

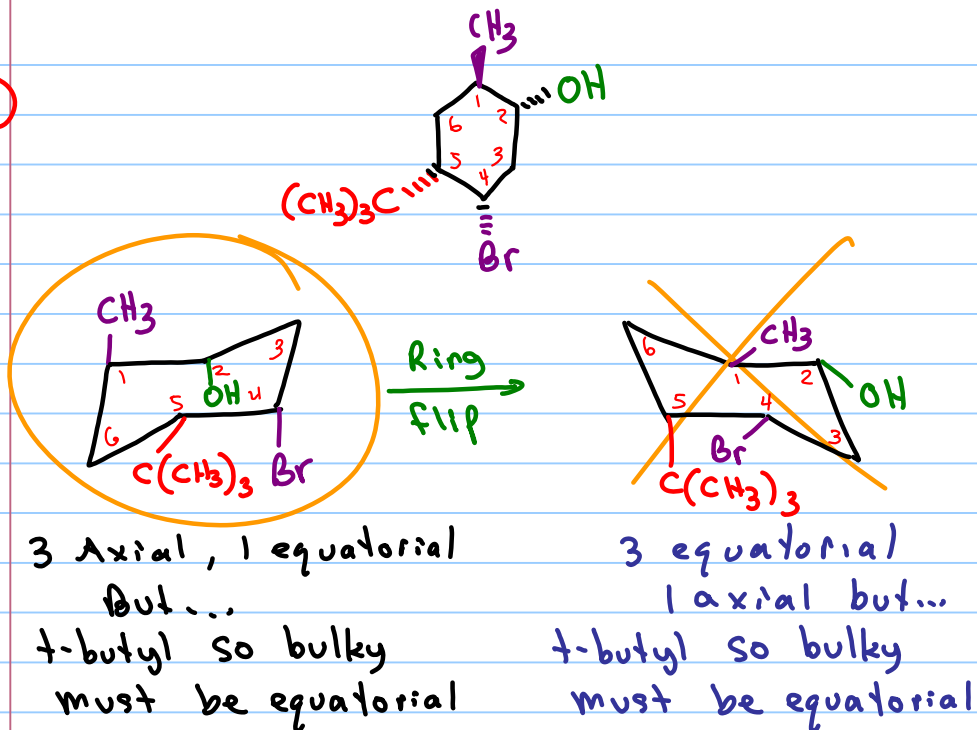
SOLUTIONS TO
Organic Chemistry I
Practice Final Exam

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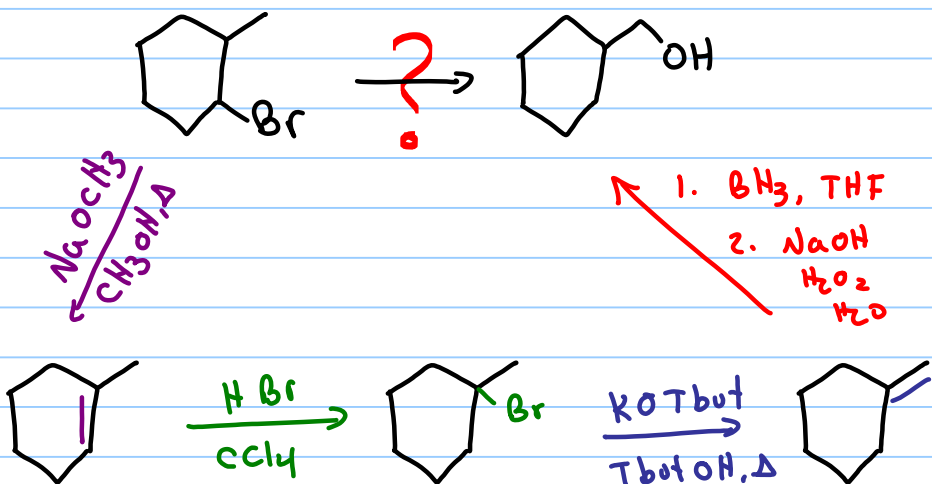
Exam + video solutions

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①

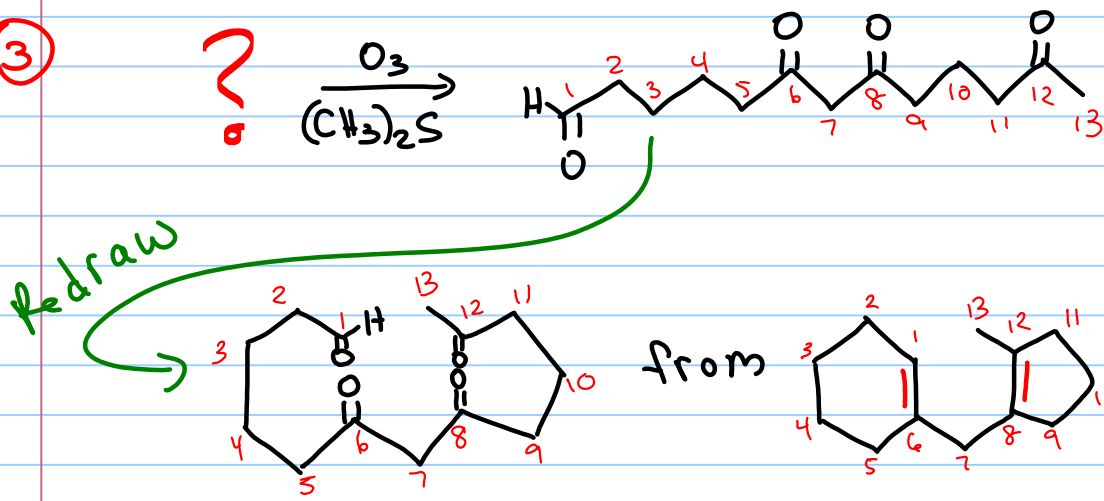


②

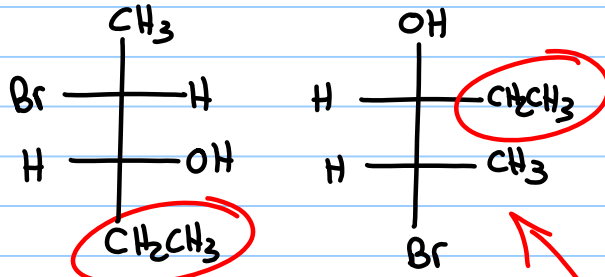


Note: alternative reagents may be used.

③

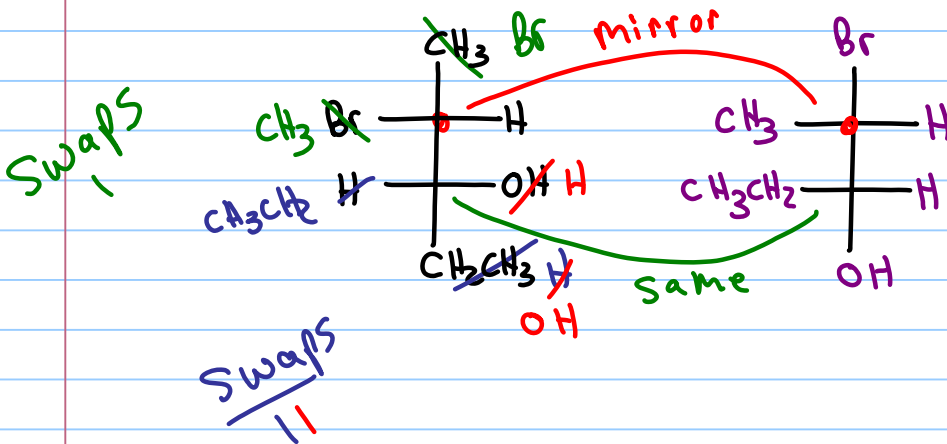


4



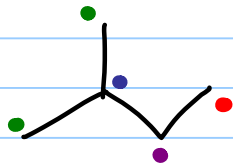
Redraw

flip upside down

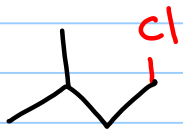


2 chiral c, 1 = mirror 1 = same
Diastereomers

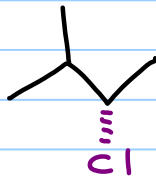
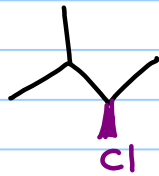
5



= 4 unique structures

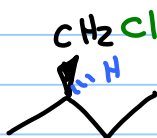


achiral

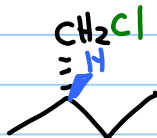


achiral

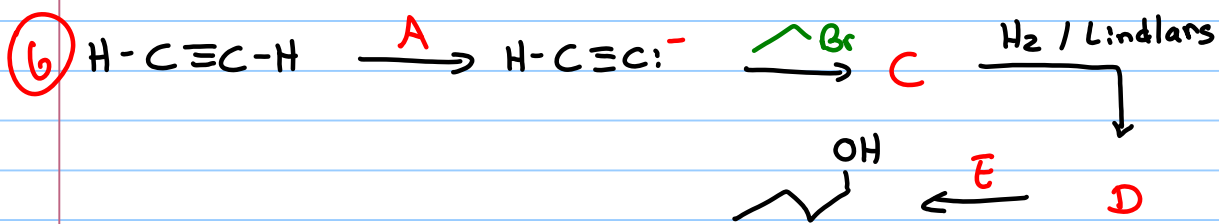
Trick



+



6 products

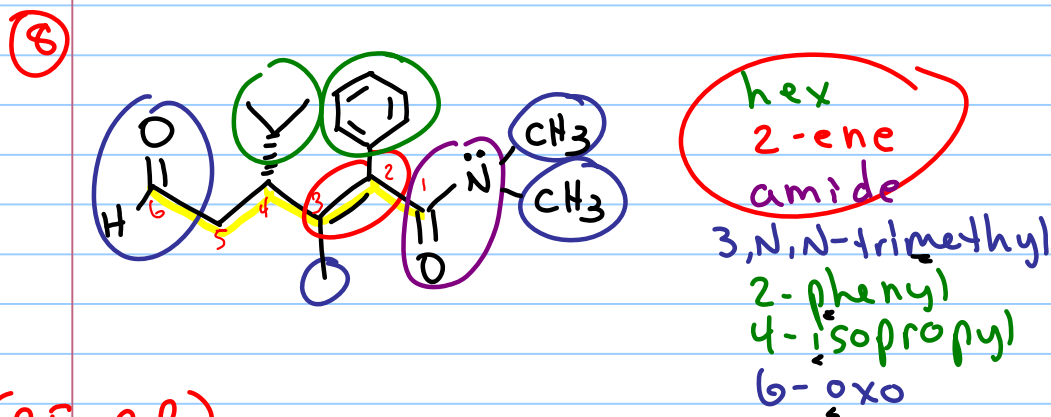
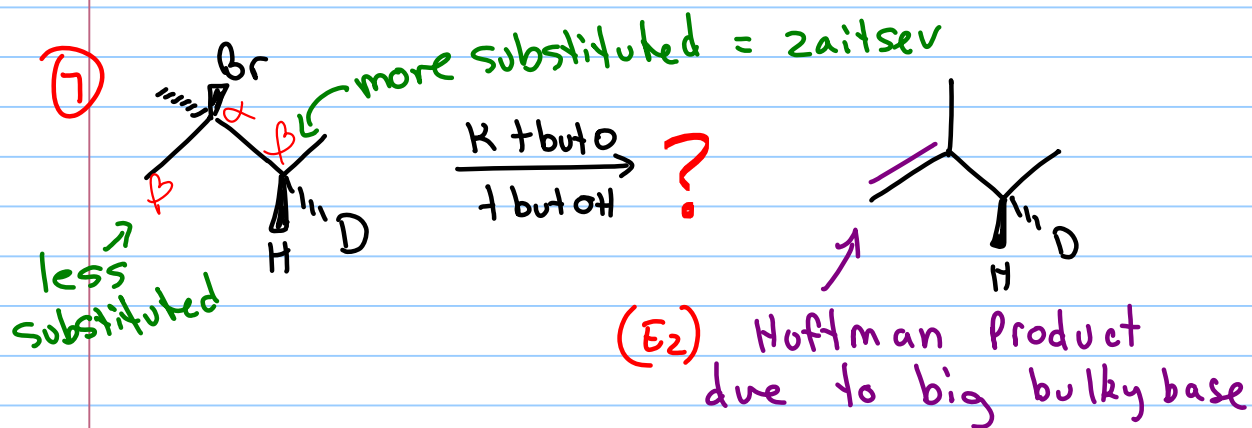


A = NaNH_2 in $\text{NH}_3(\ell)$ via acid/base

C = $\text{H}-\text{C}\equiv\text{C}-\text{CH}_2\text{CH}_3$ via $\text{S}_{\text{N}}2$

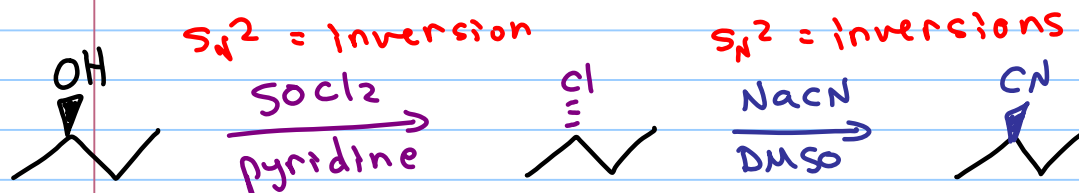
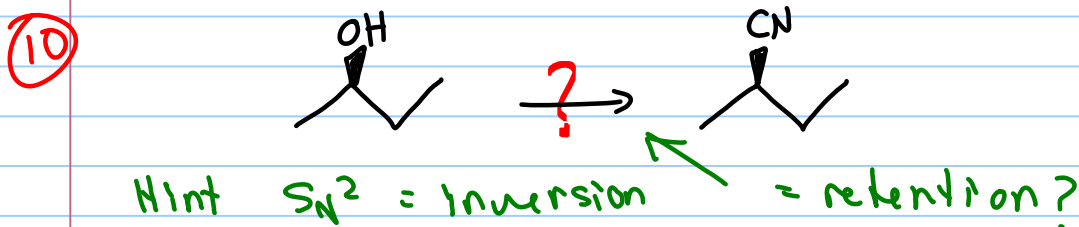
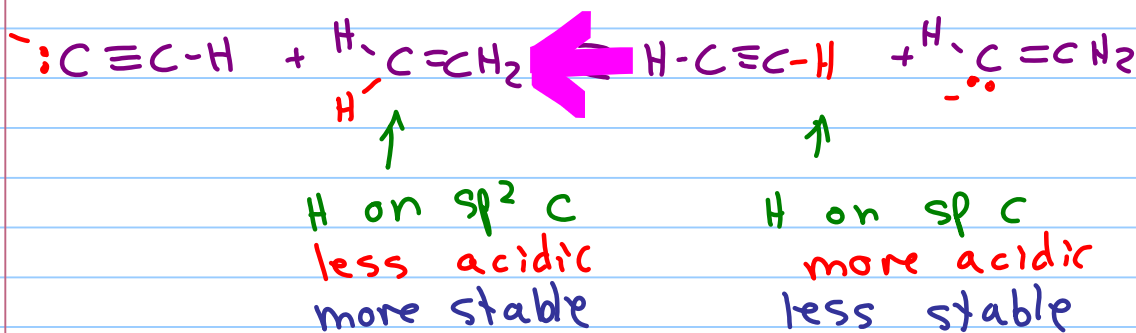
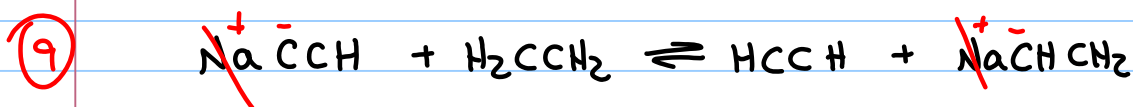
D = $\text{CH}_3\text{CH}=\text{CHCH}_2\text{CH}_3$ via partial reduction

E = 1. BH_3, THF anti-Markovnikov
2. $\text{NaOH}, \text{H}_2\text{O}_2, \text{H}_2\text{O}$



(2E, 3R)

4-isopropyl-3,N,N-trimethyl-6-oxo-2-phenyl-2-hexenamide



back to back $\text{S}_{\text{N}}2 = \text{inversion of inversion} = \text{retention}$

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