$431 / 531$ Final
Suggested Solutions
(a)


b)



NOTE: THE TIN REAGENT IS ALSO FINE, BUT THE ORGANOZINC AND GRIGNARD REAGENTS WILL ATTACK THE KETONE TOO.



 WEAK ACID CAT



biil



a)



SIDE RXN is:...

3.a)


2) S BuLi , TMEDA

3) $\prod_{\mathrm{Br}} \mathrm{Br}$
4) $\mathrm{H}_{2} \mathrm{O}$

3) $\mathrm{p}-\mathrm{TS}_{\mathrm{S}}+\mathbf{N}=\mathrm{l}$
4) $\mathrm{NaBH}_{4}$
5) $\mathrm{H}_{2} \mathrm{O}$

1) $\mathrm{PhMg} \mathrm{Br}_{1} \mathrm{EF}_{2} \mathrm{O}$
2) $\mathrm{H}_{2} \mathrm{O}$


3) $\mathrm{H}_{2} \mathrm{O}$
4) $\left.{ }^{2} \mathrm{Pr}_{4} \mathrm{~N}^{+} \mathrm{RHO}_{4}^{-} \mathrm{Car}\right), ~ N M O$
5) ${ }^{\mathrm{Pr}} \mathrm{Pr}_{4}{ }^{+} \mathrm{RuO}_{4}{ }^{-}(\mathrm{ar})$,
NmO
b)

6) ${ }^{x}$ BuLi triest $\xrightarrow{T H F,-78^{\prime}}$
7) $\mathrm{Me}_{3} \mathrm{SiCl}$

8) ${ }^{\wedge} \mathrm{Bu}_{4}$ ? , TMEDA, THF. $-78^{\circ}$
9) 


toluene, A

c)



d)


1) ${ }^{1}$ BuLi $\xrightarrow[\substack{\text { 21 } \\ H \rightarrow-}]{T+F_{1}-30^{\circ}}$

e)


2) Li TMP


3) $\mathrm{Me}_{3} \mathrm{SiCl}$




4) $L D A, T A F$
f)


5) 
6) $\mathrm{H}_{2} \mathrm{O}$

7) $(R)^{x-\operatorname{BiN}}$


Bonus: From Pelkey, E.t.; Chang, ha; Gribble, G. W.
J. CHEm. Soc. Chem. Common 1996, 1909.



But mitat happens Here:







