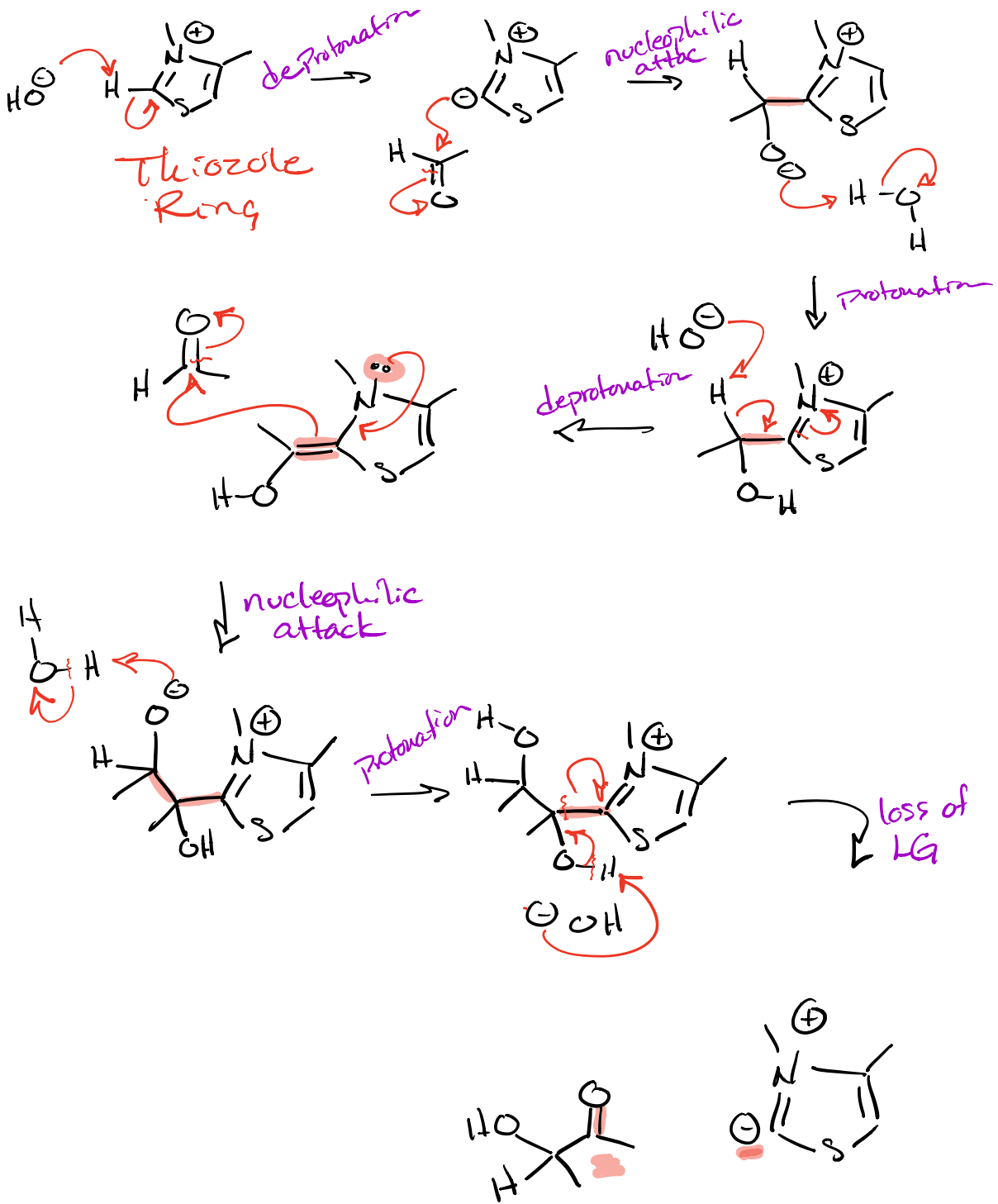
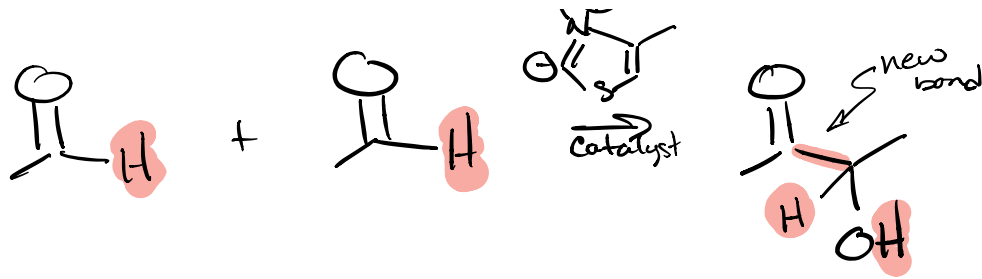


Curved Arrows

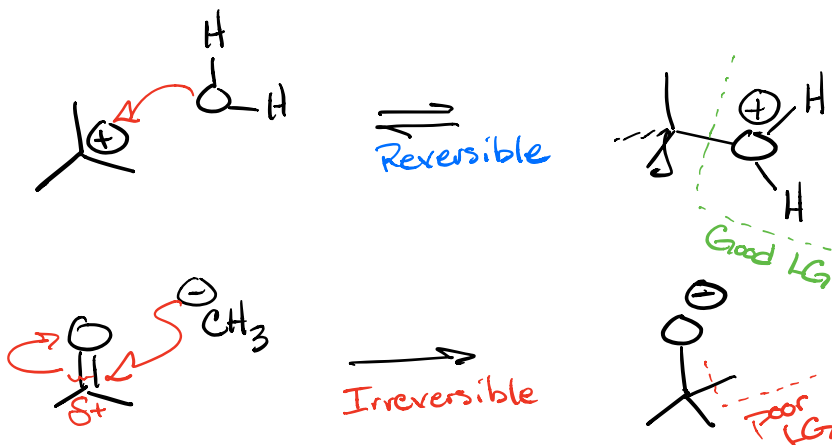




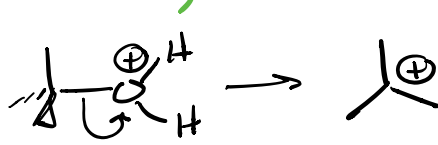
6.11 Carbocation Rearrangement

⇒ Skip for now
We'll hit it in Chapter 7 in context

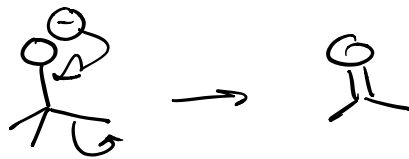
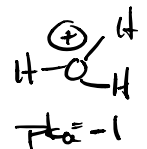
Reversible vs Irreversible



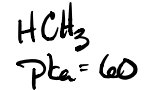
Good leaving = weak base

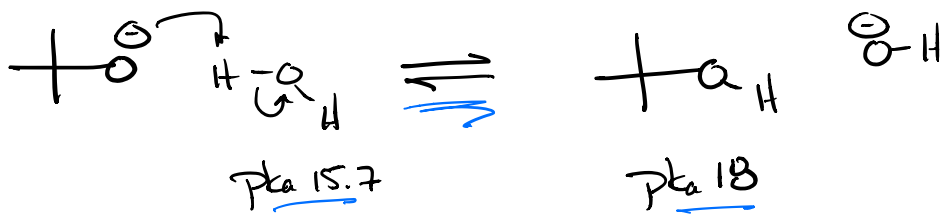
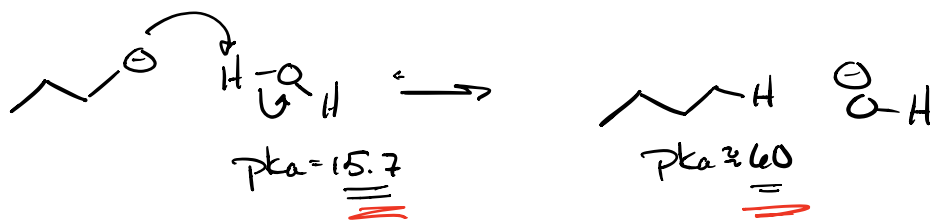
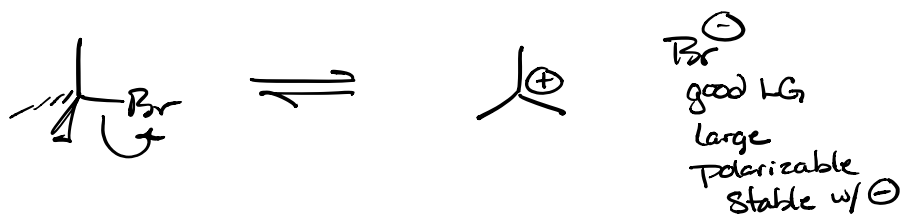


↑ weak base
↓ Strong Acid
H₂O
weak base
pK_a = 15.7
stable

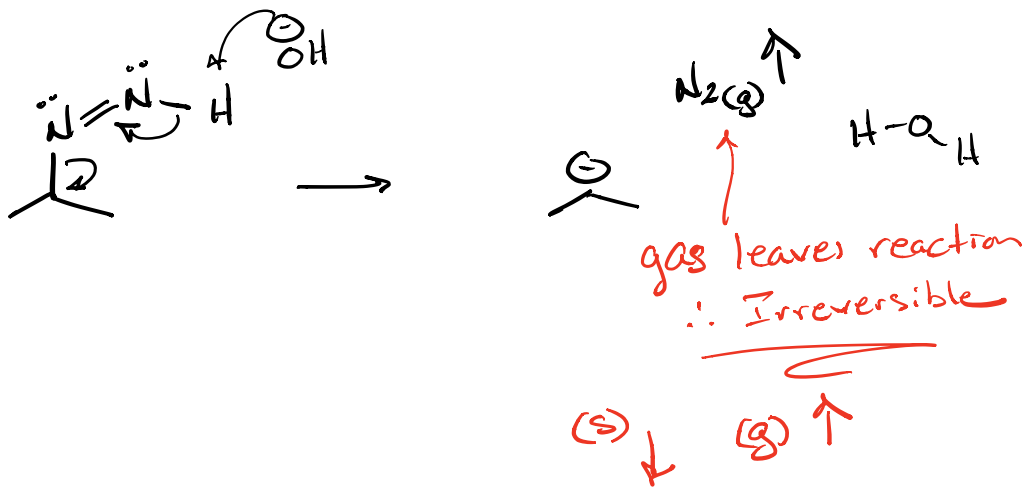
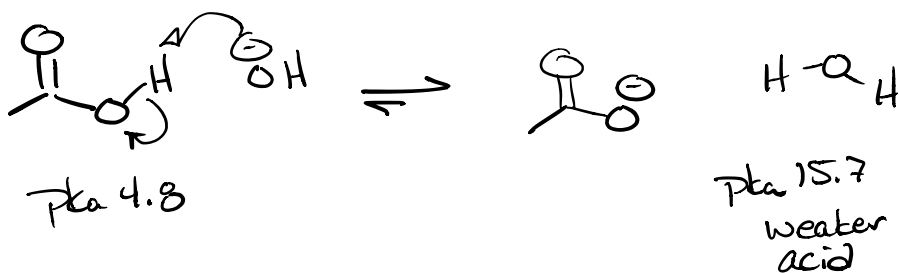


CH₃⁻
very strong base
very unstable



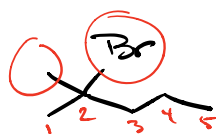


pKa's similar



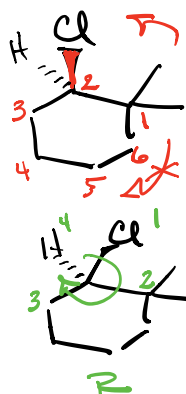
Chapter 7 Substitution Reactions S_N1 & S_N2

Nomenclature



2-methyl
2-bromo
pentane

2-bromo-2-methylpentane



1,1-dimethyl

2-chloro

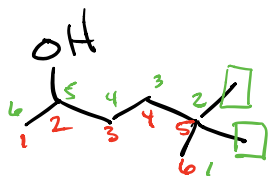
(2R)

Cyclohexane

(2R)-2-chloro-1,1-dimethylcyclohexane

Rules for Alcohols

* alcohol must be part of the parent chain & have lowest possible #



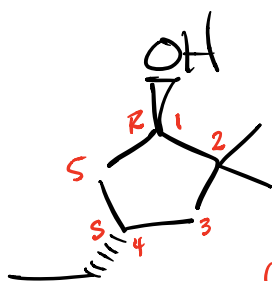
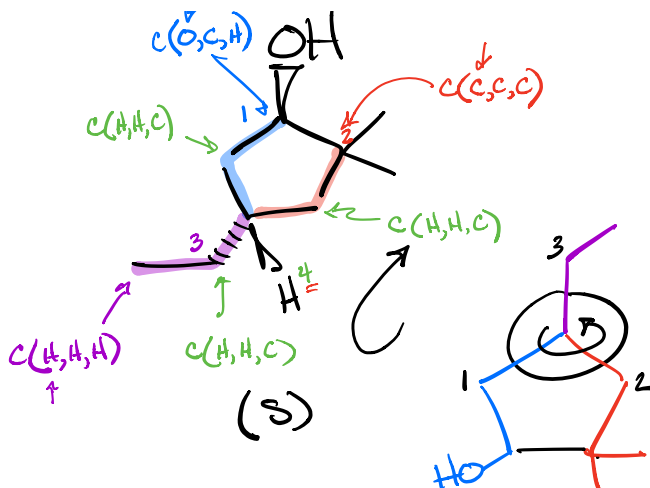
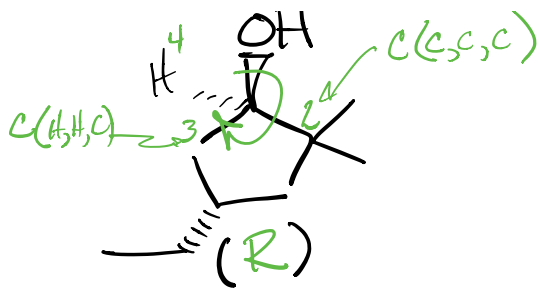
2,2,5
2,5,5

↑
alcohol lowest possible #

2-ol
5,5-dimethyl
hexane

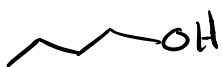
5,5-dimethylhexan-2-ol

↑
locator for alcohol



Cyclopentane
 2,2-dimethyl
 1-ol
 4-ethyl
 (1R, 4S)-

(1R, 4S)-4-ethyl-2,2-dimethylcyclopentan-1-ol



n-butanol

1-butanol

butan-1-ol

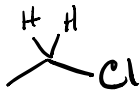
n = normal



N-methyl-ethylamine

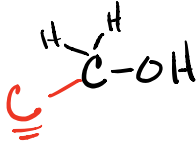
N = attached to nitrogen

Classification

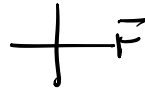
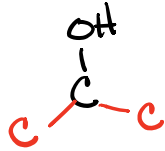


1°

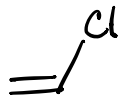
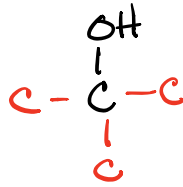
Terminal end =
Primary 1°
Connected to a
R-CH₂-



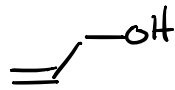
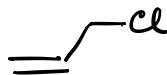
2°



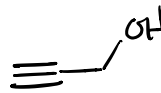
3°



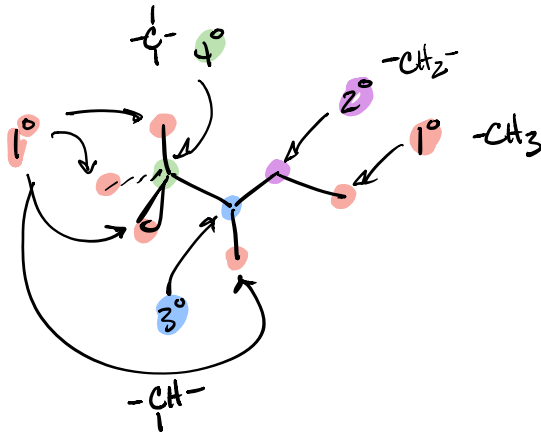
Vinyl
or
Vinylic



Allyl
or
Allylic



Propargyl
or
Propargylic



Nitrile
-C≡N

~~Nitryl~~

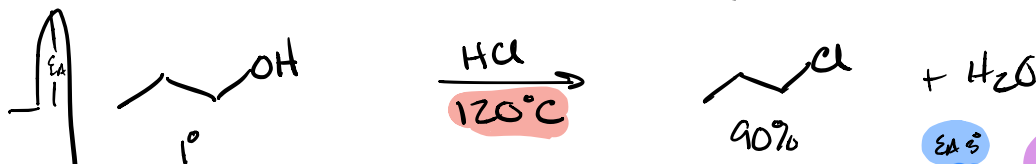
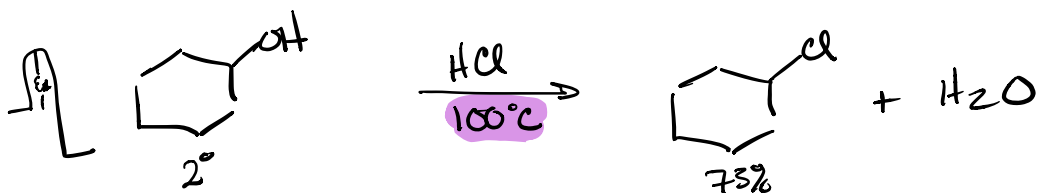
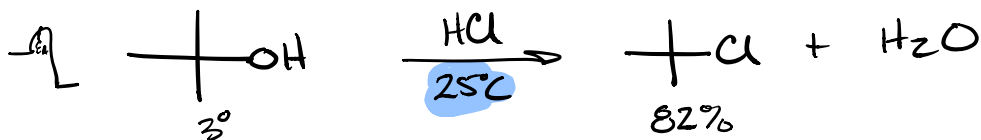
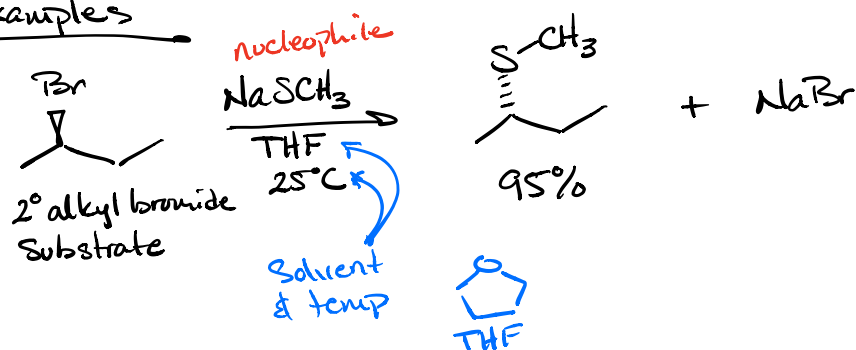
Substitution Rxns



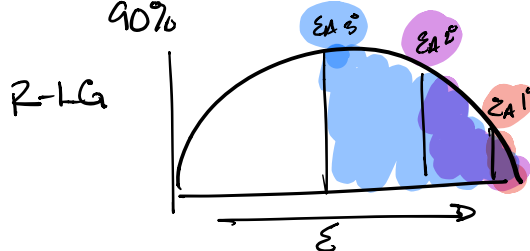
General Rate $3^\circ > 2^\circ \gg 1^\circ$ for R-LG

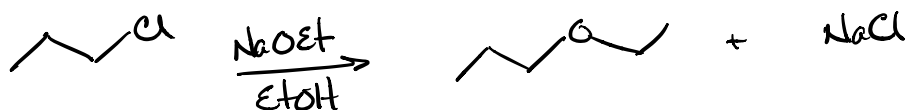
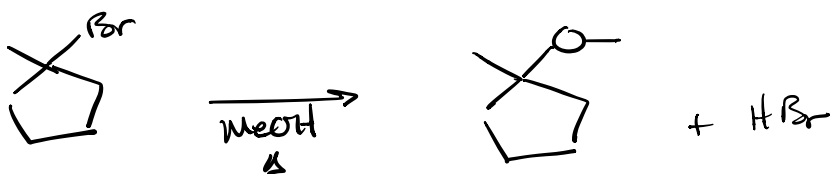
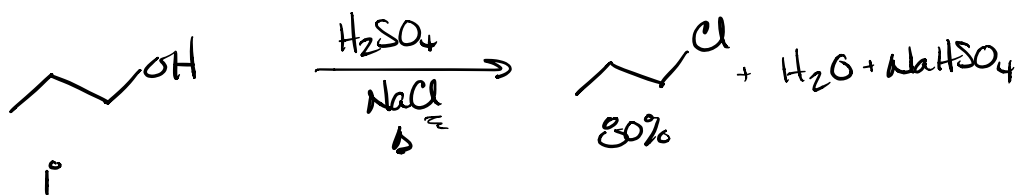


Examples



$3^\circ > 2^\circ \gg 1^\circ$



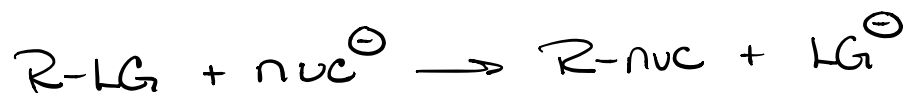
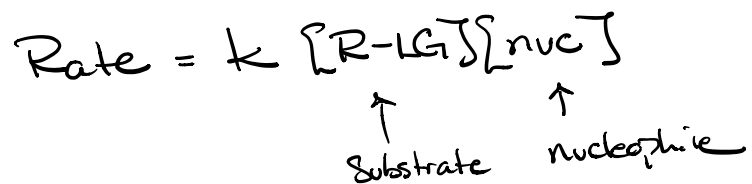


Two types of Rxns here

$\text{S}_{\text{N}}1$ Substitution Nucleophilic 1st order rate law

$\text{S}_{\text{N}}2$ Substitution Nucleophilic 2nd order rate law

S_N2



Bimolecular rate law
2nd order rate law