
Conversion of alcohols to alkyl halides

Summary



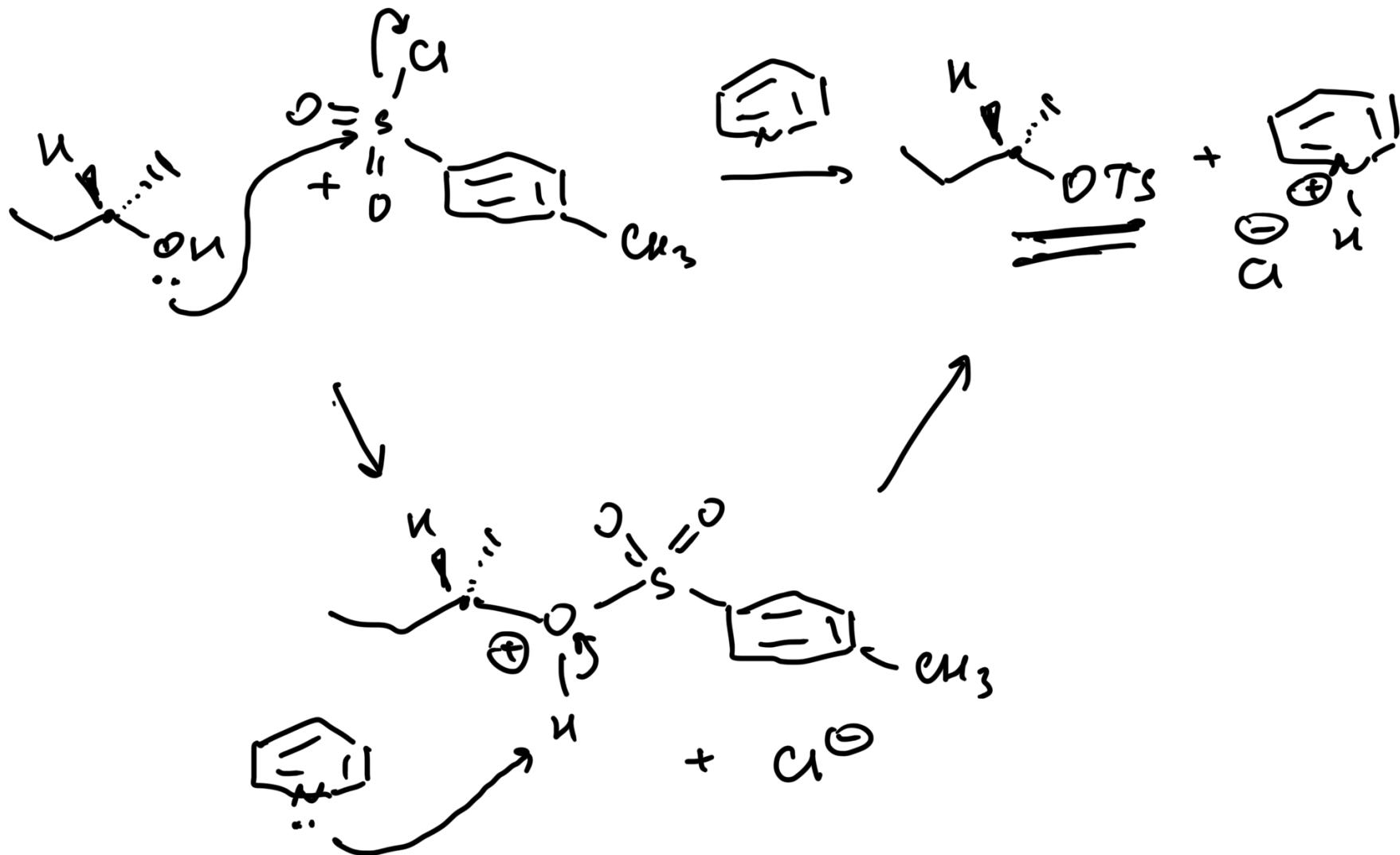
Conversion of alcohols to alkyl tosylates

Structure of alkyl tosylates



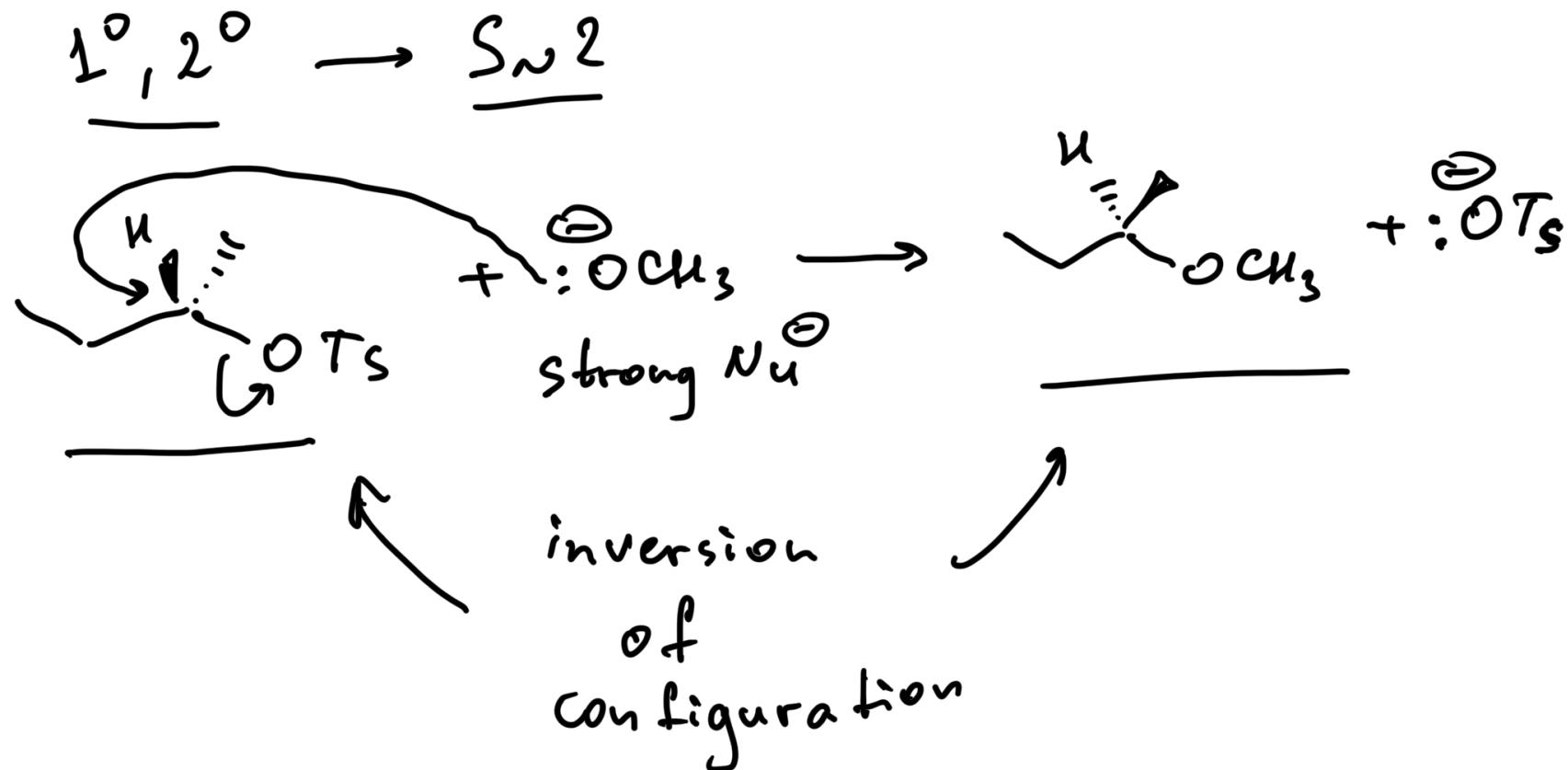
Conversion of alcohols to alkyl tosylates

Reaction of alcohols with tosyl chloride and pyridine



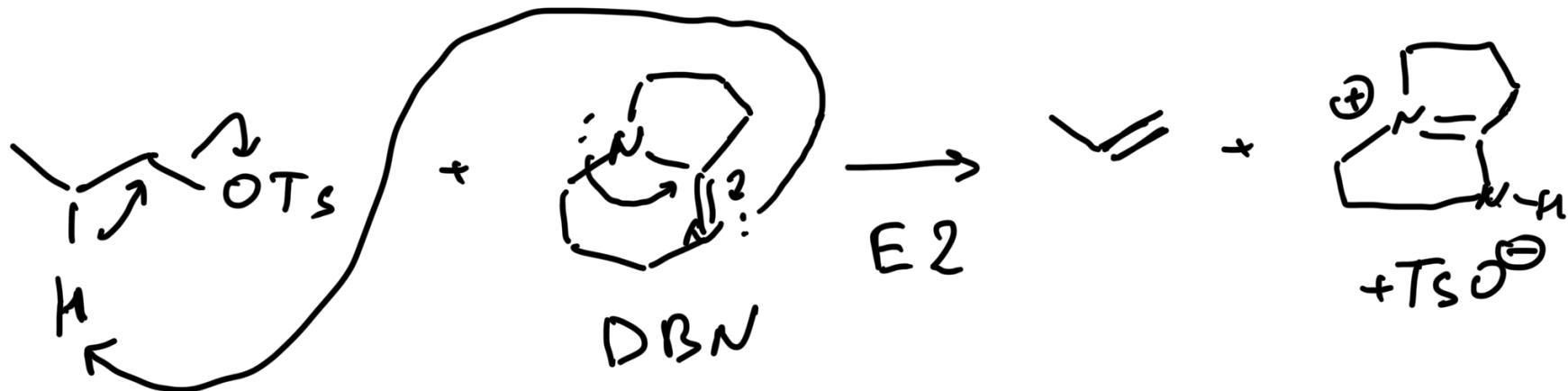
Conversion of alcohols to alkyl tosylates

Reaction of alkyl tosylates: nucleophilic substitution



Conversion of alcohols to alkyl tosylates

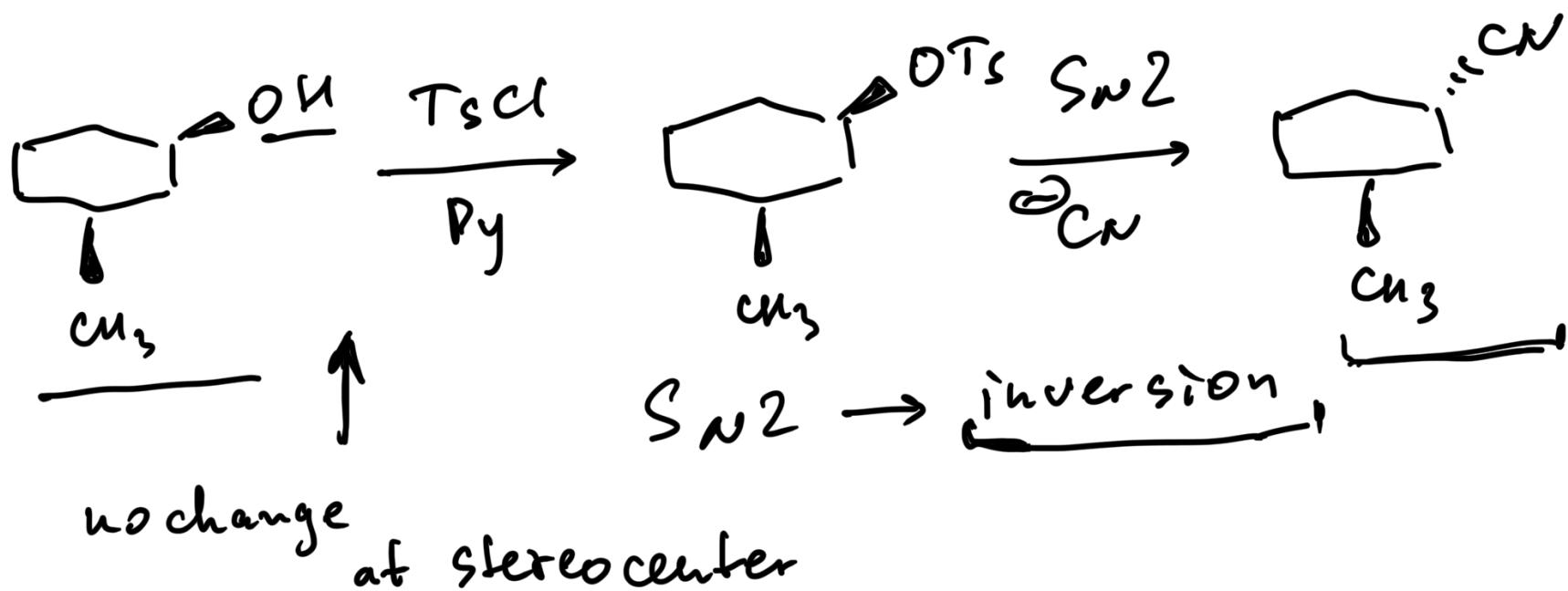
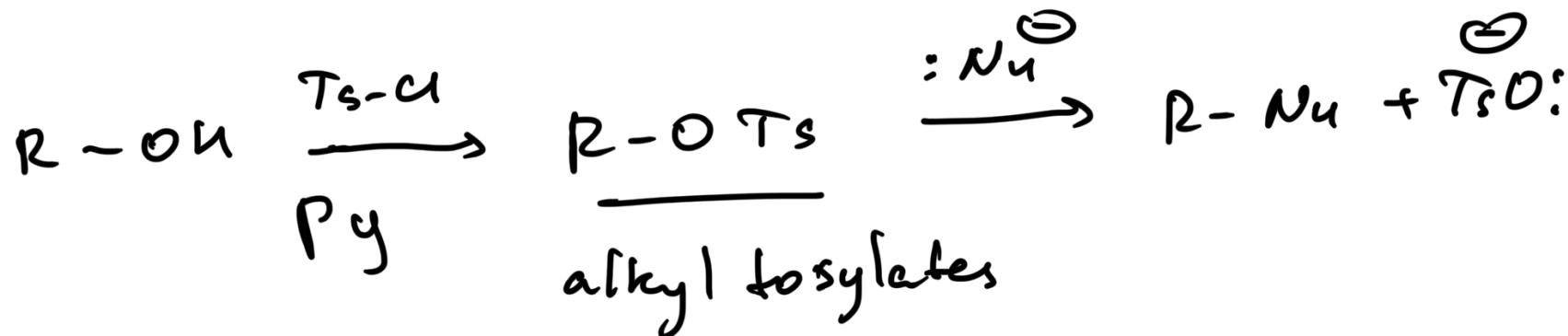
Reaction of alkyl tosylates: elimination



Strong
non-nucleophilic base

Conversion of alcohols to alkyl tosylates

Two-step conversion of an alcohol to a substitution product



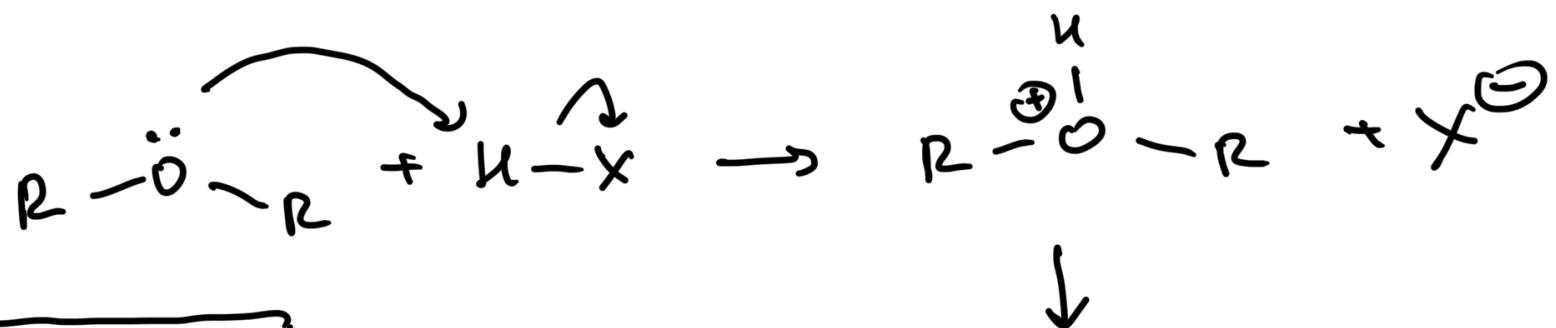
Reactions of ethers with strong acid

General considerations



had LIG

- need strong acid $\text{R}-\overset{\text{H}}{\underset{+}{\text{O}}}^{\text{I}}-\text{R}$
- need X^- good Nu

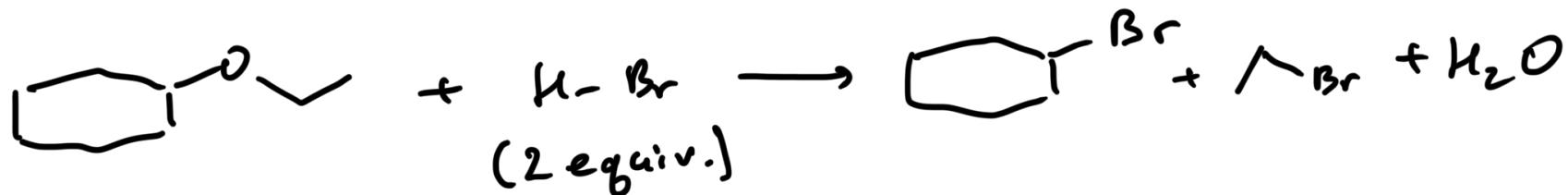


determined by R

HBr, HI

Reactions of ethers with strong acid

Mechanism of cleavage of ethers with strong acids



- Cu_2 or 1° alkyl $\rightarrow S\text{N}2$

- $2^\circ, 3^\circ$ alkyl $\rightarrow S\text{N}1$

Reactions of ethers with strong acid

Mechanism of cleavage of ethers with strong acids

