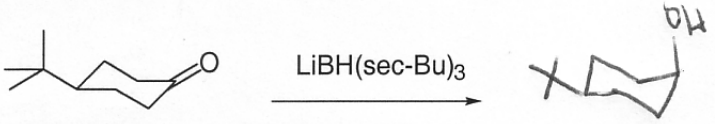
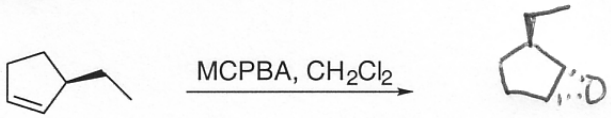
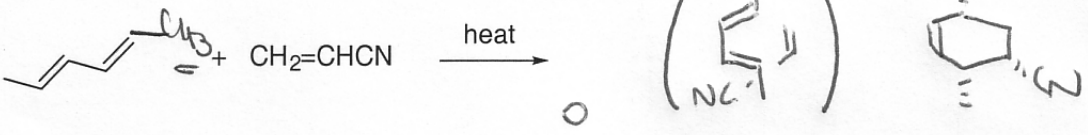
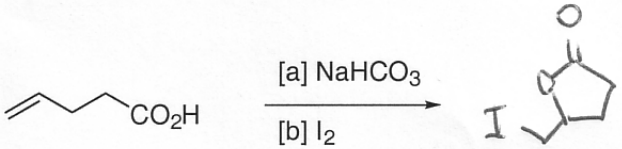
Solns to

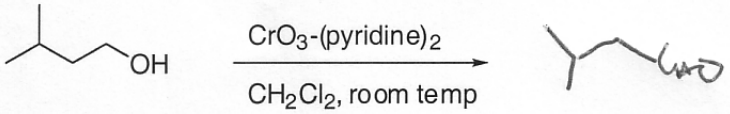
Practice problems

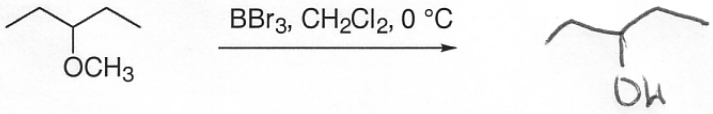


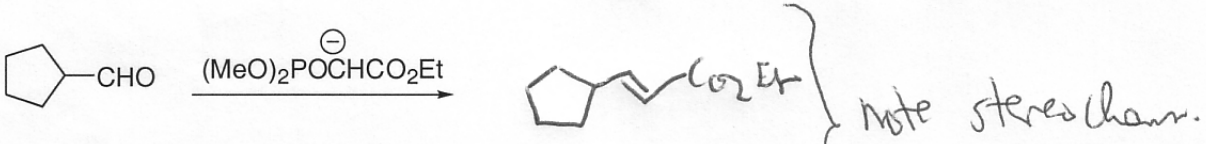


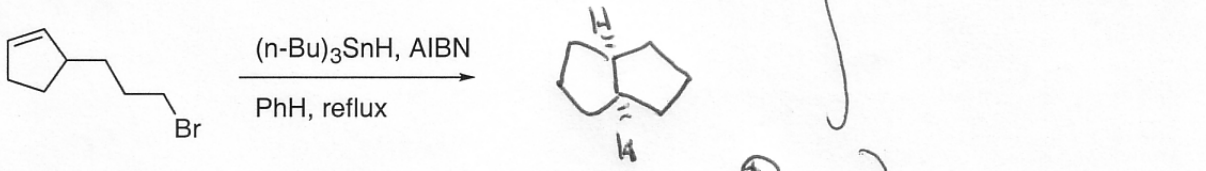


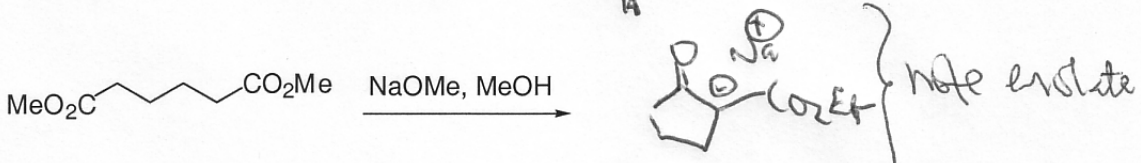


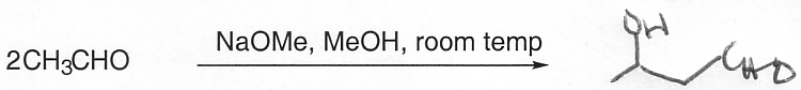


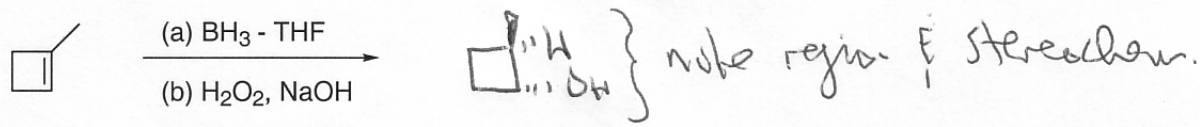


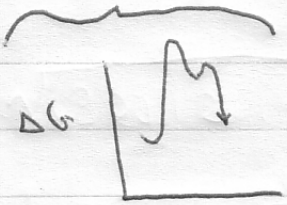




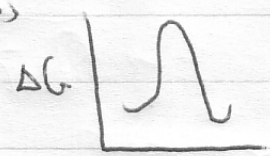




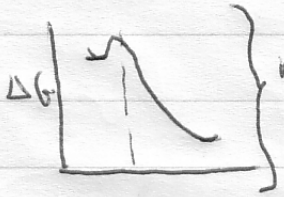


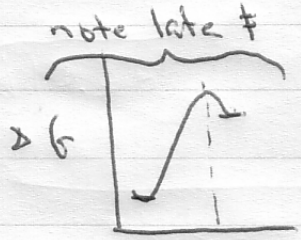
(a) 

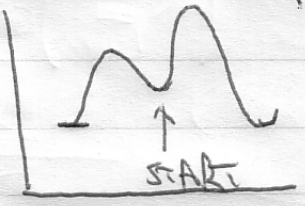
S_N1

(b) 

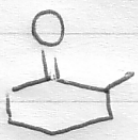
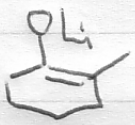
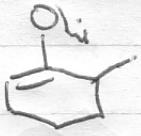
S_N2

(c) 

(d) 

(e) can you think of a case like this?


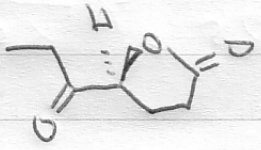
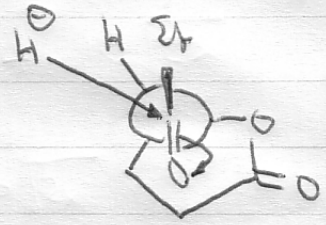
(f) See (c) & (d)

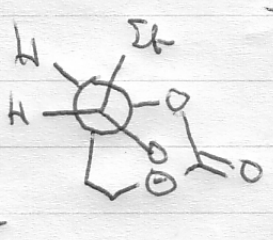




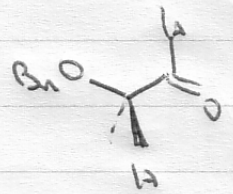
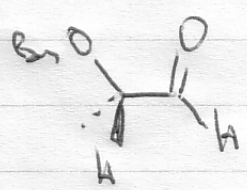
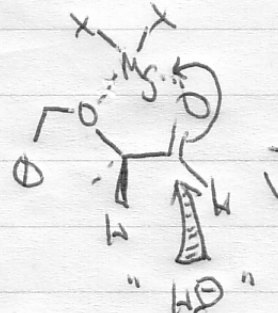
10 / 90

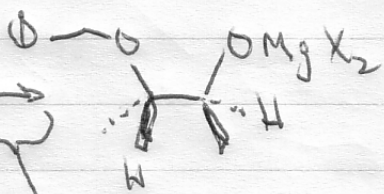
273
− 78
195 K

$$\Delta G = -RT \ln K_{eq} = -1.987(195) \ln 9$$


Felkin-Anh



$2\ MeMgBr \rightleftharpoons MgBr_2 + Me_2Mg$

Schlenk equilibrium

Secular det.

$$\begin{vmatrix} x & 0 & 0 & 1 \\ 0 & x & 0 & 1 \\ 0 & 0 & x & 1 \\ 1 & 1 & 1 & x \end{vmatrix} = 0$$

Secular eqns.

$$C_1 x + C_4 = 0$$
$$C_2 x + C_4 = 0$$
$$C_3 x + C_4 = 0$$
$$C_4 x + C_1 + C_2 + C_3 = 0$$

$$k = A e^{-E_a/RT} \Rightarrow E_a = -RT(\ln k - \ln A)$$

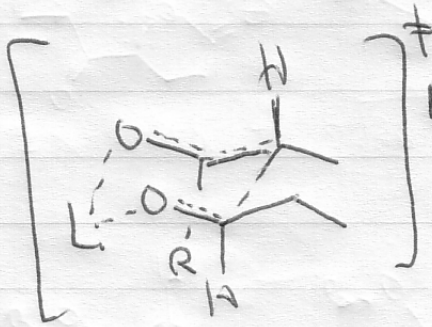
after rearranging

$$-\frac{E_a}{RT} = \ln k - \ln A \Rightarrow \ln k = \ln A - \frac{E_a}{RT}$$

equivalently,

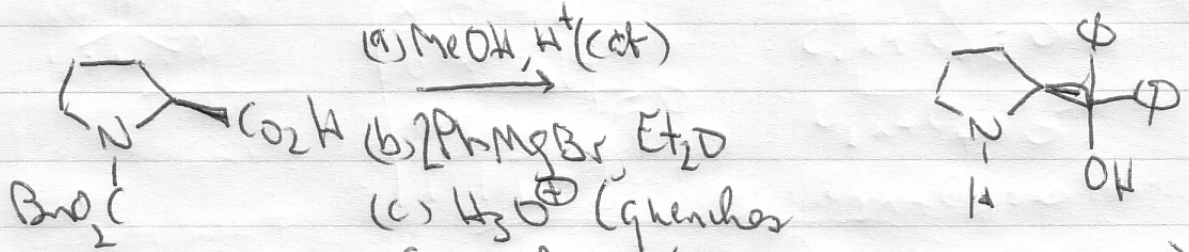
$$\text{or, } \log k = \log A - \frac{E_a}{2.3RT}$$

$$\therefore, \log A = 9.41 \text{ & } E_a = 1.74 \text{ kcal/mol}$$

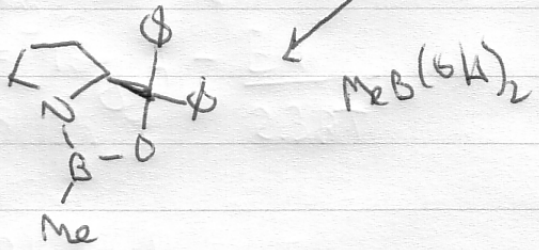


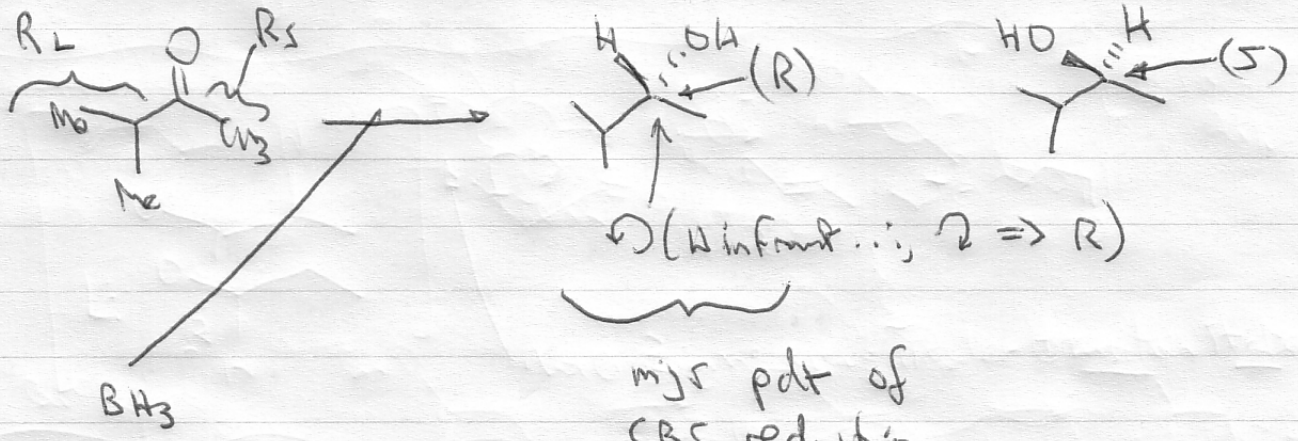
from 

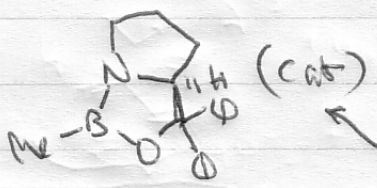
ate Zimmerman-Traxler transition state



review discussion in Ch. 45 of Clayden et al, & in Buchwald.



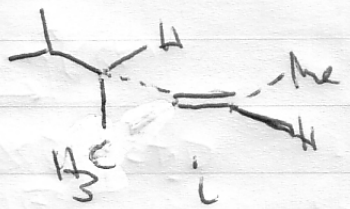




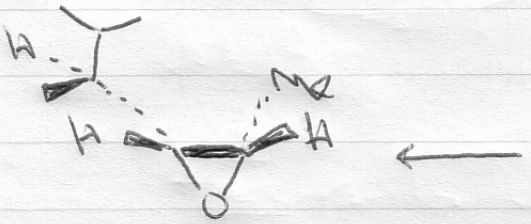
Note catalytic

(a) 

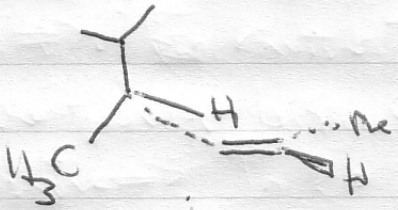
review the concept in the Clayden ~~etal~~ text

(b) 

examine a model. Notice the slight differences between these two conformers. If one assumes that i-Pr is larger than CH_3 (of course, it is) then preference ~~should be~~ is predicted to be shown

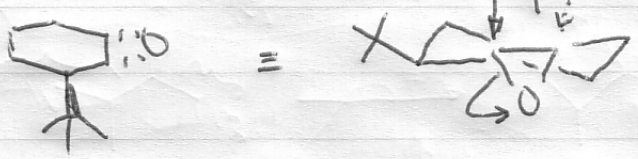


iii



ii

toward attack from the bottomside of ii to afford iii.



this approach → a twist boat via a twist-boat-like transition state. That's higher E than the "chair path."