

Addition Of Grignard Reagents To Aldehydes And Ketones

from chapter(s) _____ in the recommended text

A. Introduction

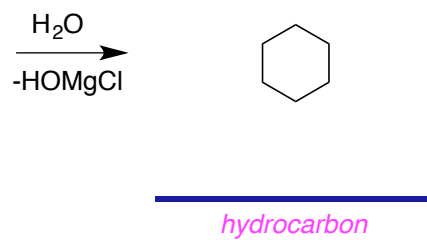
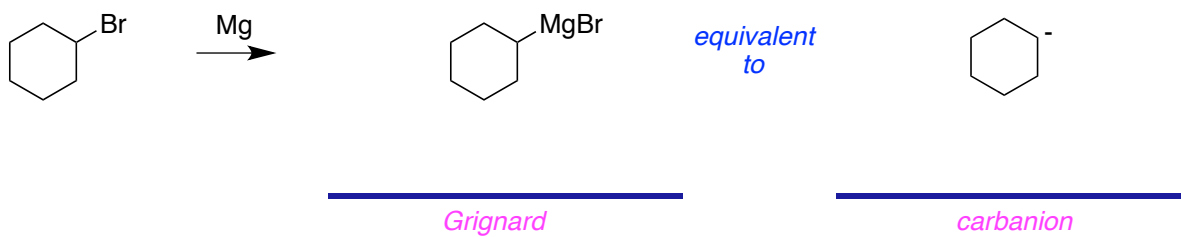
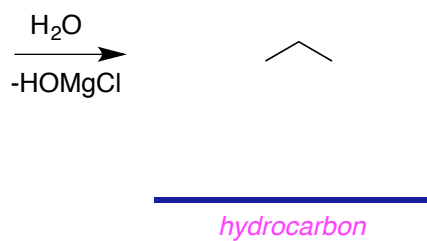
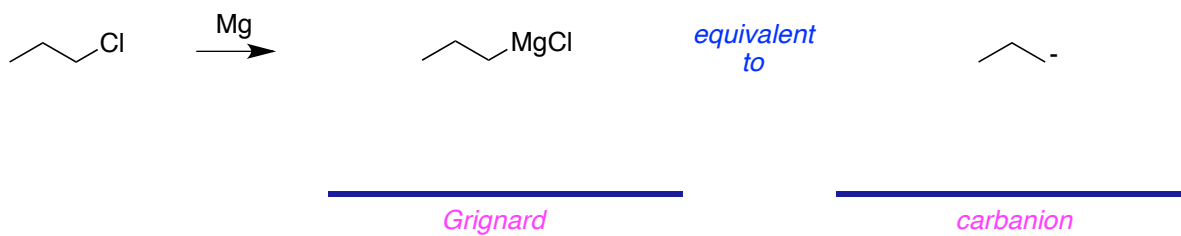
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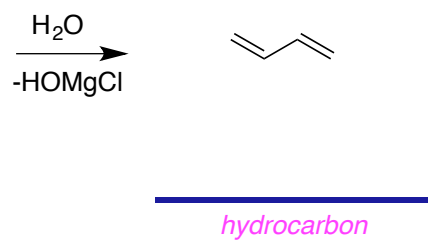
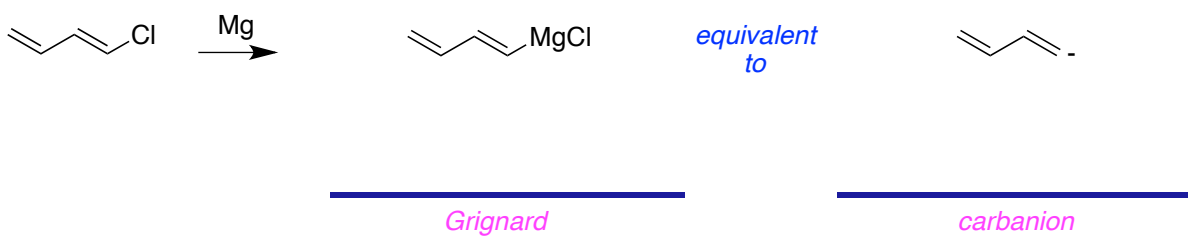
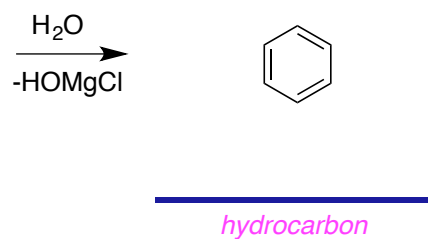
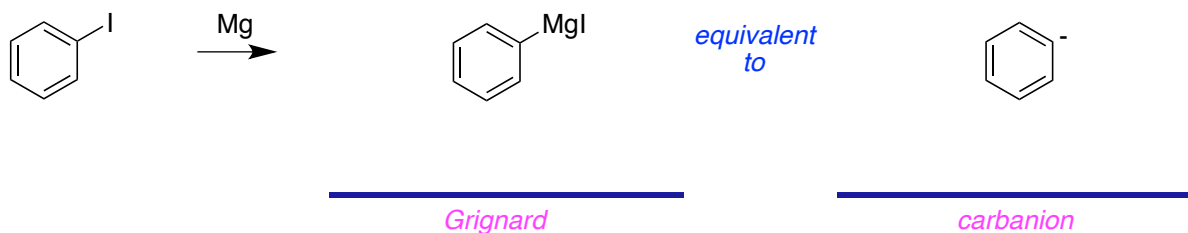
B. Grignard Reagents: A Type Of Carbanion Equivalents

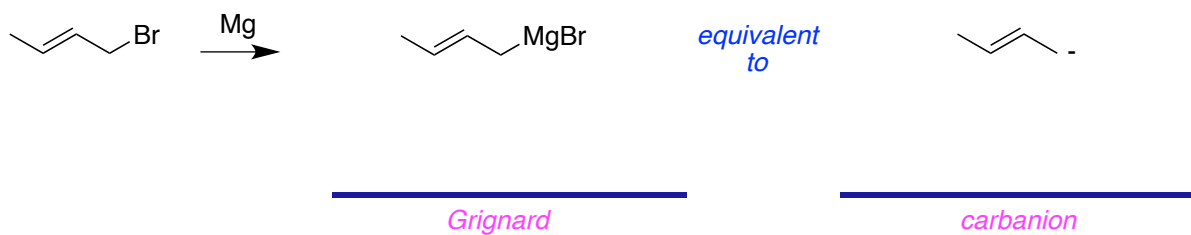
magnesium;

strong base

cannot be formed from compounds liberating *ethyne*.



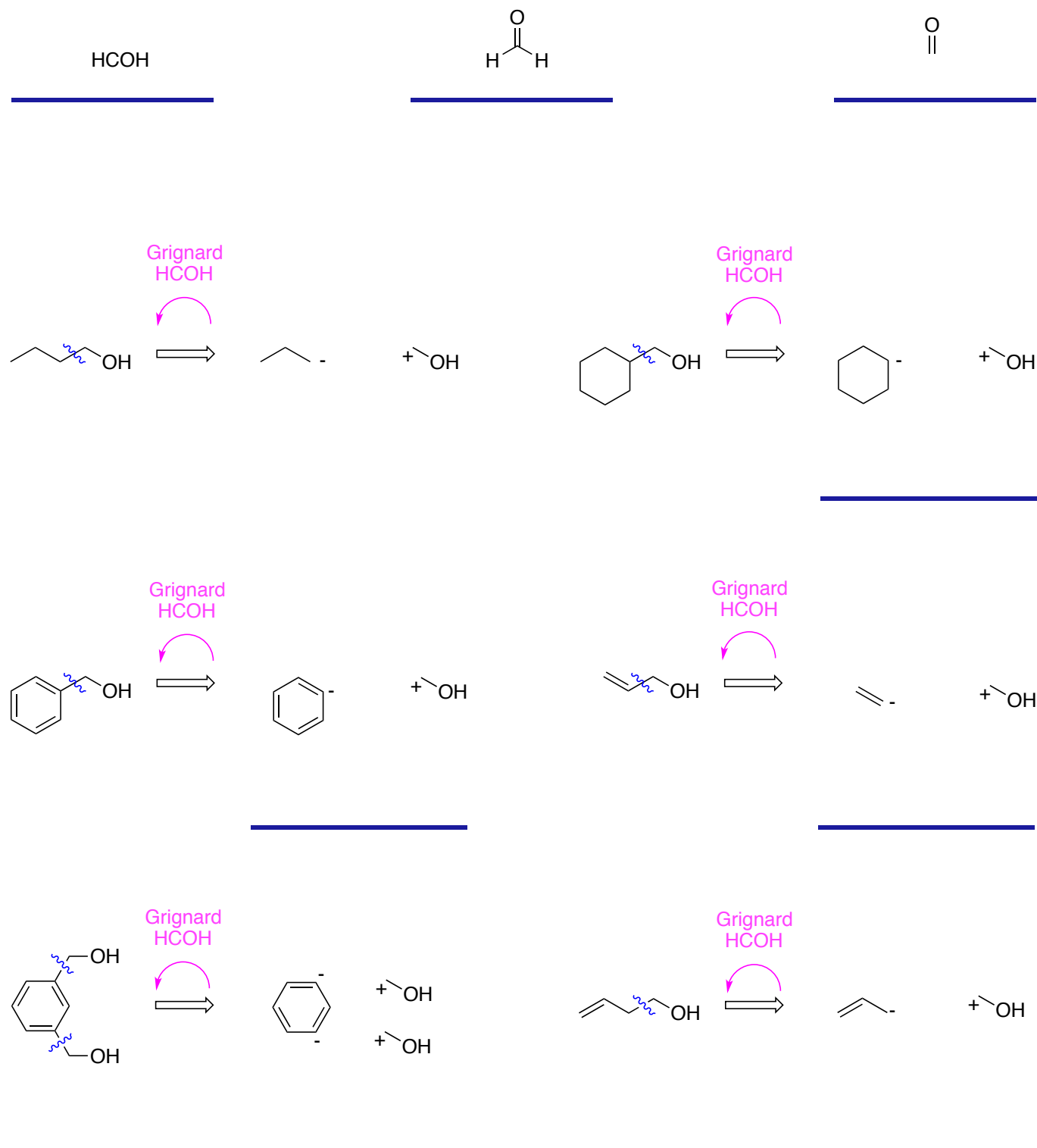


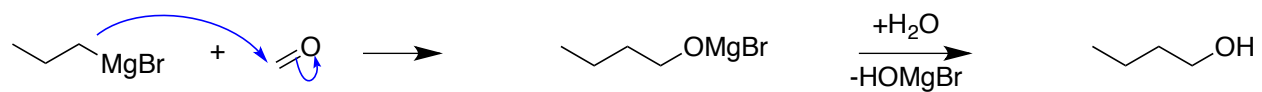


hydrocarbon

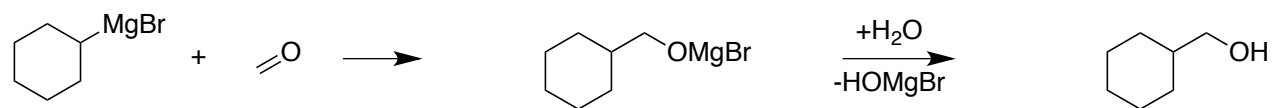
1,2-dichloroethane	<u>bromobenzene</u>	<u>benzyl bromide</u>	butane
<u>allyl chloride</u>	<u>2-chloropropane</u>	1,2-diiodopropane	2-chloroethanol
diethyl ether	fluoroethane	bromoethanal	3-iodopropanol
<u>chloro(methoxy)methane</u>	1-bromo-3-methoxy-ethanal		<u>bromoethane</u>

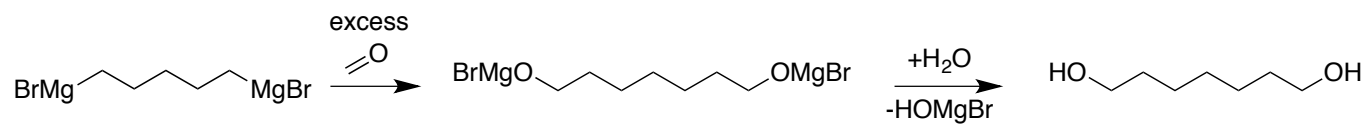
C. Reactions Of Methanal With Grignard Reagents

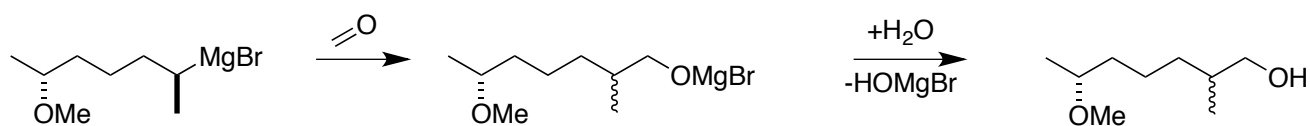
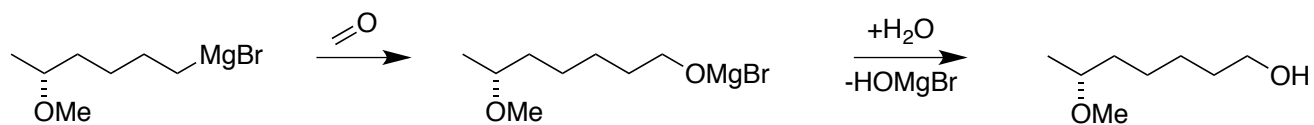




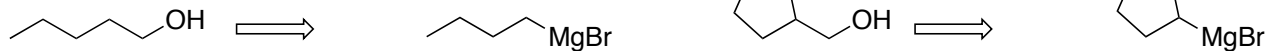
primary alcohols
one more



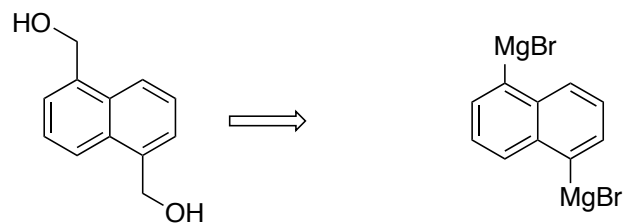
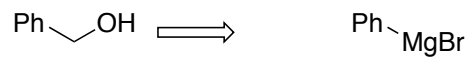




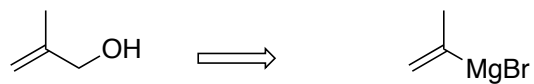
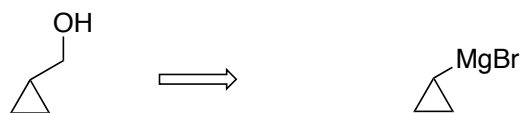
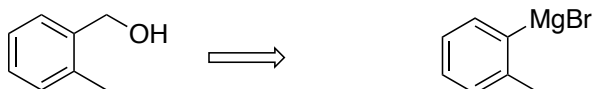
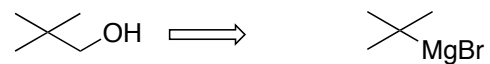
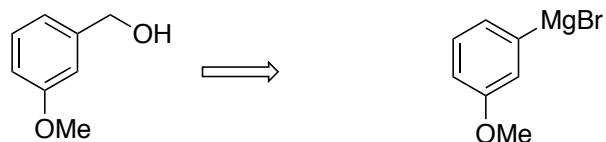
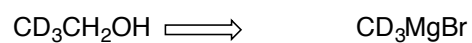
primary



a di-Grignard

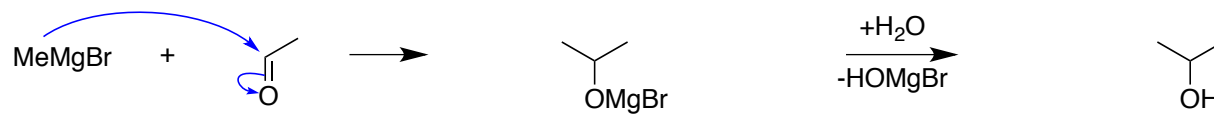


a di-Grignard

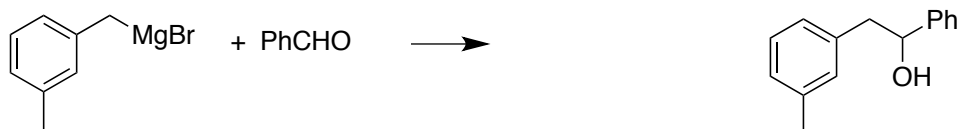
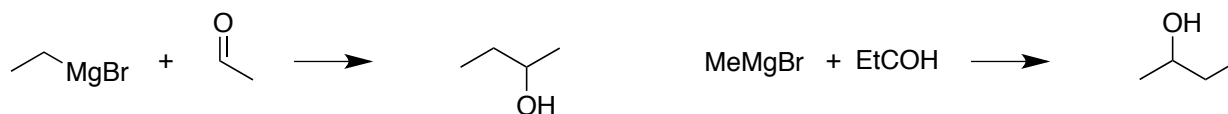


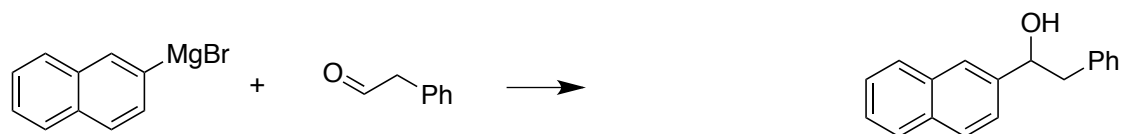
more basic than
 compounds *irreversibly*.
 primary because methanal has *two*
 secondary alcohols.
 is unique

D. Reactions Of Other Aldehydes With Grignards



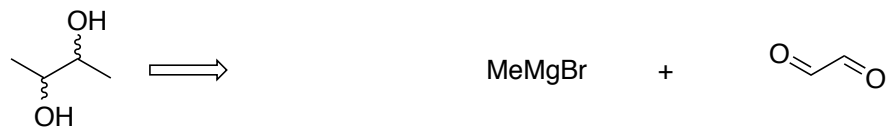
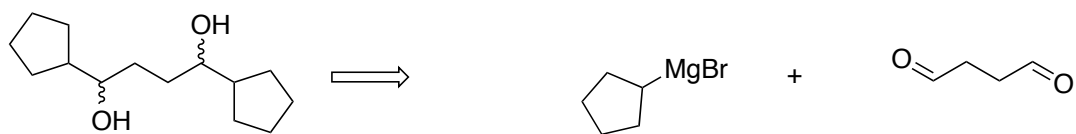
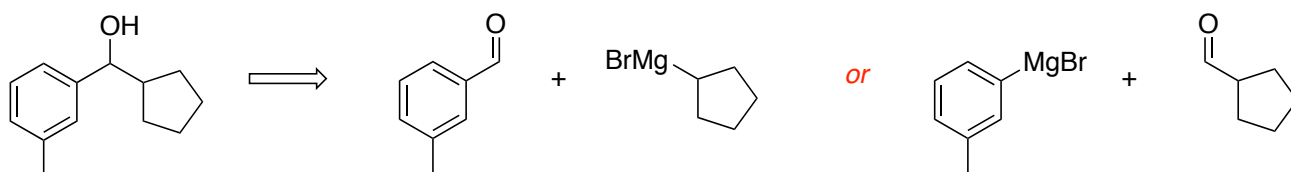
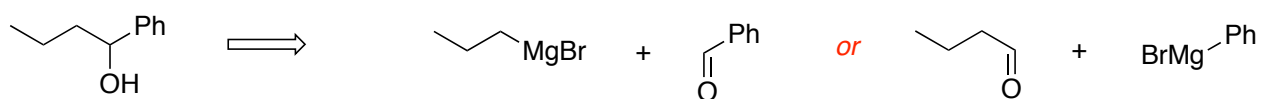
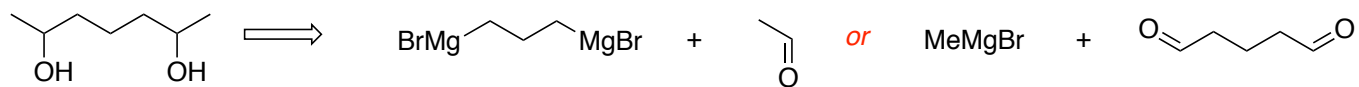
give *secondary* alcohols with *the same*





secondary alcohols

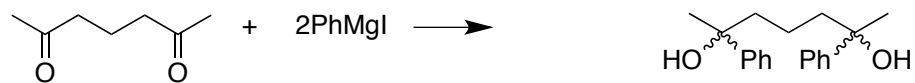
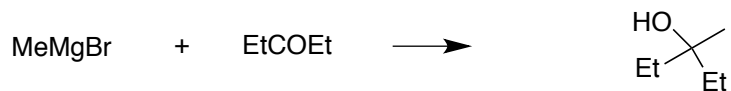
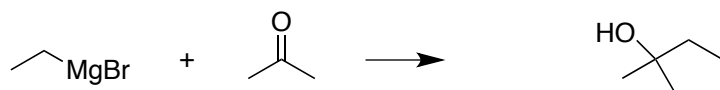


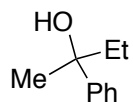
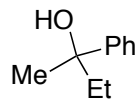
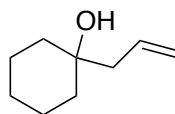
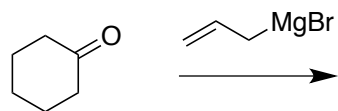
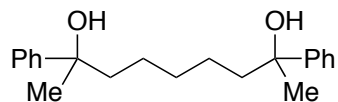
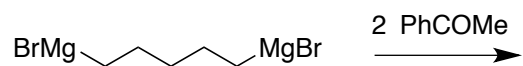


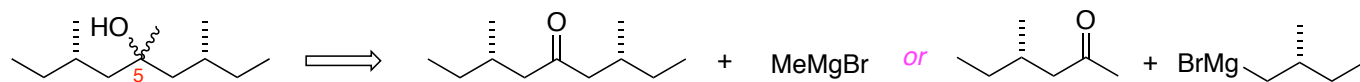
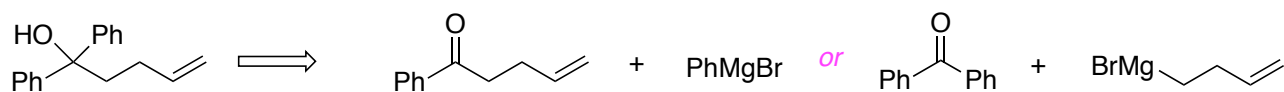
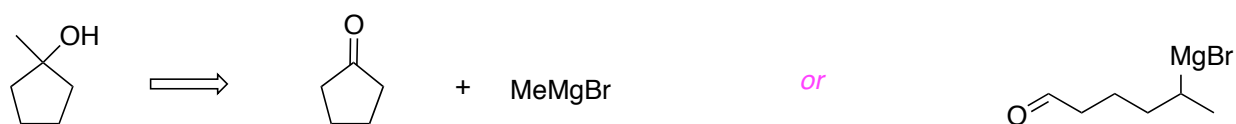
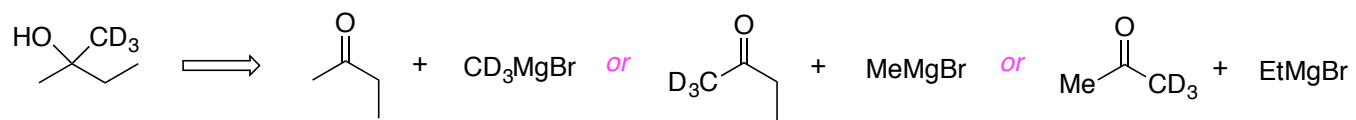
E. Reactions Of Ketones With Grignards



tertiary alcohols.
the same
must be the

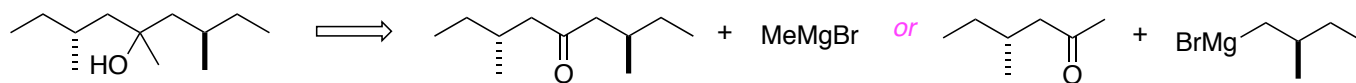






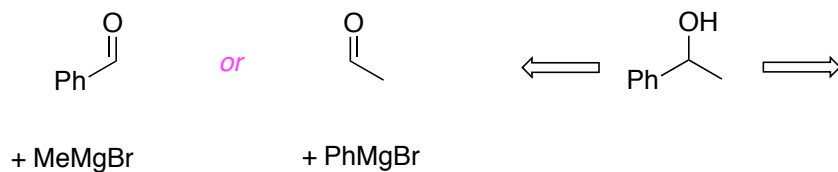
is

is not possible

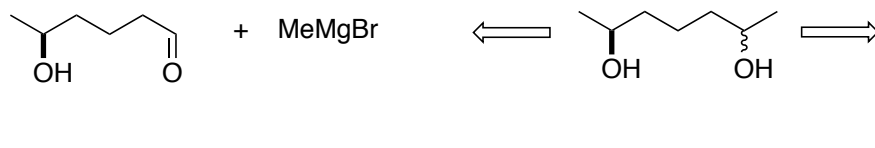
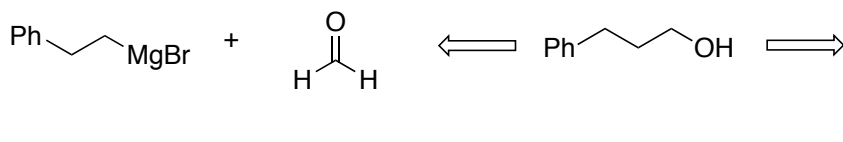
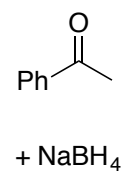


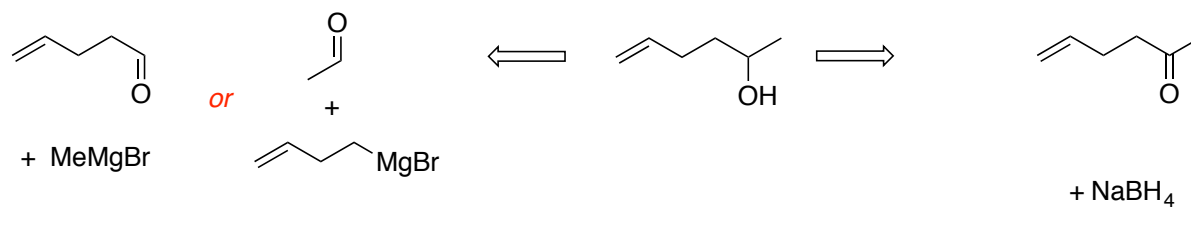
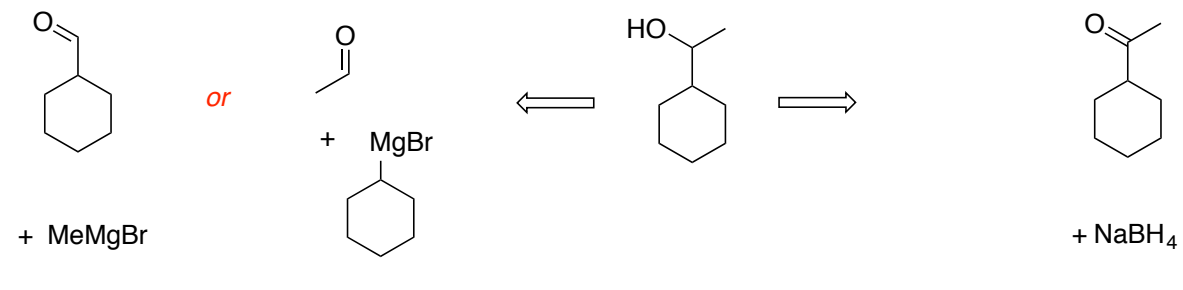
F. Complimentary Grignard and Hydride Reductions

a Grignard route

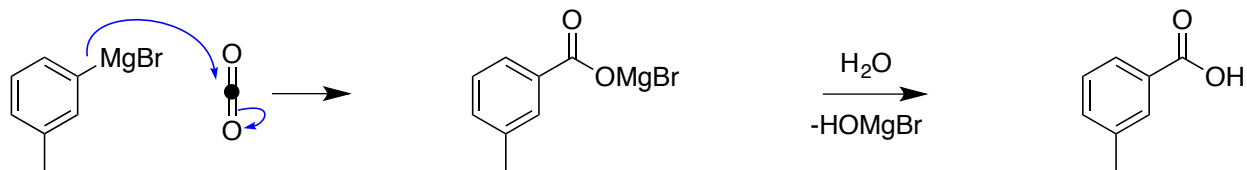


hydride route



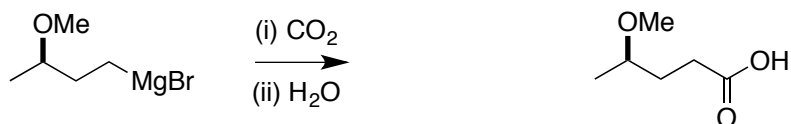


G. Reactions Of Carbon Dioxide With Grignards

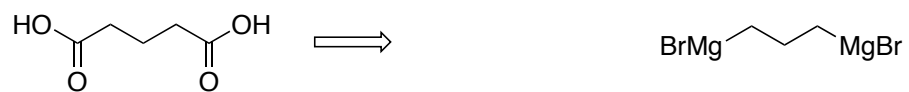
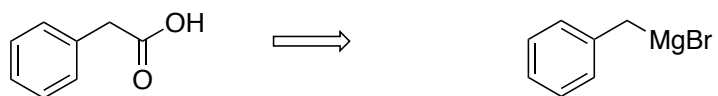


carboxylic acid.

one more carbon than the Grignard.







almost always