

Here we go again...

Question 1 of 3

sapling learning this question has been customized by Dr. Link at University of California, Irvine Map

Identify which of the below compounds will **not** undergo elimination via an E1 mechanism.

A
 B
 C
 D
 E
 F

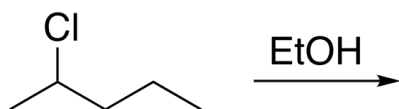
Br A CCCCBr B CC(C)(C)C(Br)C C

CC(C)C(Br)C D CC=CCBr E CC(C)C(Br)C F

completed in class

Previous Next Save And Exit

Draw all possible elimination products and rank by majority.



completed in class

Which protons can be eliminated?

(1R,2R)-1-bromo-2-methylcyclohexane

E1

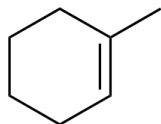
*completed in
class*

E2

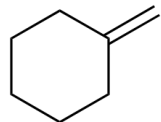
Practice I

Draw the chloroalkanes that undergo elimination when treated with KOH to give each alkene as the major product. In some cases more than one answer is possible.

a)



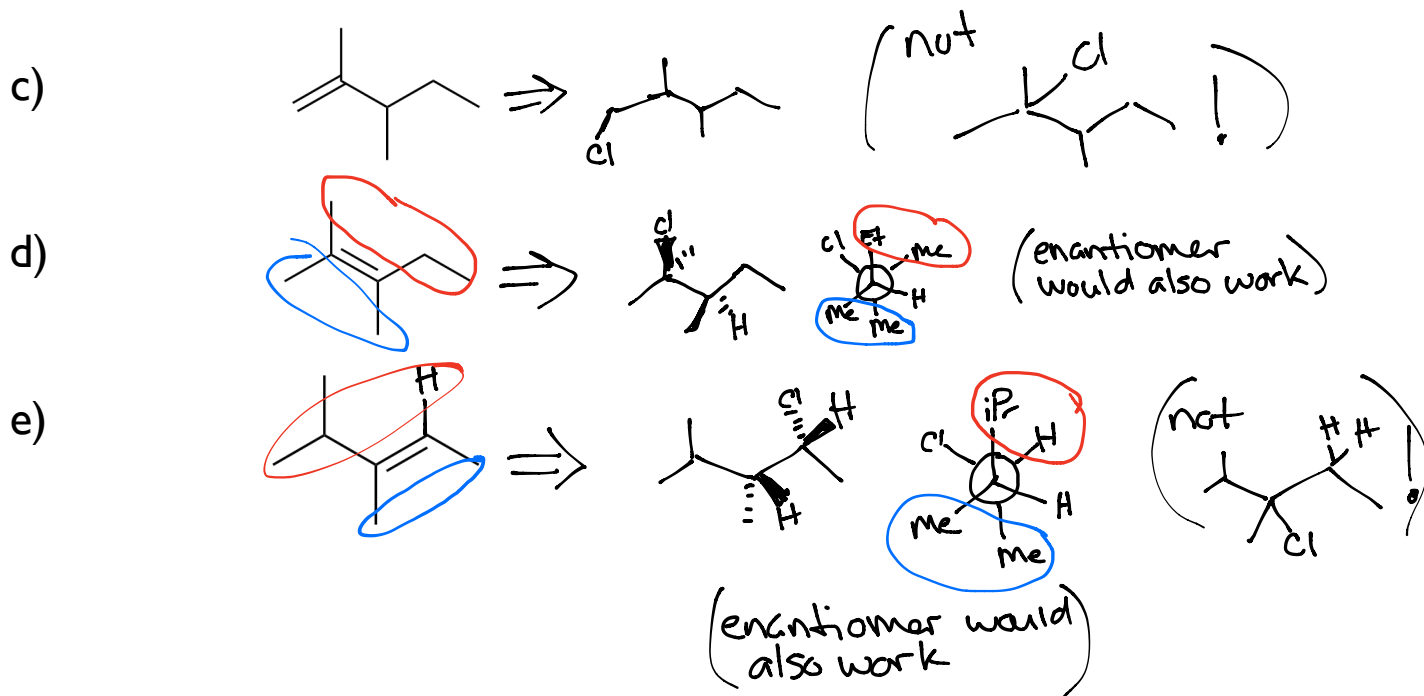
b)



completed in class

Practice 2

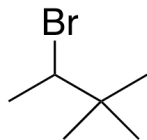
Draw the chloroalkanes that undergo elimination when treated with KOH to give each alkene as the major product. In some cases more than one answer is possible.



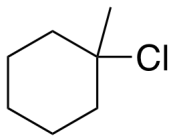
Practice 3

Draw the product(s) of the reaction of each with sodium ethoxide in ethanol. Would the product change if we used *t*-butoxide? Ethanol as the base?

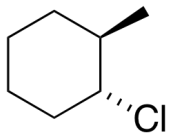
a)



b)



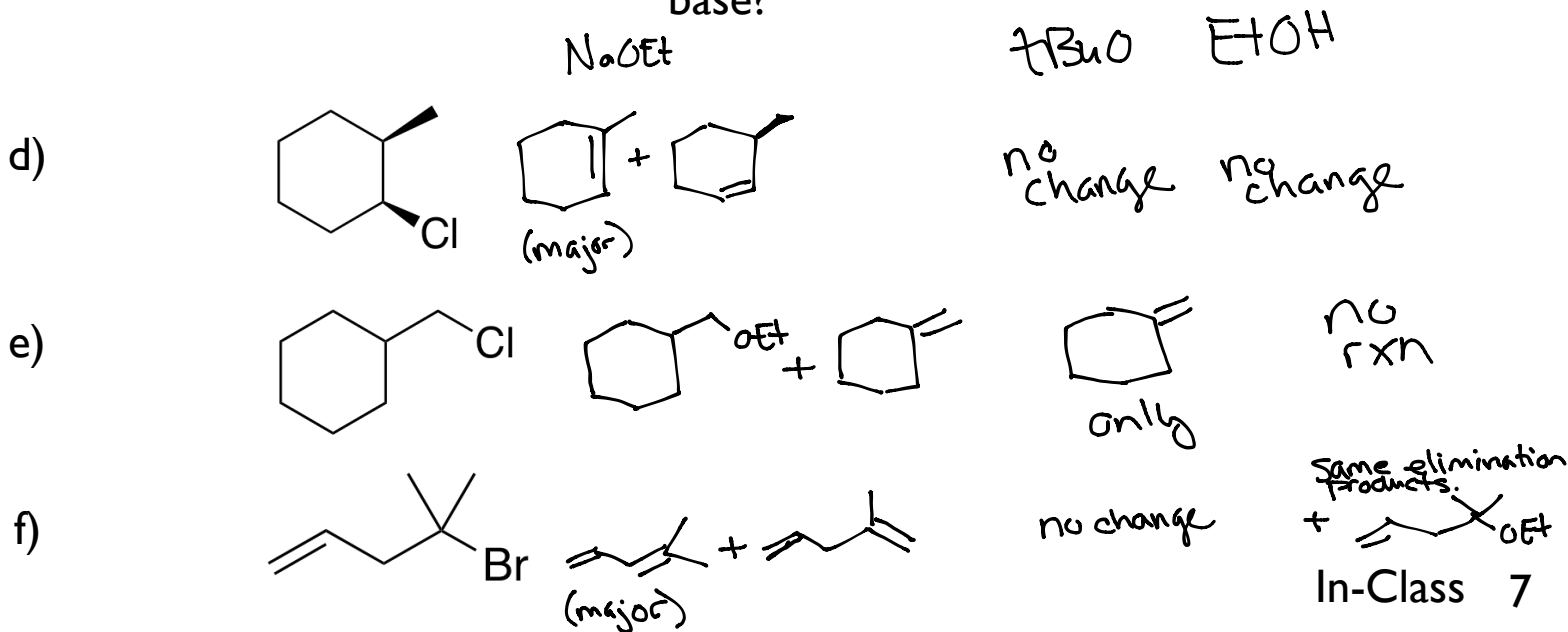
c)



Completed in class

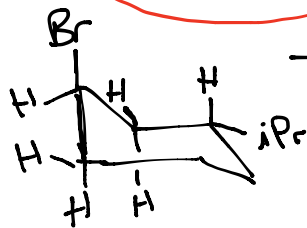
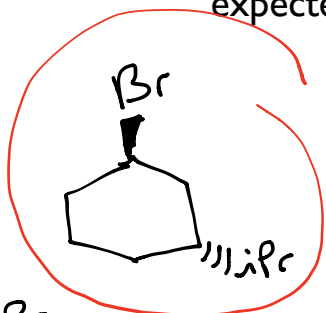
Practice 4

Draw the product(s) of the reaction of each with sodium ethoxide in ethanol. Would the product change if we used *t*-butoxide? Ethanol as the base?

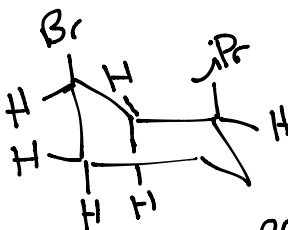
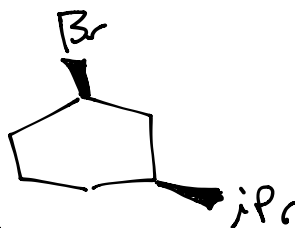
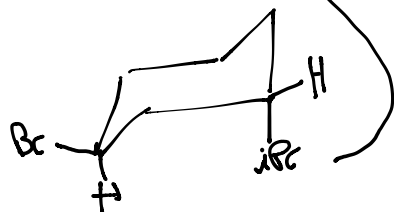


Practice 5

Which isomer of 1-bromo-3-isopropylcyclohexane reacts faster when refluxed with potassium *tert*-butoxide, the *cis* isomer or the *trans* isomer? Draw the structure of the expected product from the faster reacting compound.

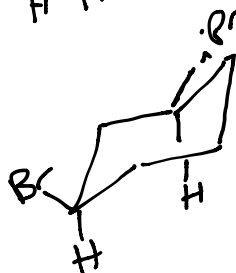


both conformers fairly similar E



Much higher E conformer

Much lower E conformer



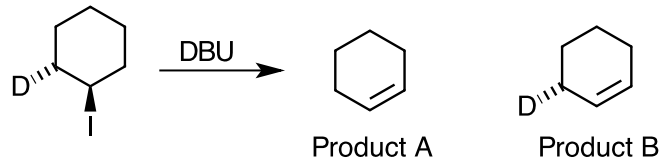
Trans isomer will react faster. Br needs to be in axial position for E2 to occur. For trans isomer, both conformers are similar in energy so both will be present in significant amounts. For the cis isomer, the necessary conformer has both groups in axial positions. This makes it significantly higher in energy than the other conformer, so it will be present in much smaller quantities. Reaction of cis isomer will be slower because of need to flip to other, much higher energy conformer. 8

Products



Challenge!

Which product would form faster? Why?



*completed
in class*

Start on a BIG flow chart!

substitutions AND eliminations!

You should do this yourself!