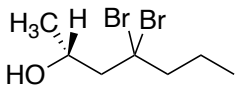
1/31/2025

Chemistry 2521 Quiz 1

BJM

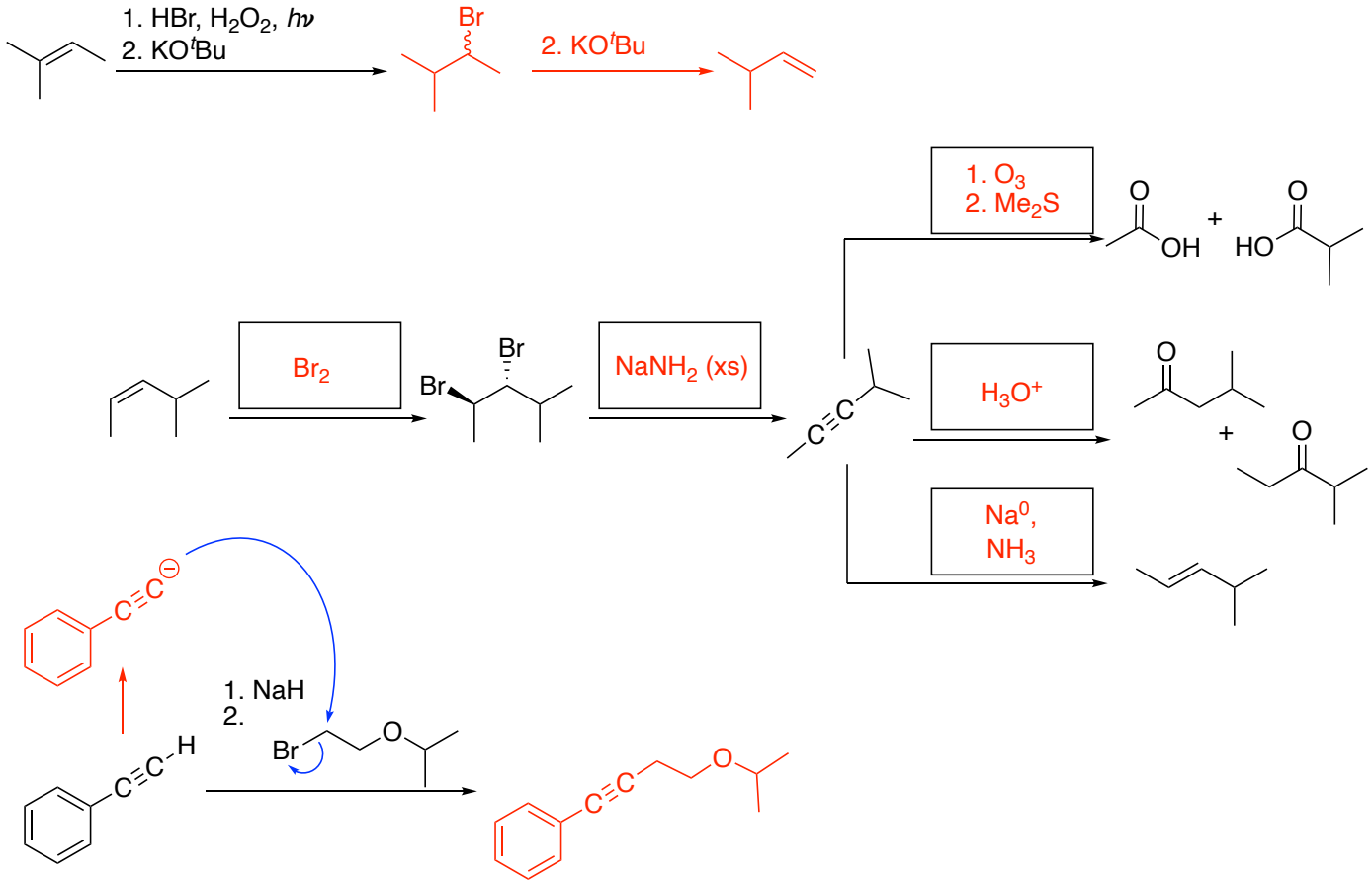
Name: Key

1. (4 pts) Provide the IUPAC name for the compound below.

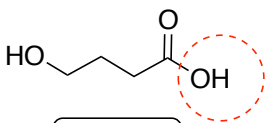


stereochemistry = 2 points!

2. (18 pts) For the following reactions, give the major product or missing reagent(s).

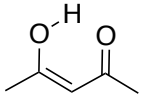


3. (10 pts) Below each structure indicate if it contains a primary (1°), secondary (2°), tertiary alcohol (3°), or no alcohol (none). Also, provide the pKa of the molecule (i.e. most acidic H on the molecule).



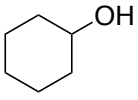
1°

pKa= 5



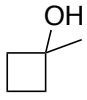
none (enol)

pKa= 10



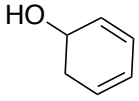
2°

pKa= 16



3°

pKa= 17

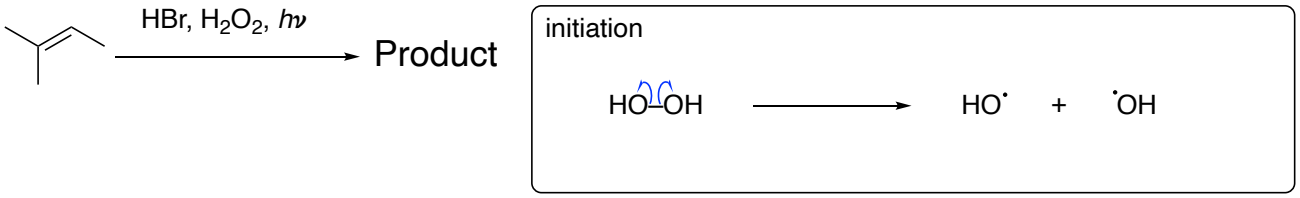


this is not phenol

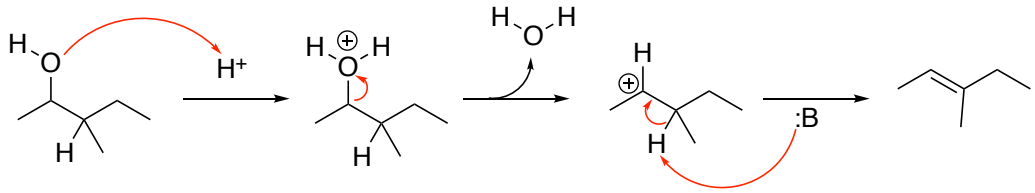
2°

pKa= 16

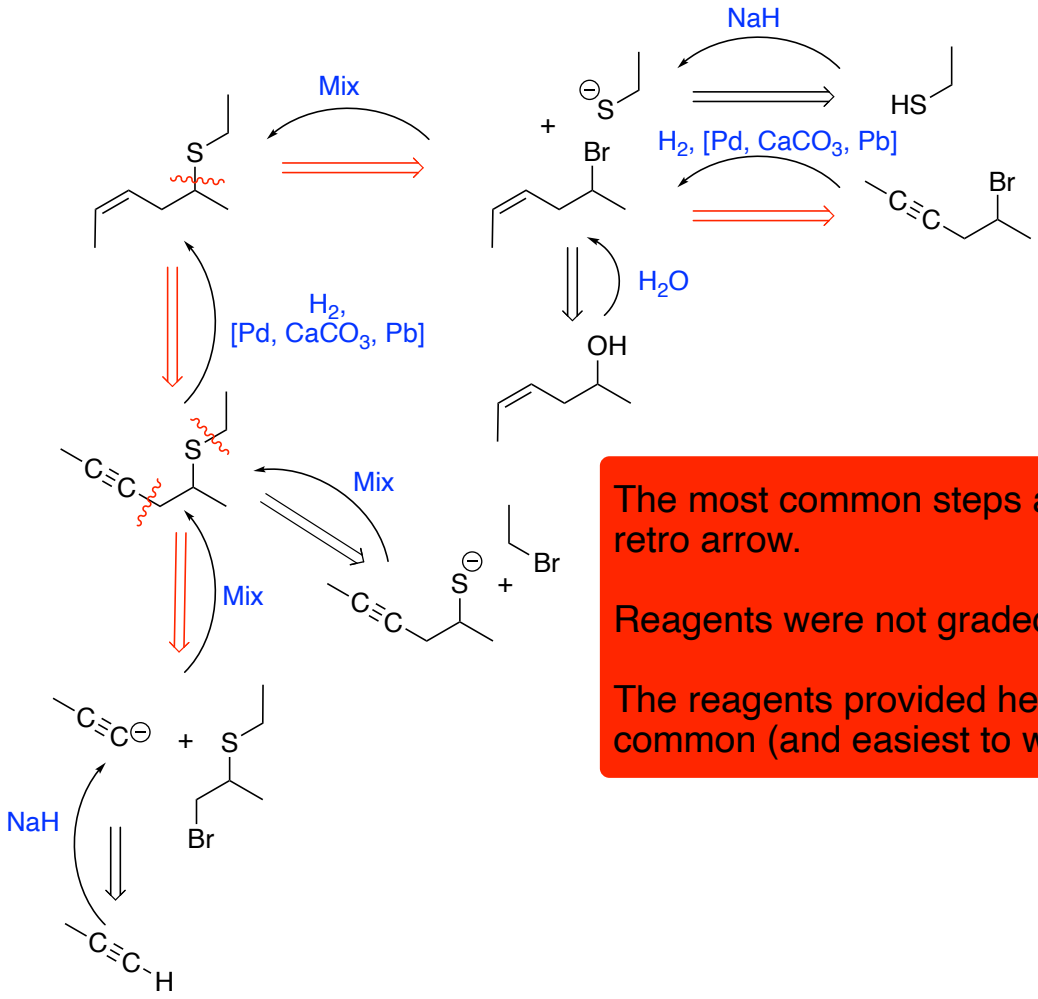
4. (3 pts) Give the initiation step for the following reaction



5. (2 pts) Draw in the mechanistic (curly) arrows for the following reaction.



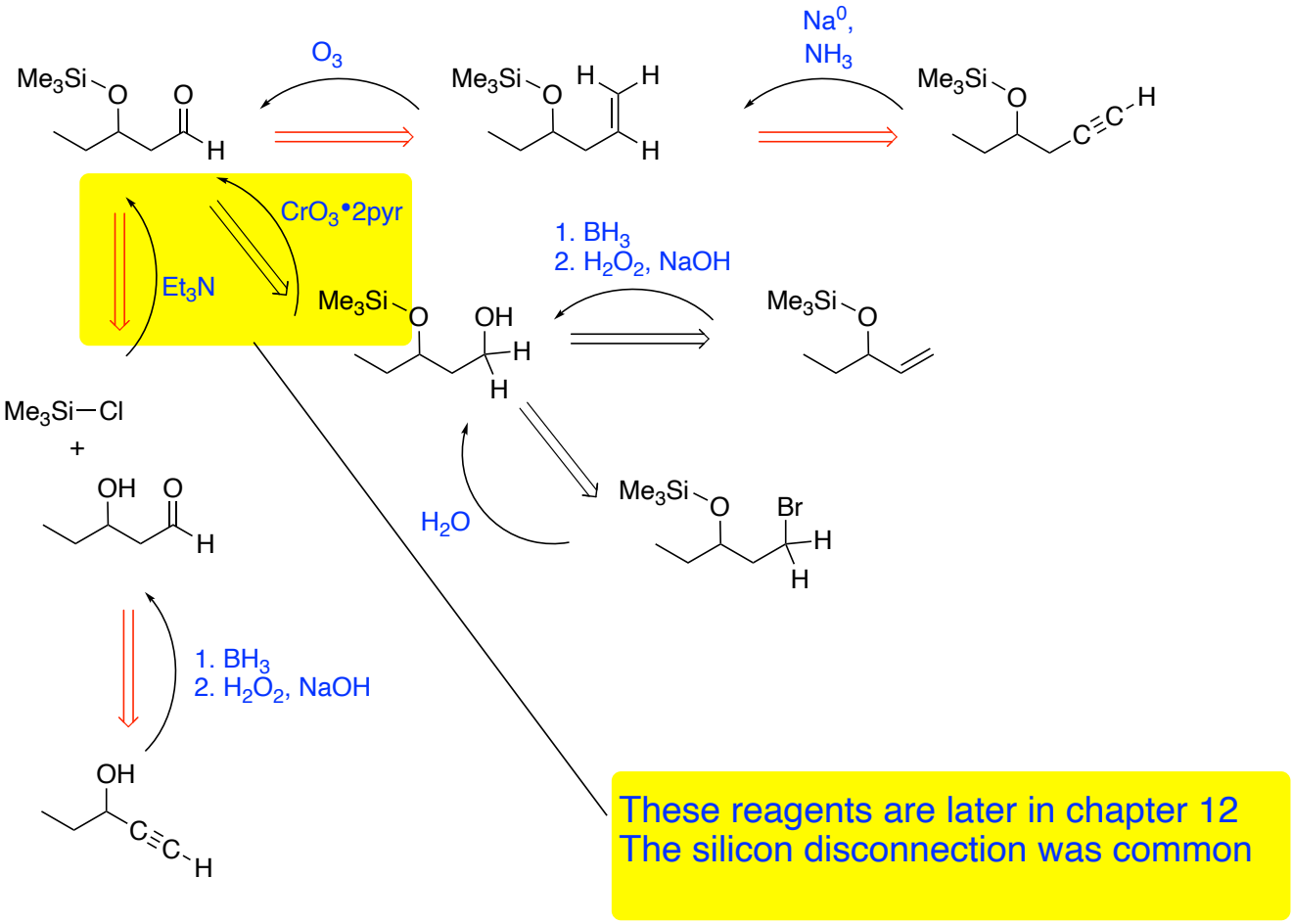
6. (8 points). For the two molecules below, show two retrosynthetic steps for each. Reagents should be provided. This is your first examination question on retrosynthesis, so this is meant to be kinda easy.



The most common steps are indicated with a red retro arrow.

Reagents were not graded but were marked.

The reagents provided here are the most common (and easiest to write)


Me3Si
O
O
H
O3
H
H
H
Na0,
NH3
C≡C
H
CrO3•2pyr
Et3N
1. BH3
2. H2O2, NaOH
OH
Me3Si—Cl
+
H2O
Br
1. BH3
2. H2O2, NaOH
These reagents are later in chapter 12
The silicon disconnection was common