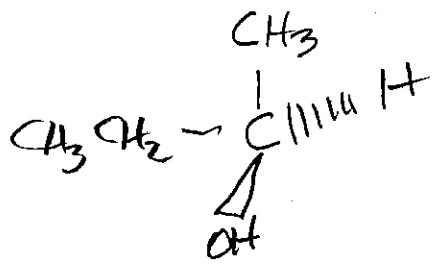
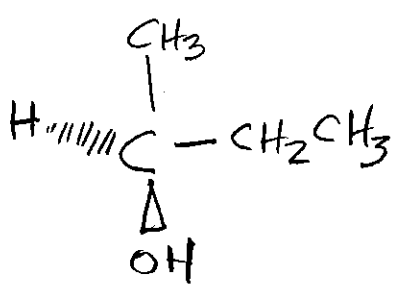
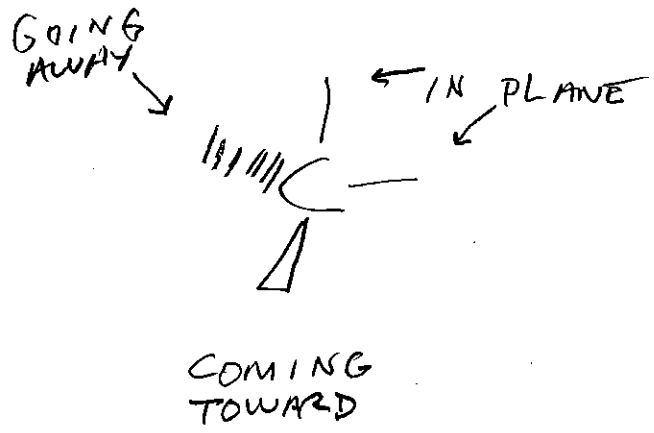
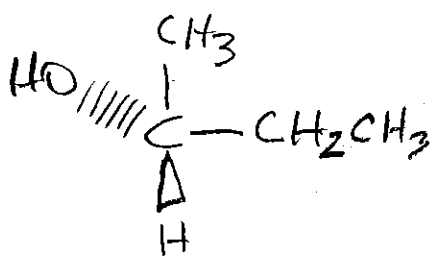


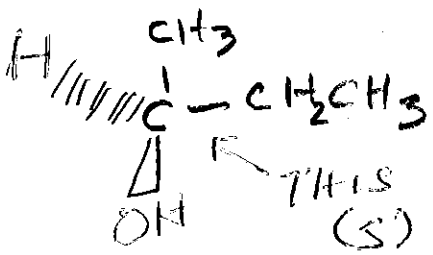
# TETRAHEDRAL CARBONS STEREOCENTERS



WHAT IF PRIORITY 4 IS NOT GOING AWAY?



SWAP  
4



THIS IS  
(S)

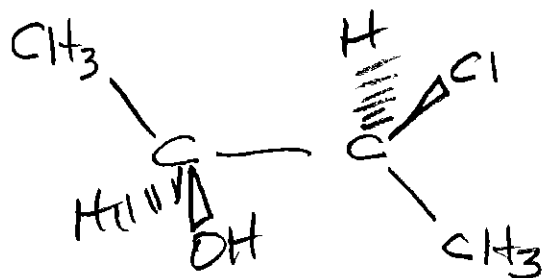
MEANS THE ORIGINAL  
IS (R)

1. SWAP PRIORITY 4 WITH WHATEVER IS GOING AWAY
2. DETERMINE THAT AS R OR S
3. ORIGINAL IS THE OPPOSITE

WHAT ABOUT MORE THAN ONE STEREOCENTER?

(2)

2,3 DISUB. BUTANES

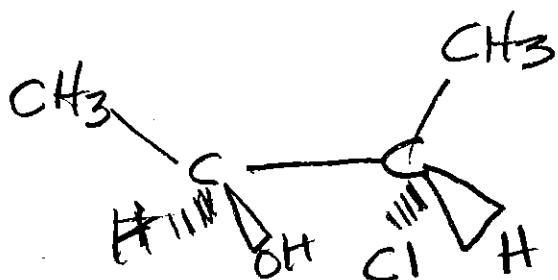


(2) (3)

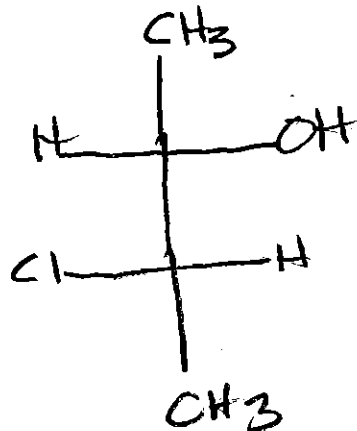
3-CHLORO-2-BUTANOL

CONVERTING PERSPECTIVE TO FISCHER

① ROTATE  $C_2 - C_3$  BOND  $180^\circ$  UNTIL ECLIPSED

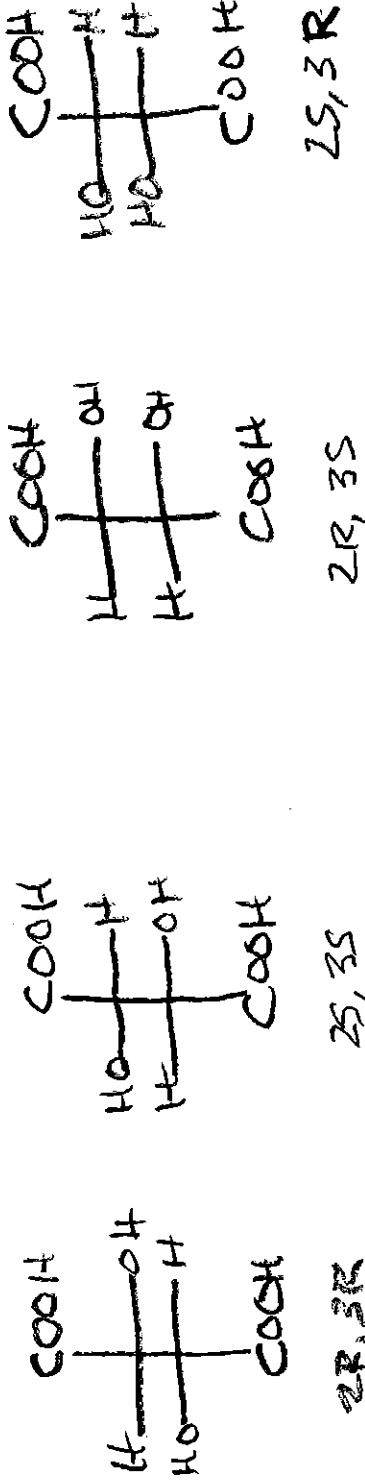


② ROTATE  $180^\circ$  AROUND Y AXIS  
 $C_1$  AT TOP



WHAT IS COMING AT YOU IN  
① WILL BE ON THE RIGHT  
IN ②

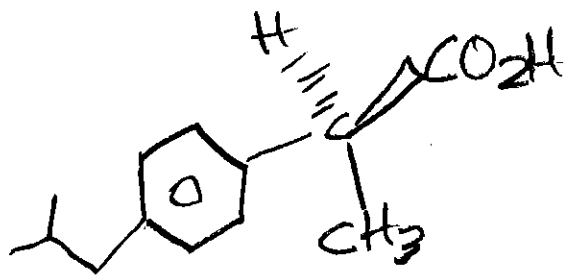
ENANTIOMERS AND DIASTEREOMERS



M.P. [°C]      169      169      147

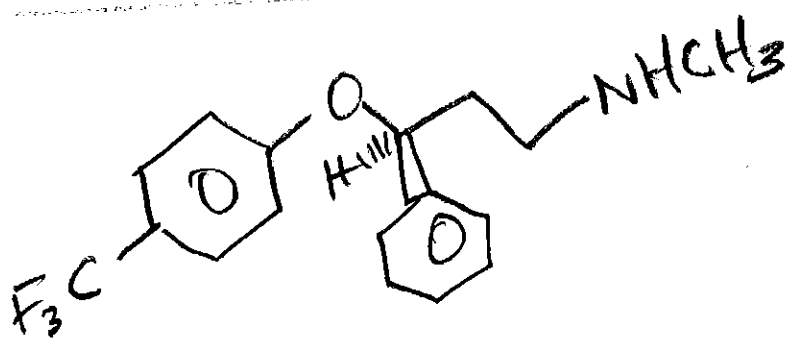
$\alpha$  [DEG]      1.7598      1.7598      -1.660

$\alpha$  [DEG]      +12      -12      0



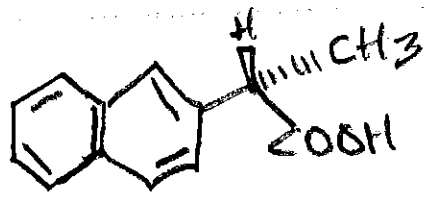
(S) IBUPROFEN

SOLD AS RACEMIC MIXTURE OF (R) AND (S) ENANTIOMERS  
ADVIL, NUPRIN, MOTRIN



(S) FLUOXETINE  
PREVENTS MIGRAINES

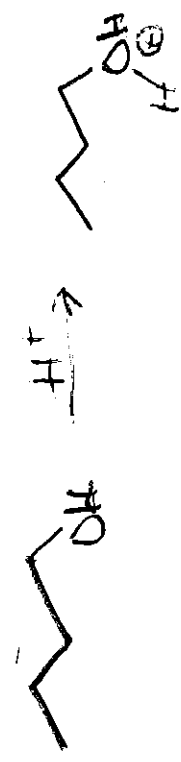
RACEMIC MIXTURE IS SOLD AS PROZAC



(S) NAPROXEN  
(R) ISOMER IS LIVER TOXIN

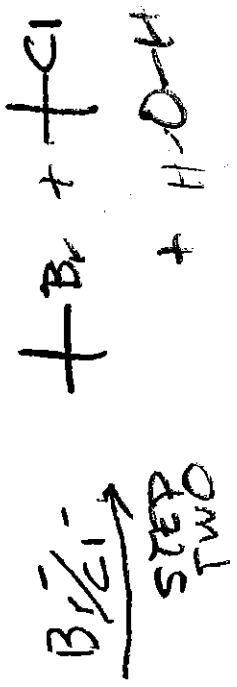
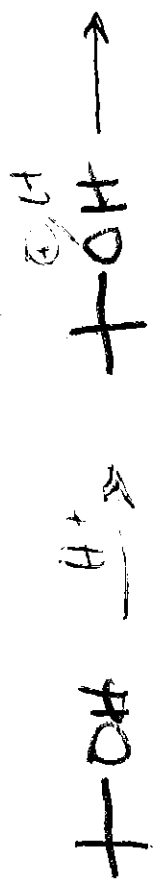
5

EXPT 7



PRIMARY SUBSTRATE

SN2 MECH. RATE =  $k$ [SUBST][NUCL] ONE STEP



INTERM STEP ONE

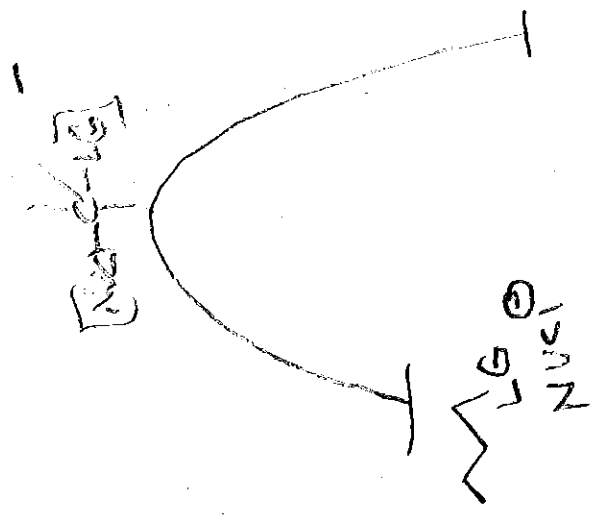
TERTIARY SUBSTRATE

SN1 RATE =  $k$ [SUBST] TWO STEPS

- STRENGTH OF NUCL MORE IMPORTANT IN SN2 (AND E2)

- Br<sup>-</sup> IS STRONGER NUCL IN A PROTIC SOLVENT

2

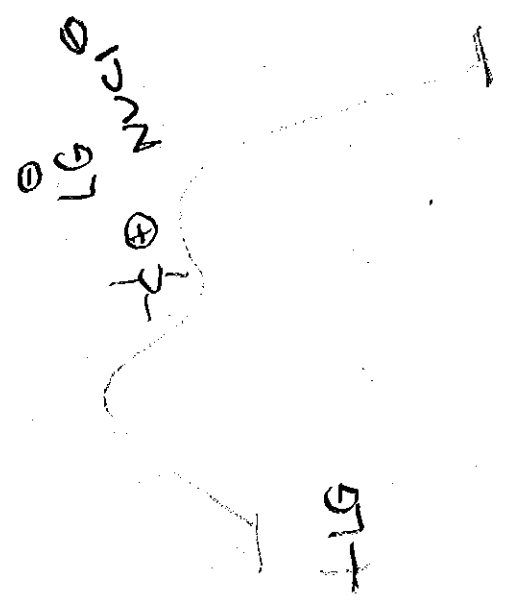


① + Br<sup>-</sup>



REL RATE

WATER	7
DMSO	1300
DMF	2800
ACETONITRILE	5000



SN1

+ Cl<sup>-</sup>



REL RATE

SOLENT	8,000
WATER	1
ACETONE	1

POLAR APROTIC

- KETONES  
(ACETONE)
- DMSO
- THF
- ACETONITRILE  
( $\text{CH}_3\text{C}\equiv\text{N}$ )

STRONGEST BASE  
IS

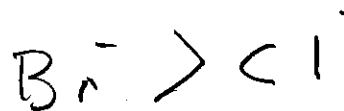
STRONGEST NUCL

POLAR PROTIC

- $\text{H}_2\text{O}$
- $\text{H}_2\text{SO}_4$
- ALCOHOLS
- AMINES

LARGEST BASE  
IS

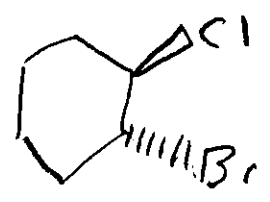
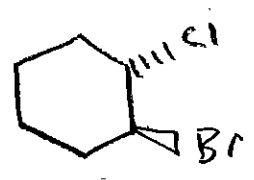
STRONGEST NUCL



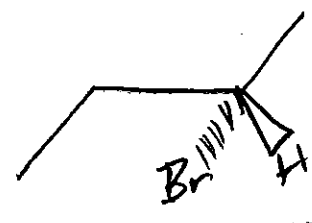
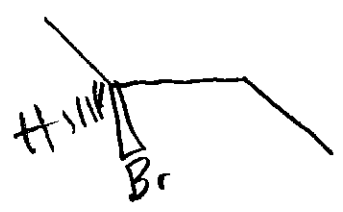
# COMPARING

(8)

7  
MIRROR IMAGES,



RELATIONSHIP?



## LEAVING GROUPS/NUCLEOPHILES/BASES

- LG
- C-Br
  - C-Cl
  - C-I
  - C-OH<sub>2</sub><sup>+</sup>

- USUALLY  
NUCL
- Cl<sup>-</sup>
  - Br<sup>-</sup>
  - I<sup>-</sup>
  - SCN<sup>-</sup>
  - CN<sup>-</sup>

- USUALLY  
BASES
- OH<sup>-</sup>
  - OT<sup>-</sup>

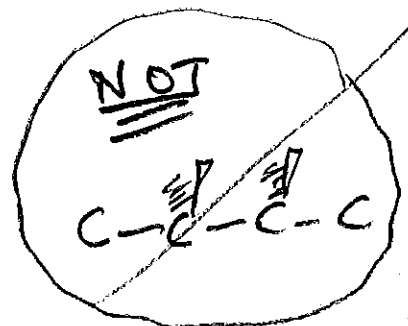
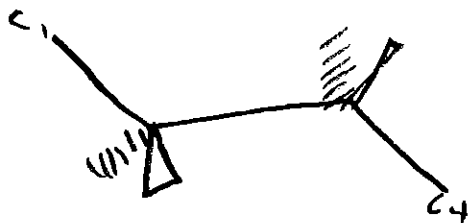
- CAN BE BOTH
- <sup>-</sup>OCH<sub>3</sub>
  - <sup>-</sup>OCH<sub>2</sub>CH<sub>3</sub>
  - ETC.



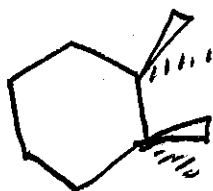
# RULES FOR DRAWING DISUBSTITUTED

(9)

PERSPECTIVE (BUTANES) 2,3



1,2 RINGS



FISCHER 2,3 BUTANES

