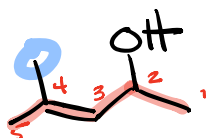


# Exam 1 Review

## Mandatory part

### Nomenclature



E or Z or neither

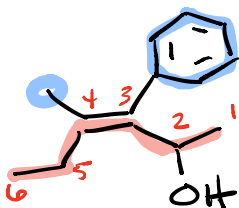
4-methyl

3-en

2-ol

pent

4-methylpent-3-en-2-ol



3-phenyl

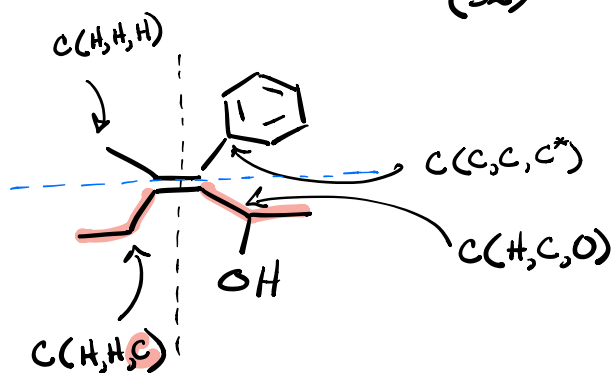
4-methyl

3-en

2-ol

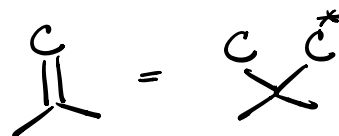
(3Z)-

(3Z)-4-methyl-3-phenylhex-3-en-2-ol

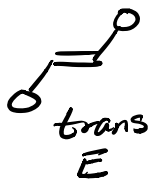
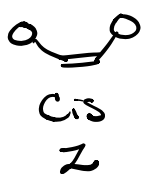


Z-alkene

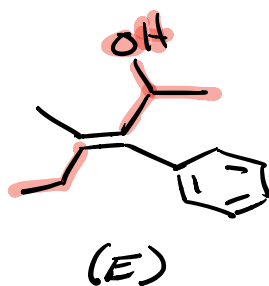
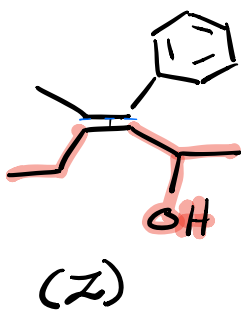
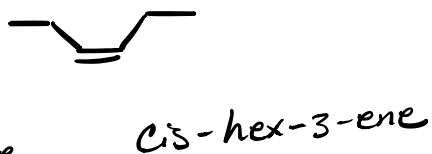
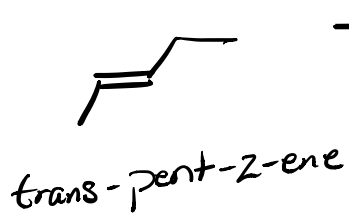
E-alkene



Cis & trans vs. E & Z

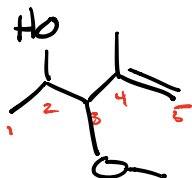


Cis & trans work for simple molecules

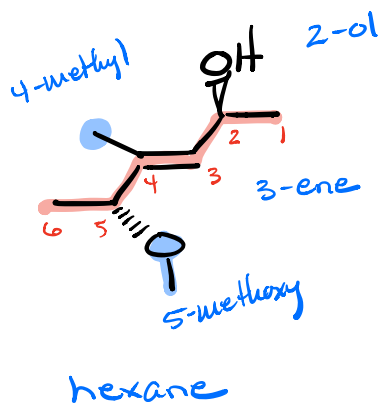



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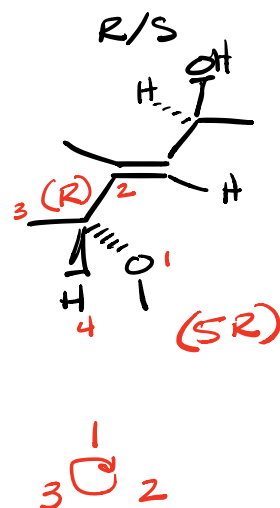
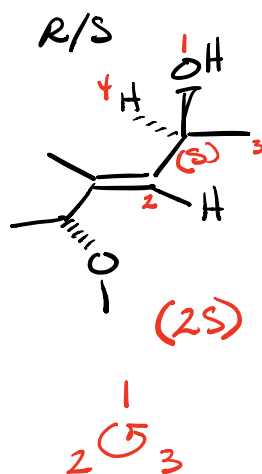
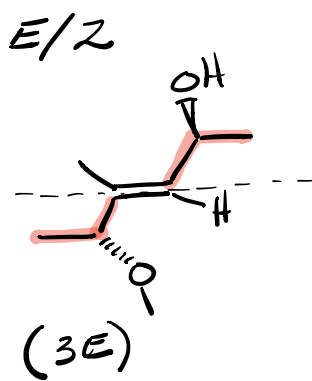
3-methoxy-4-methylpent-4-en-2-ol



methoxypropyl ether  
1-methoxypropane



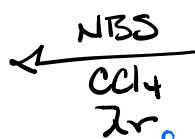
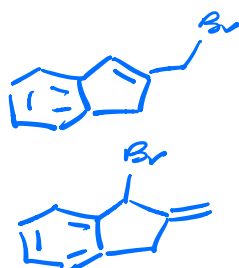
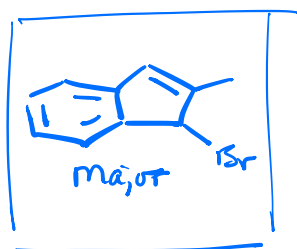
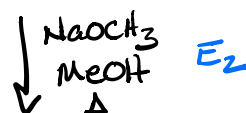
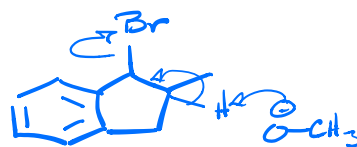
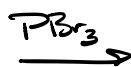
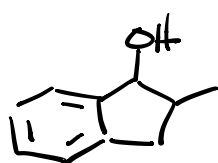
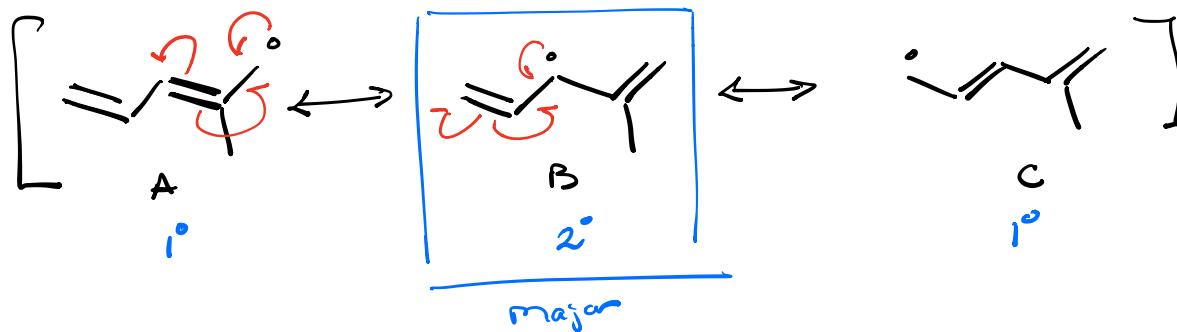
3 - Stereo groups  
E/Z  
R/S @ 2 & 5



$(2S, 3E, 5R)$  - 5-methoxy - 4-methyl hex - 3-en - 2-ol

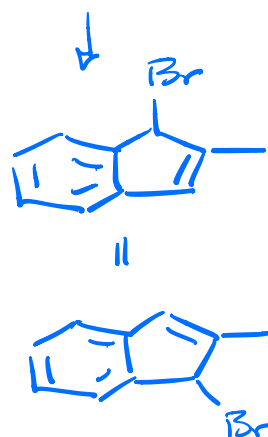
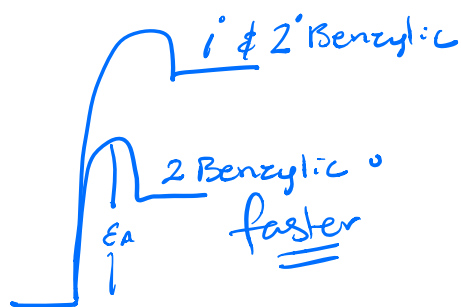
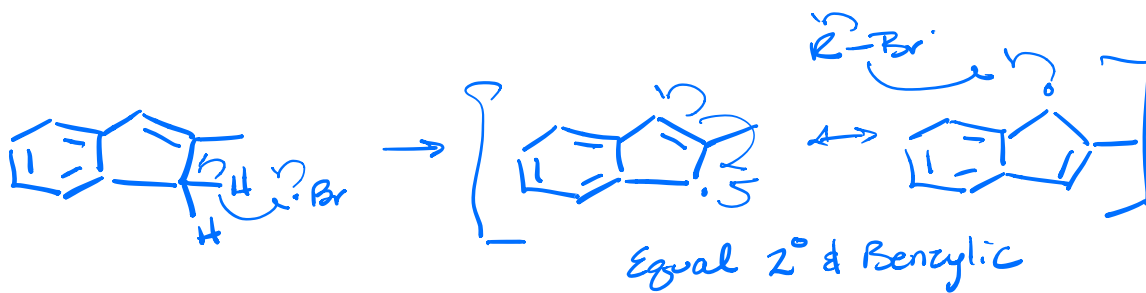
Draw the resonance for the free Radical & label the major resonance Contributor.

$\curvearrowright$   $\curvearrowright$  use the correct arrows

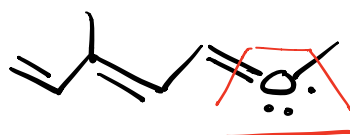
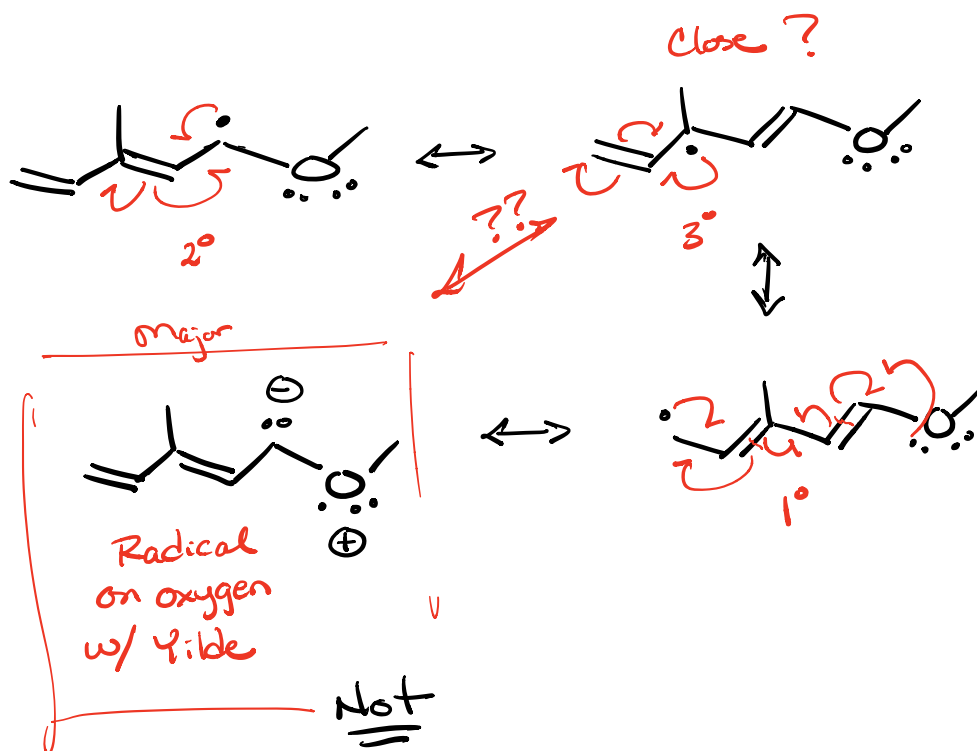


free Radical bromination

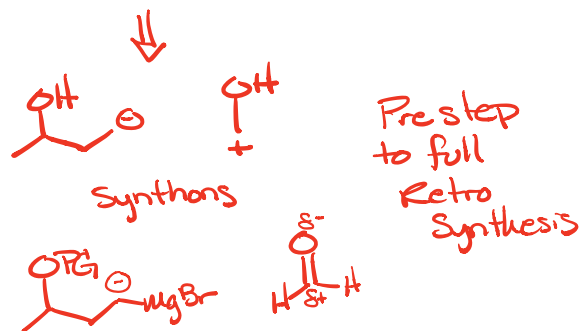




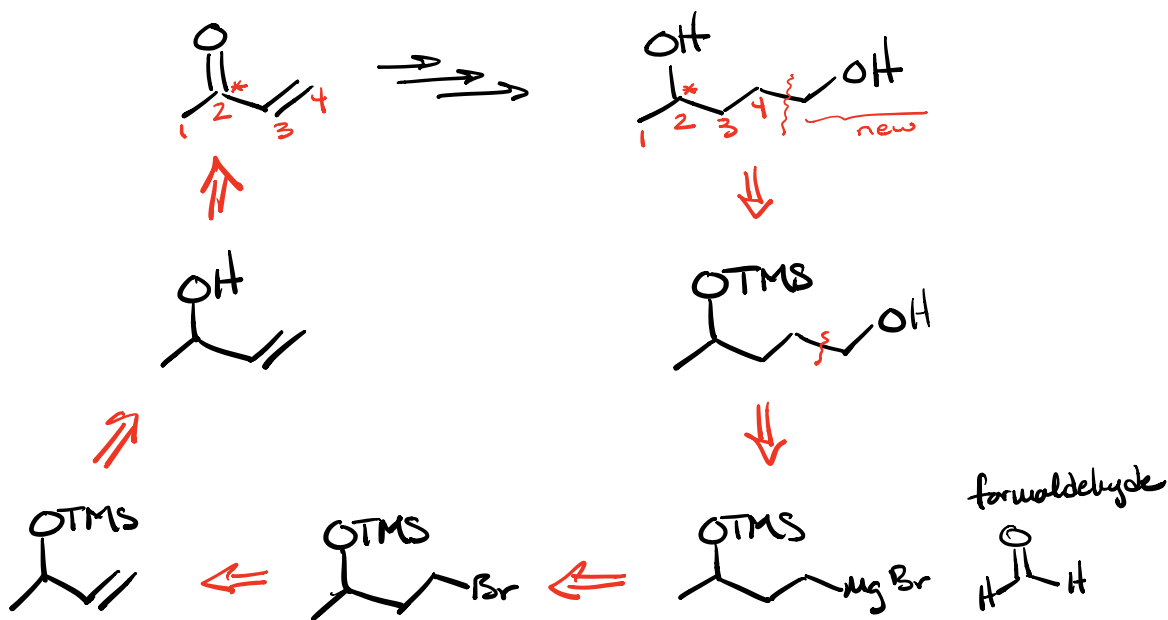
Question about oxygen w/ free Radical Resonance.



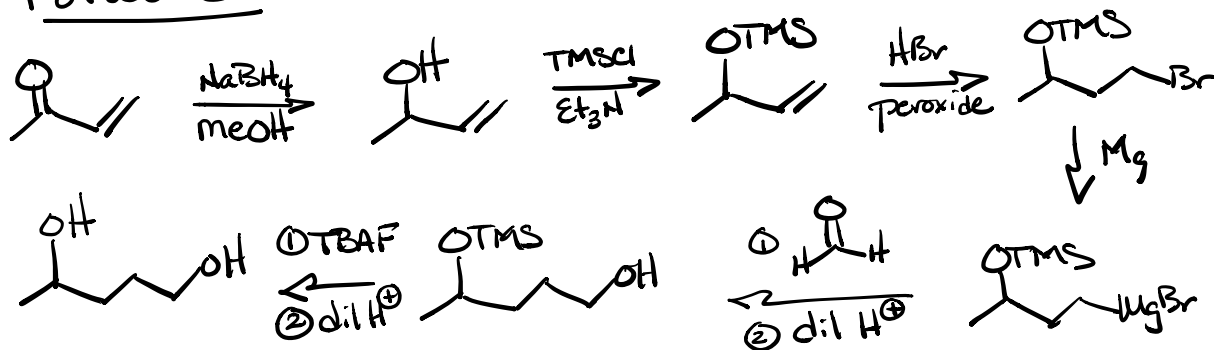
9e<sup>-</sup> total  
violates octet rule  
oxygen period 2  
is restricted to 8e<sup>-</sup>

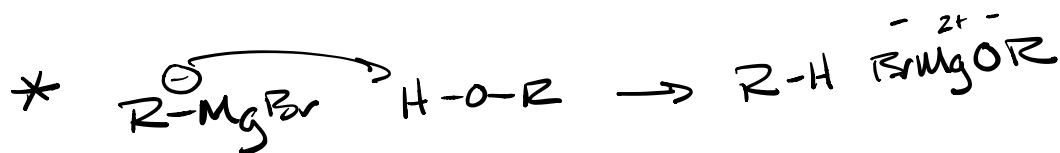
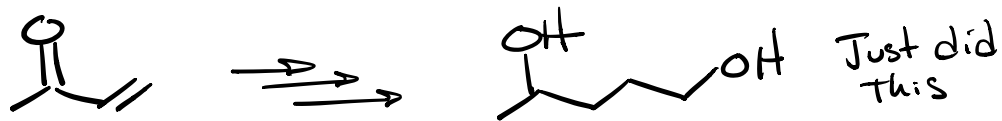


### Full Retrosynthesis



### Forward

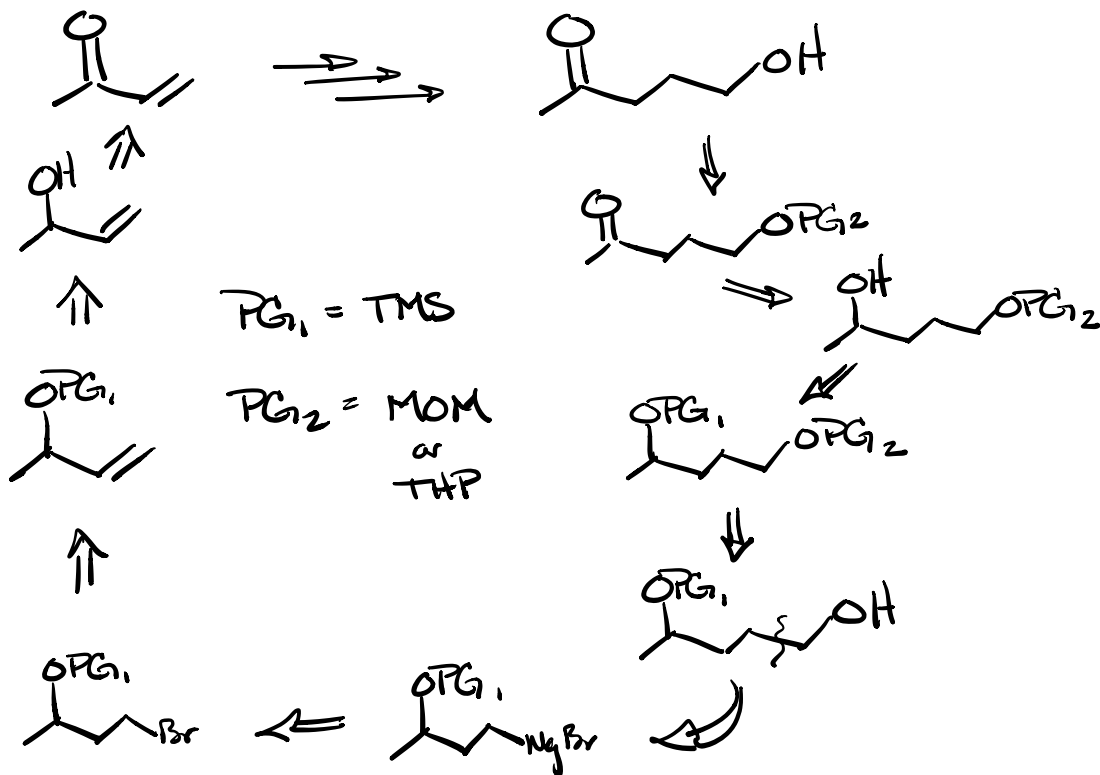




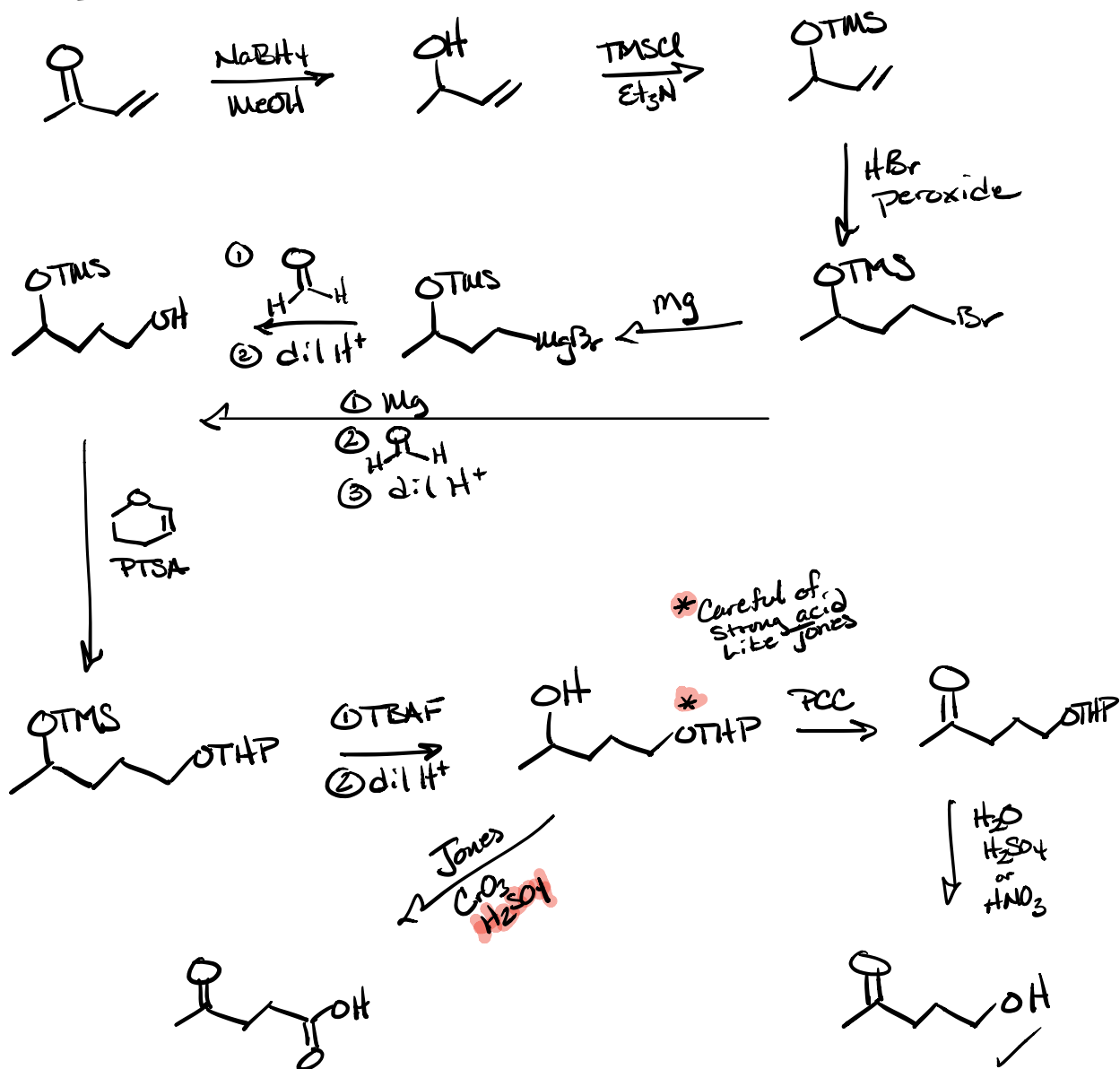
No alcohols



no carbonyls!



# Forwards



Protonation  
dilute  $\text{H}^+$   
 $\text{H}_2\text{O}$   
 $1\text{M HCl}$

Elimination or S<sub>E</sub>C  
Conc  $\text{H}^+$   
 $6\text{M HCl}$   
 $3\text{ or }4\text{ M H}_2\text{SO}_4$   
 $\text{Conc. H}_2\text{SO}_4$