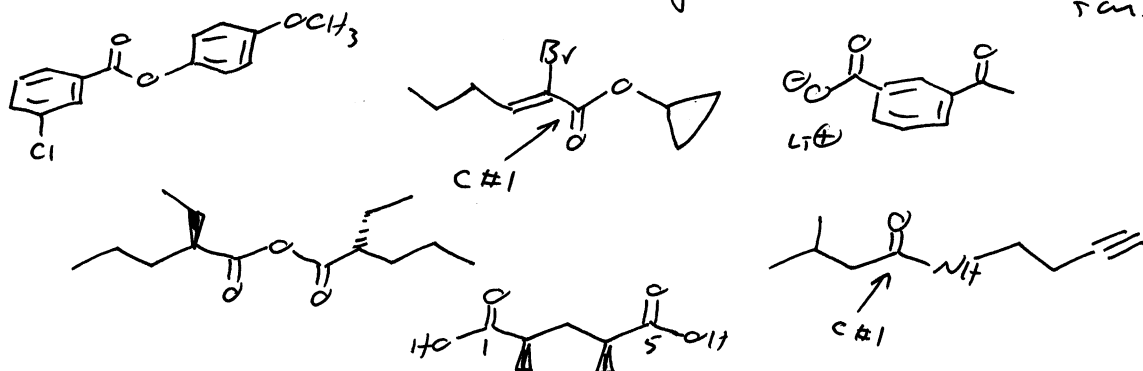
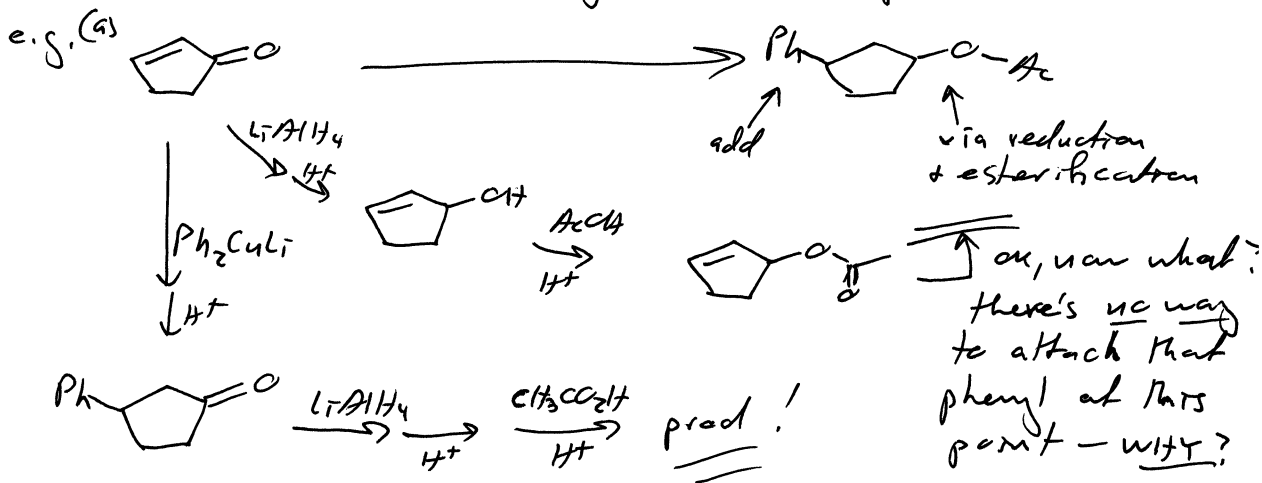


1. "organyl organoate" construction \Rightarrow ester!
 don't confuse this with "alkali organoate", which must be rare!



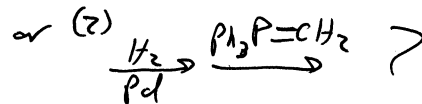
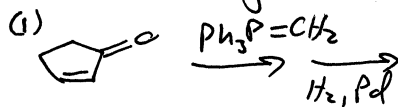
2. In each case, something needs to be attached to the original β -C. Should this be done before or after rxn at the carbonyl? This is important.

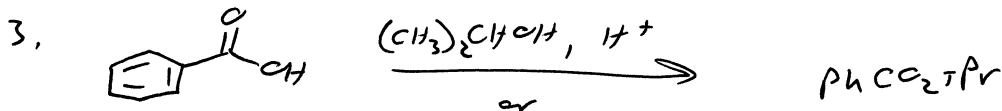


(b) same idea - $(\text{CH}_2)_2\text{CuLi}$ first, then use Grignard chem to add the isopropyl group (do we have to worry about this adding to the vinyl instead???)
 di-vinyl copper-Li
 that's $\text{CH}_2=\text{CH}-\text{Cu}^{\ominus}-\text{Li}^+$

(c) Hmmm...
 looks like a job for Wittig.

so which rxn sequence will work?
 neither? both?





or
1. NaHCO3; 2. CH3CH2CH2OH

aldehyde?!

we can't do that directly - we need to reduce to the 1° alcohol & reoxidize

so LiAlH4; H+ \rightarrow c1ccccc1CO, then CrO3, pyr. -

oh, yeah, and chlorinate when you have a clear meta-director present.

now, we can take that 1° alcohol & treat it with



+ benzaldehyde + CH3CH2CH2-CH=PPh3 makes the alkene (E+Z)

4. The ester can be made in the same way as above. The carboxylate salt has to come from the carbox. acid. so oxidize (aq H2CrO4 or permanganate), nitrate, then deprotonate with the sodium salt of some suitable base.

(c) Here we need to use Grignard or Wittig chem to make a new CC bond -

