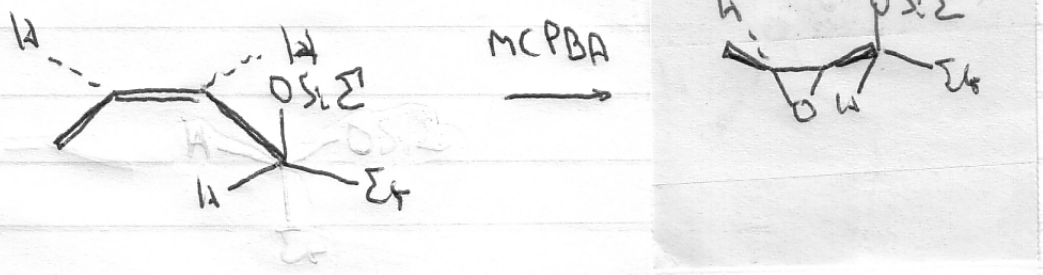
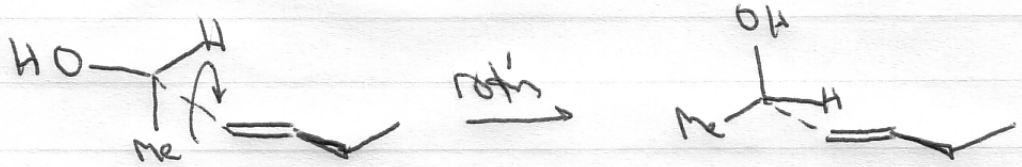
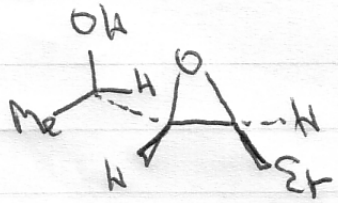
Chem 131(231)A; Solns to Prob Set 11

(a)

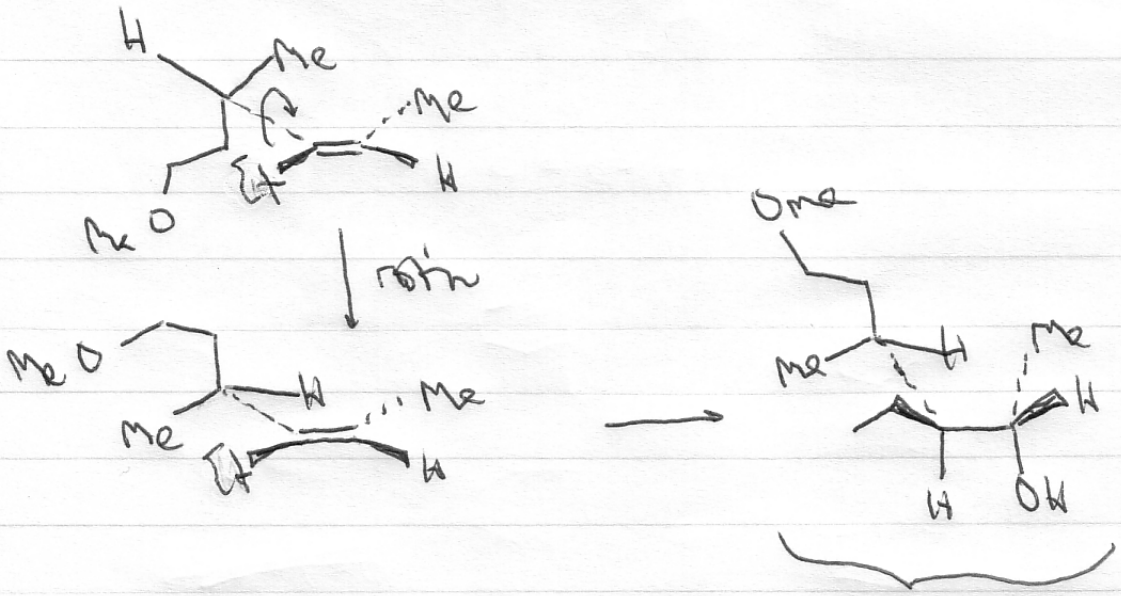


(b)



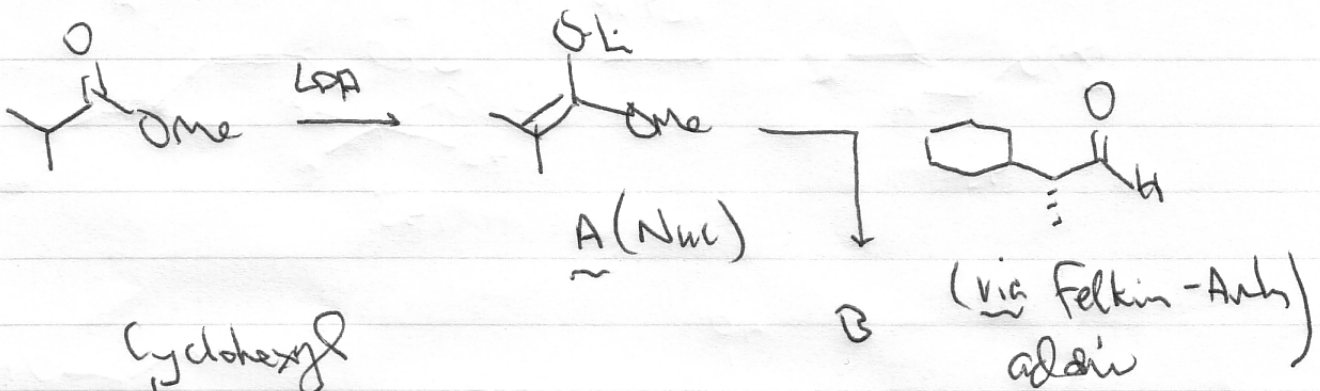


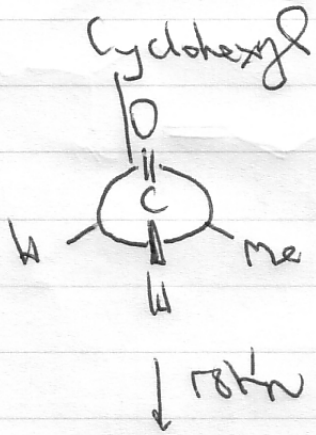
(c)



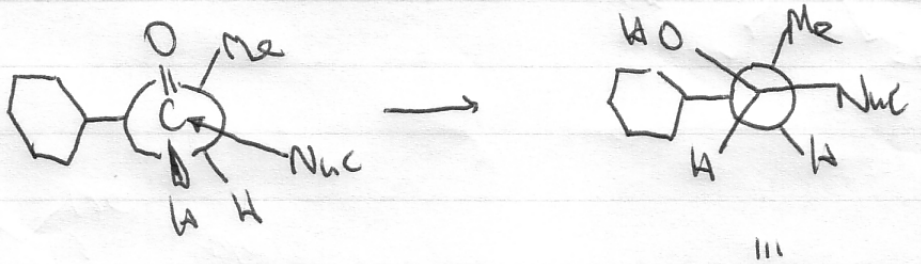
★ make a model & draw so that the longest chain is in the plane of the page. Do so w/ the other cases too.

(d)

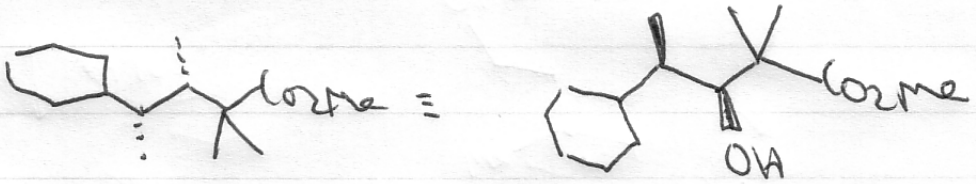

LDA
OMe
OLi
OMe
A (Nuc)
B
(via Felkin-Anh aldol)


Cyclohexyl
O
C
H
Me
H

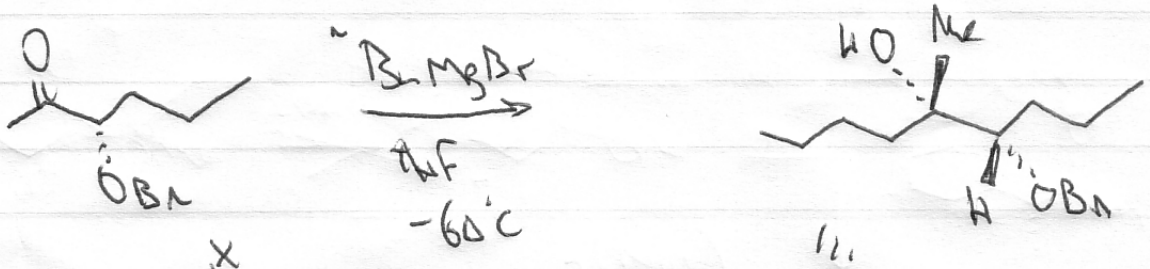
↓ ^{t}BuLi.

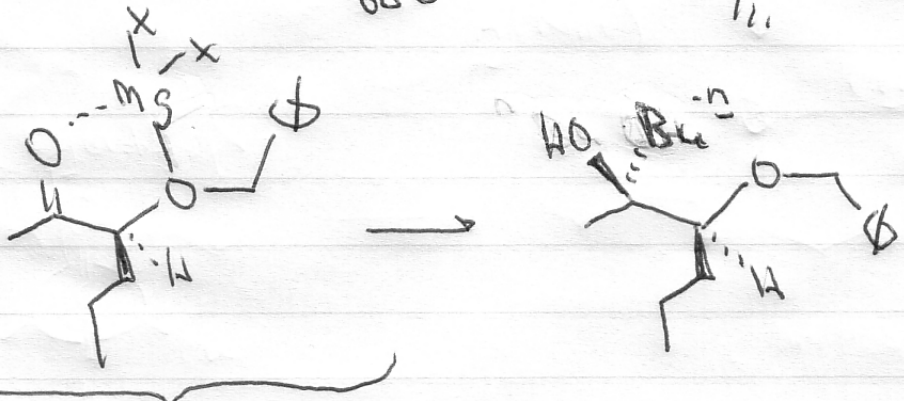

O
Me
C
Nuc
H
H
HO
Me
Nuc
H
H

III


CO2Me
≡
CO2Me
OH

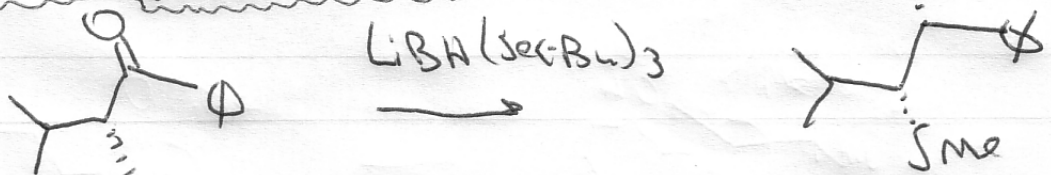
(e)

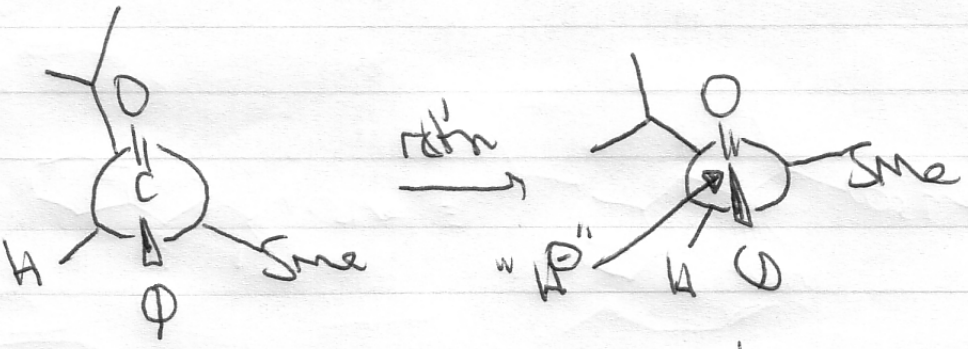


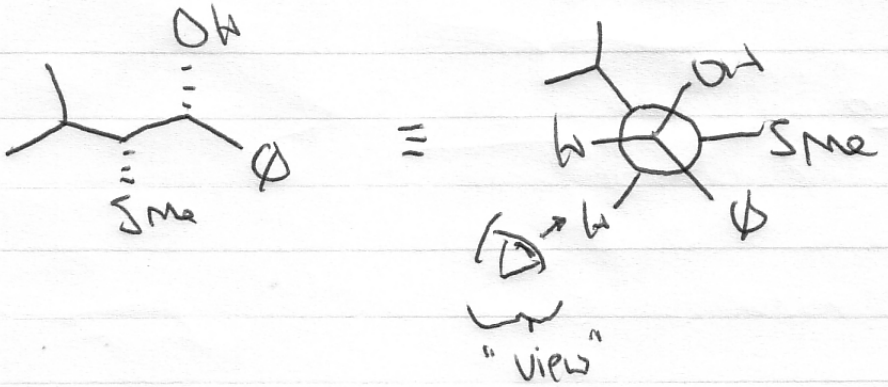


Chelation controlled addition

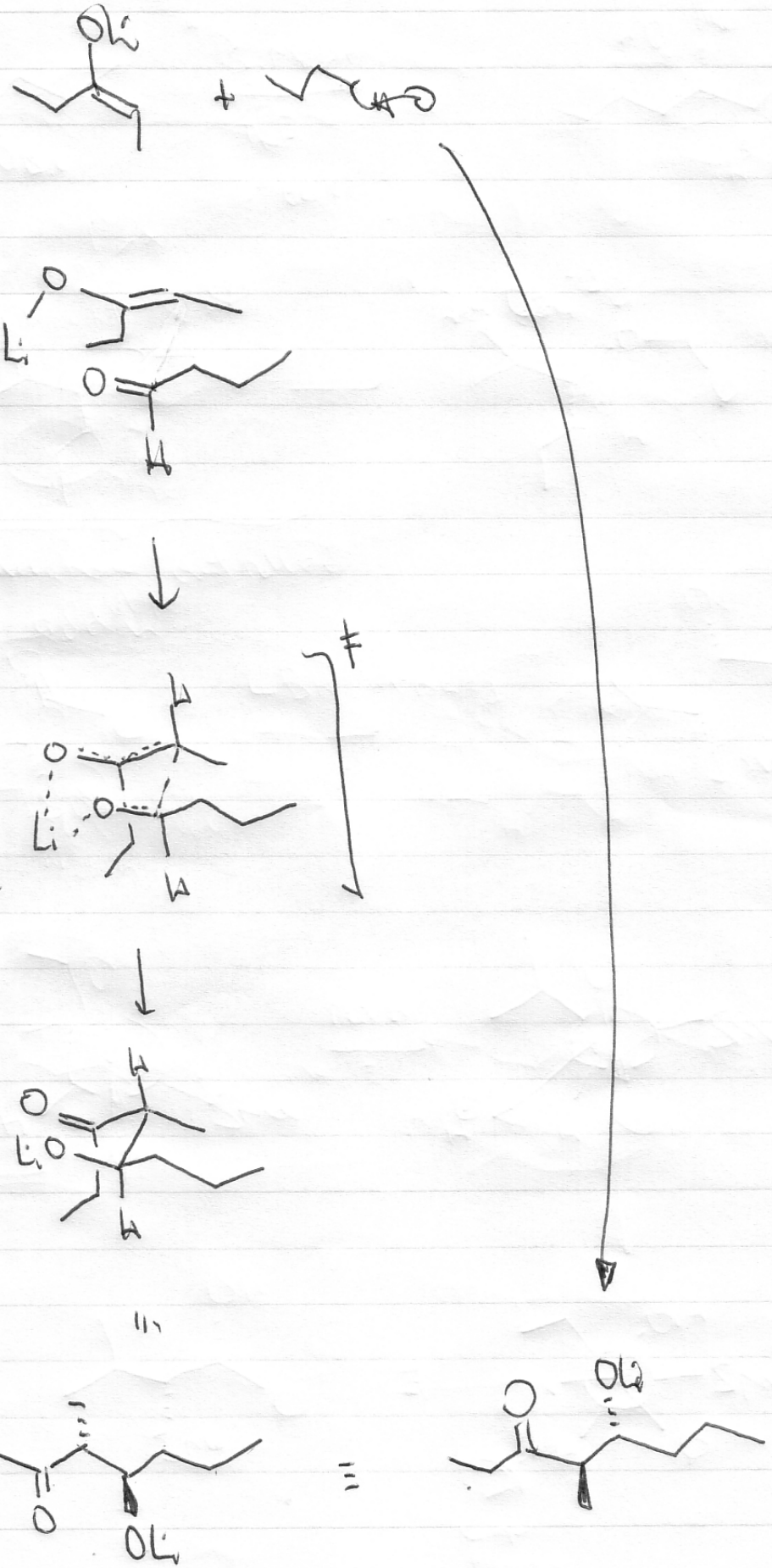
(f)





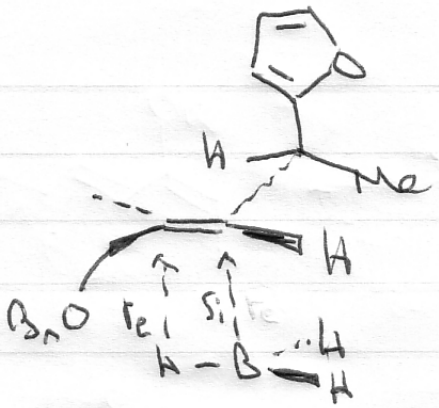


(9)



11.

2.



3. 70/30 ⇒ 40% [70-30] de

4. % de = 89

$P_1 + P_2 = 100$

$P_2 - P_1 = 89$

$2P_2 = 189 \Rightarrow P_2 = 94.5\%$

$\therefore P_1 = 5.5\%$

5. $P_1/P_2 = 10$, $P_1 + P_2 = 100$ $\Rightarrow$

$P_2 = \frac{100}{11} \simeq 9.1\% = P_2$

$\therefore P_1 = 90.9\%$

$\Delta\Delta G^{\ddagger} = RT \ln 10 = RT\ 2.303 (\log 10)$

$= 2.303\ RT = (2.303)(1.987)(298)$

$\simeq 1364\ \text{cal mol}^{-1}$

$\Delta\Delta G^{\ddagger} \simeq 1.4\ \text{kcal mol}^{-1}$