

Summer I
Test 3
6/26/2008

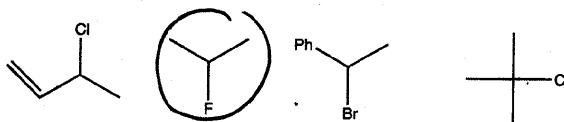
Name: Key 108 pts.
By signing I will abide by the WFU and
Spartan honor code

1. (2pts) Circle the least reactive compound in an SN2 reaction. Indicate the reason as steric, inductive and/or resonance.



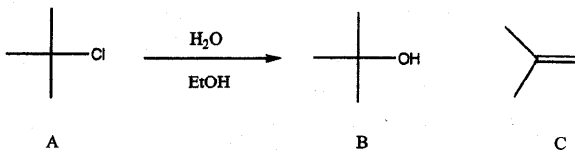
Reason: Steric, 2° carbon

2. (2pts) Circle the least reactive compound in an SN1 reaction. Indicate the reason as steric, inductive and/or resonance.



Reason: Inductive, F⁻ bad L.G.

3. Consider the reaction below to answer the following questions:



A. (2pts) Compound B is the: (circle correct answer)

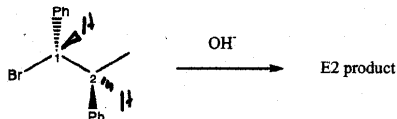
- a. SN2 product
- b. SN1 product
- c. E2 product
- d. E1 product

B. (2pts) Compound C is the: (circle correct answer)

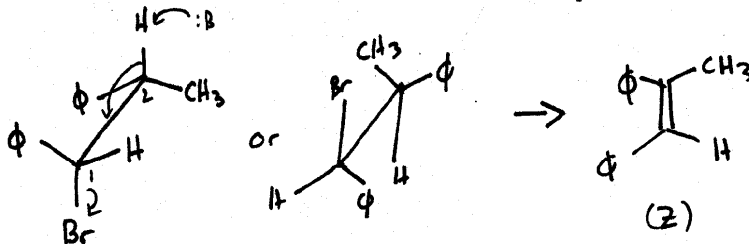
- a. SN2 product
- b. SN1 product
- c. E2 product
- d. E1 product

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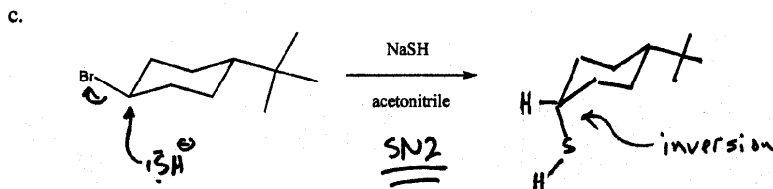
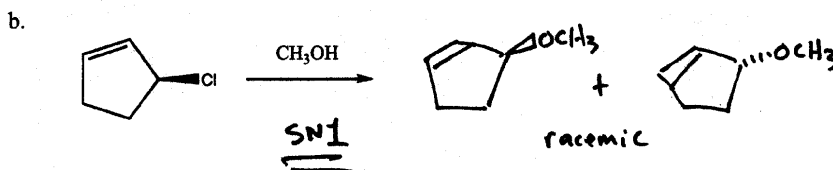
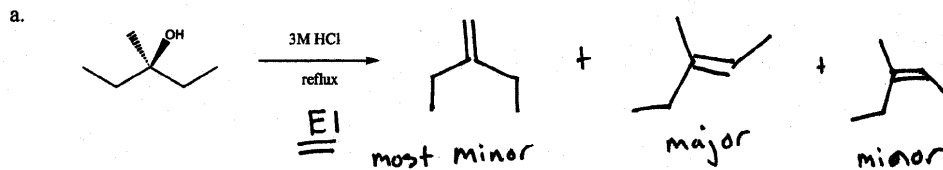
4. Consider this reaction for the following question:

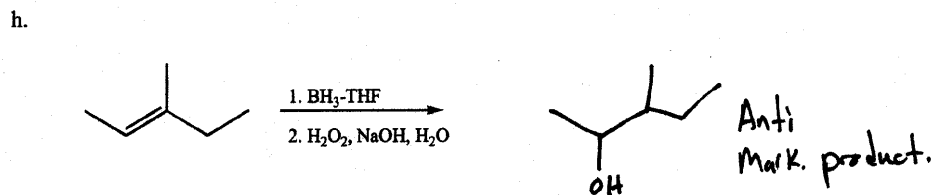
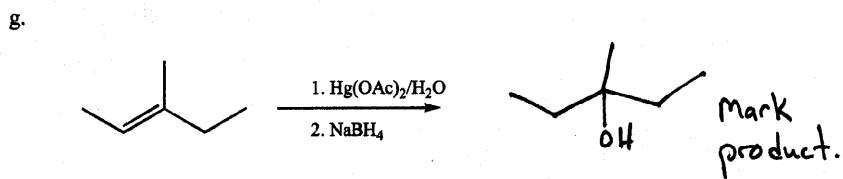
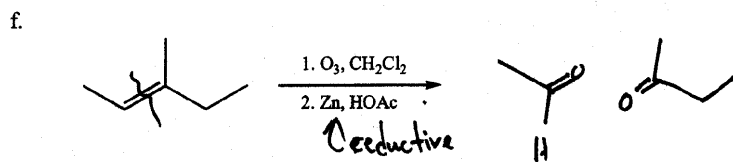
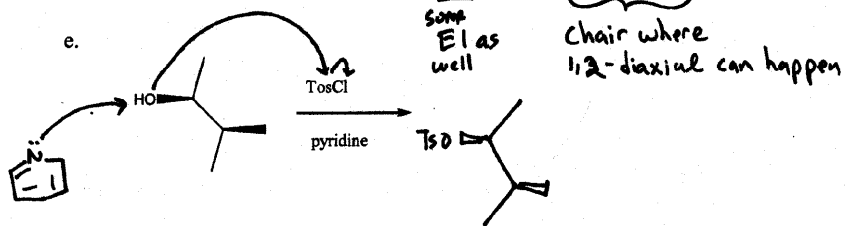
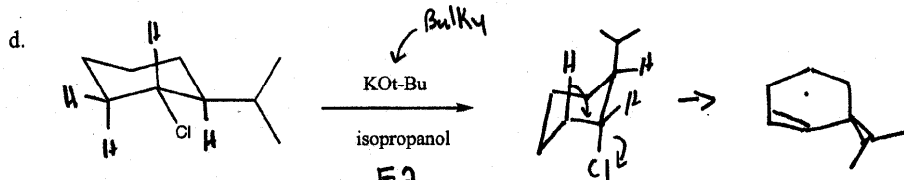


(10 pts) Draw the saw-horse projection leading to product. Put the number 1 carbon "in front" and number 2 carbon "in back". Draw the product as well.

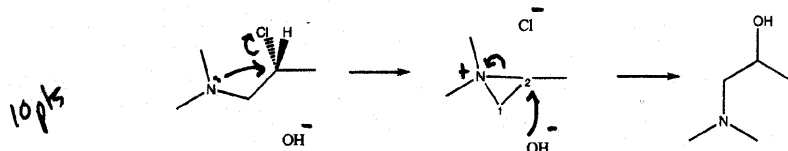


5. (4 pts each) Draw the structure(s) of the major organic product(s) for each of the following reactions. If a product is made by SN1, SN2, E1 or E2 indicate. Also indicate the stereochemistry for each reaction when appropriate.

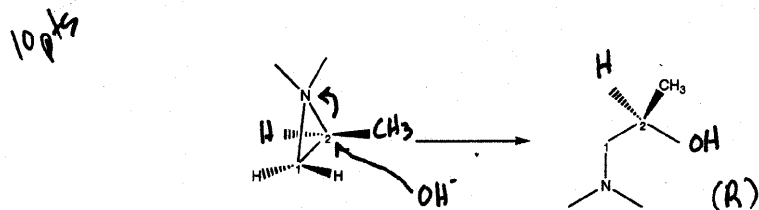




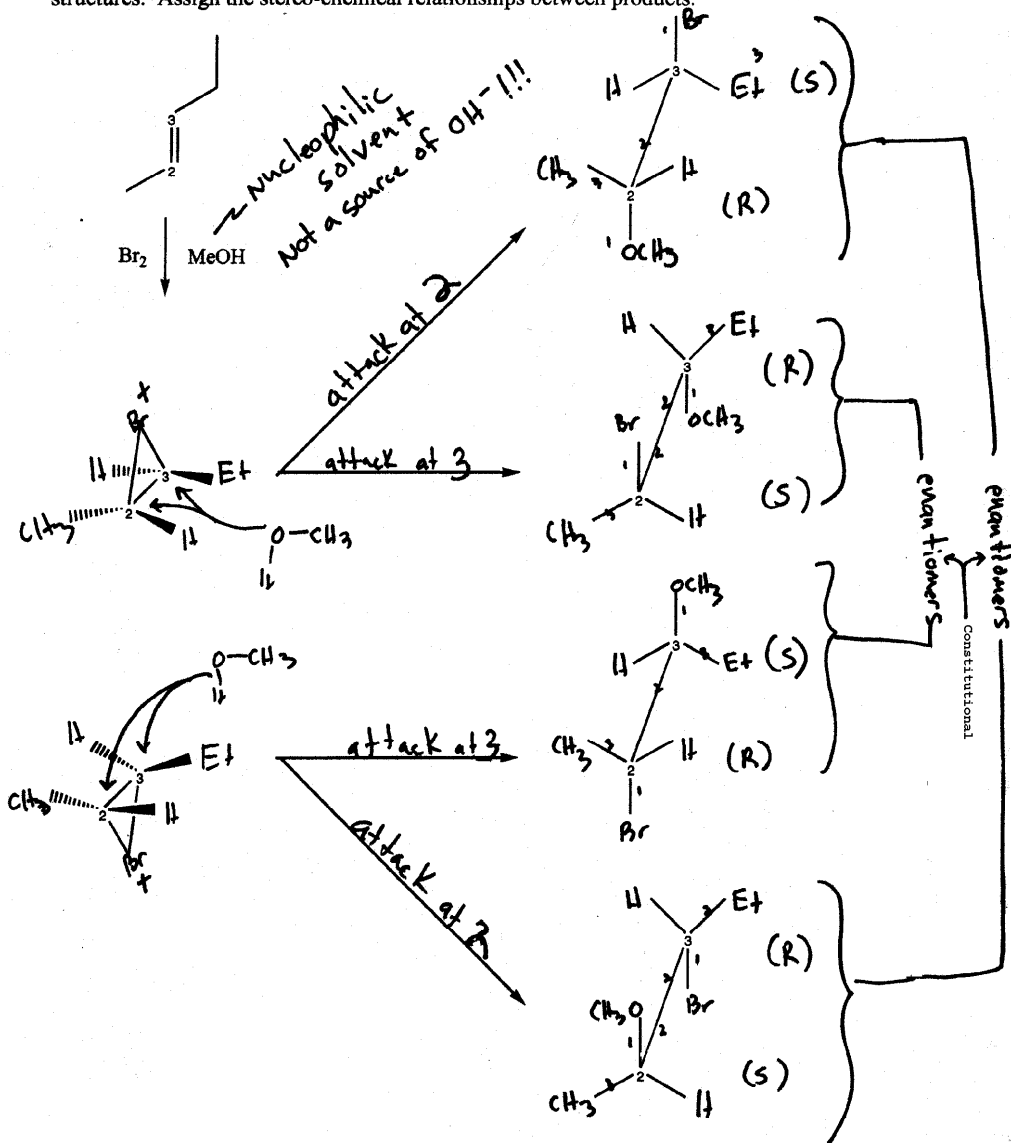
6. (10 pts) Provide curved arrows AND charges for the following reaction:



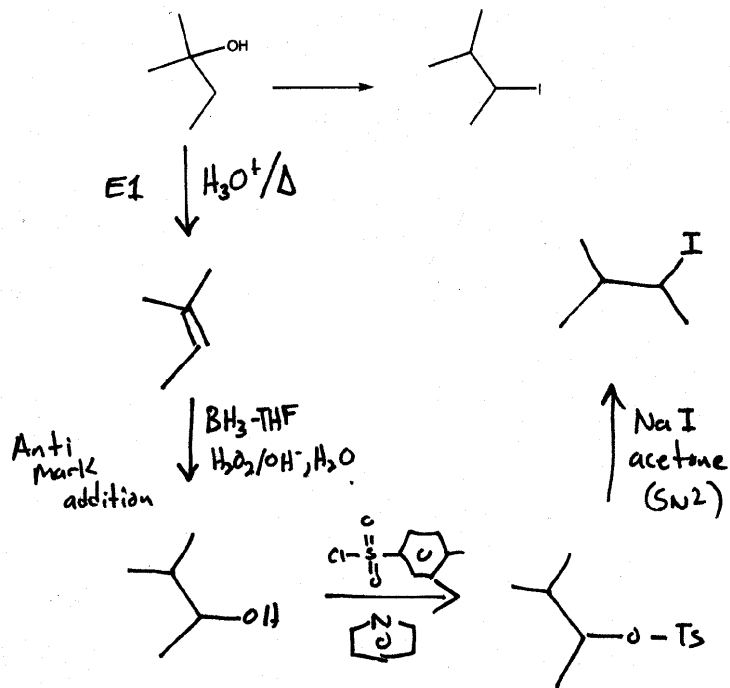
Indicate the stereochemistry of the middle structure and the product below by adding a hydrogen and a methyl to the left structure. Add a hydrogen and OH to the right structure.



7. (20 pts) Use the templates provided to control the stereochemistry. Populate with hydrogens, carbons and charges as needed. Assign R/S to each product in the saw-horse structures. Assign the stereo-chemical relationships between products.



8. (10 pts) Using any reactions you know make the following product through a multi step synthesis. Indicate reagents and conditions but not mechanisms.



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