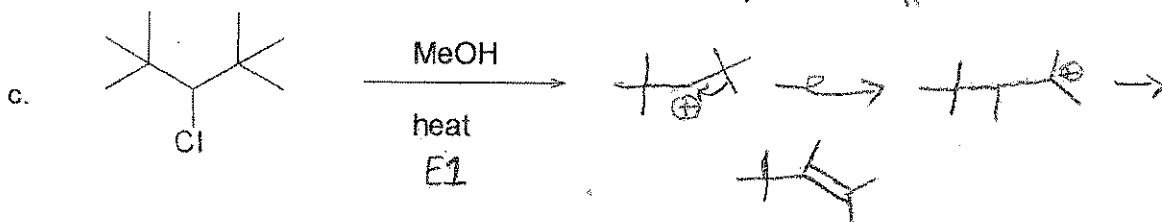
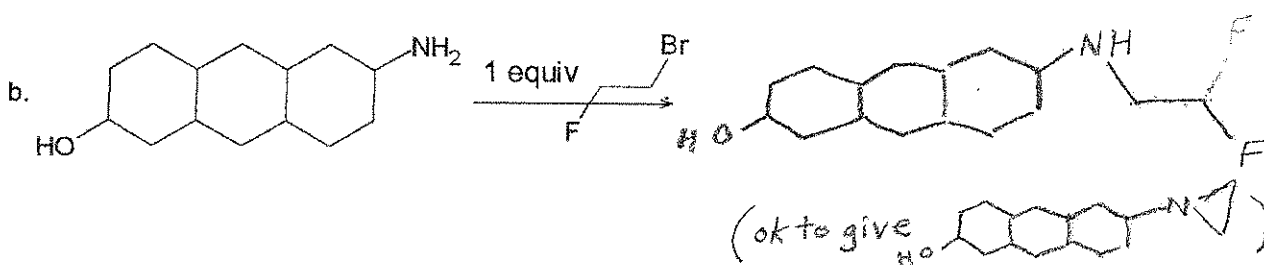
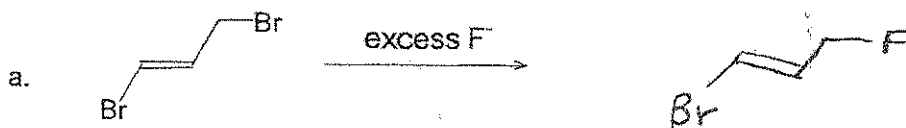
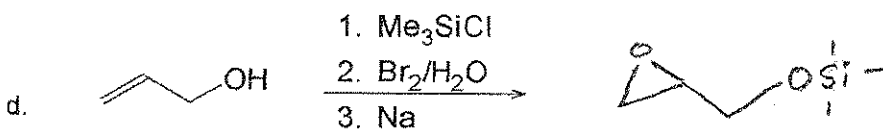


1. Show the **major** product or products of each of the following reactions. Do not show **minor** products. Be sure to show proper stereochemistry. (6 points each, 5 minutes each).

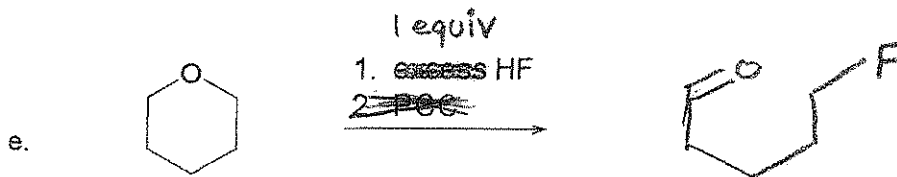


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Ch. 10/11



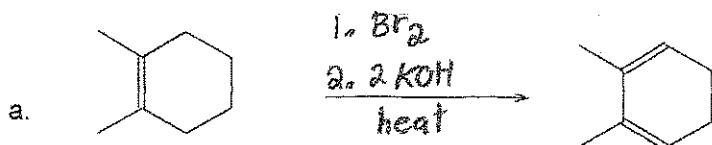
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OMIT
Ch. 10

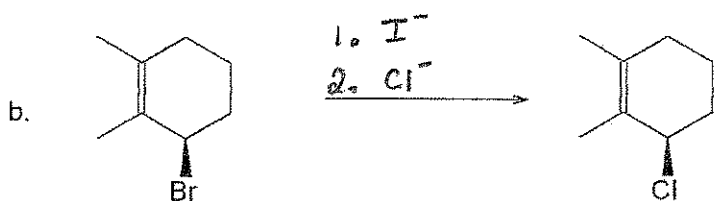


2. Give the reagent or reagents necessary to accomplish each of the following transformations. Number each step so it is clear when reagents must be added **together** or **separately**. Do not show **intermediates**. (6 points each, 4 minutes each)

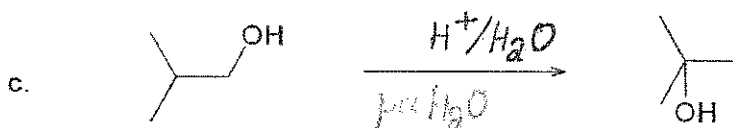
Ch. 6/9



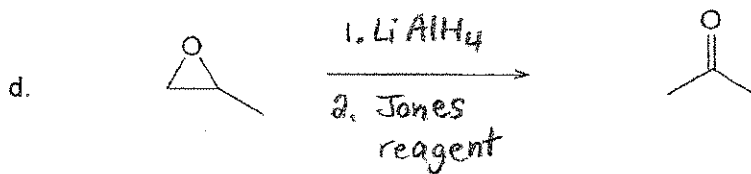
Ch. 9



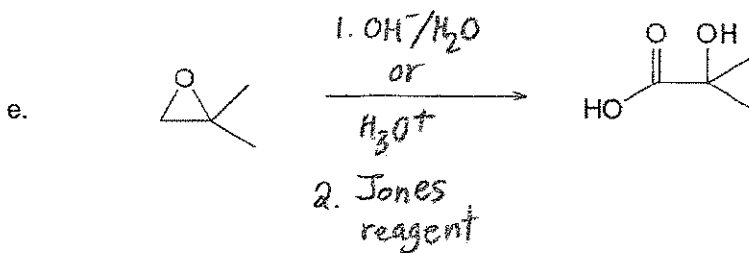
OMIT
Ch. 10



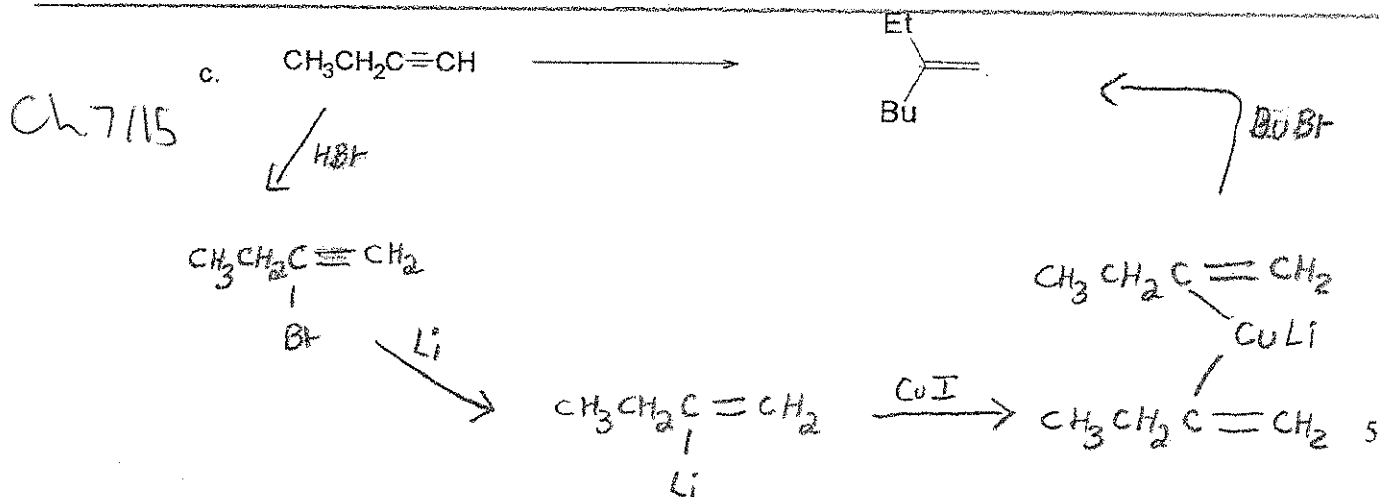
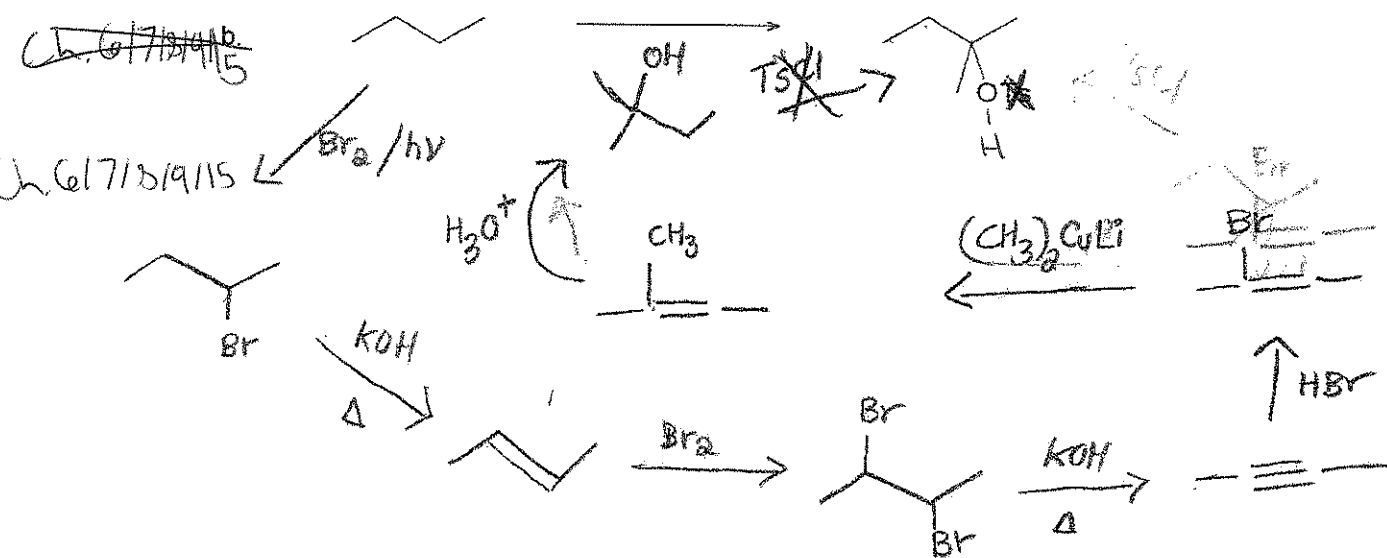
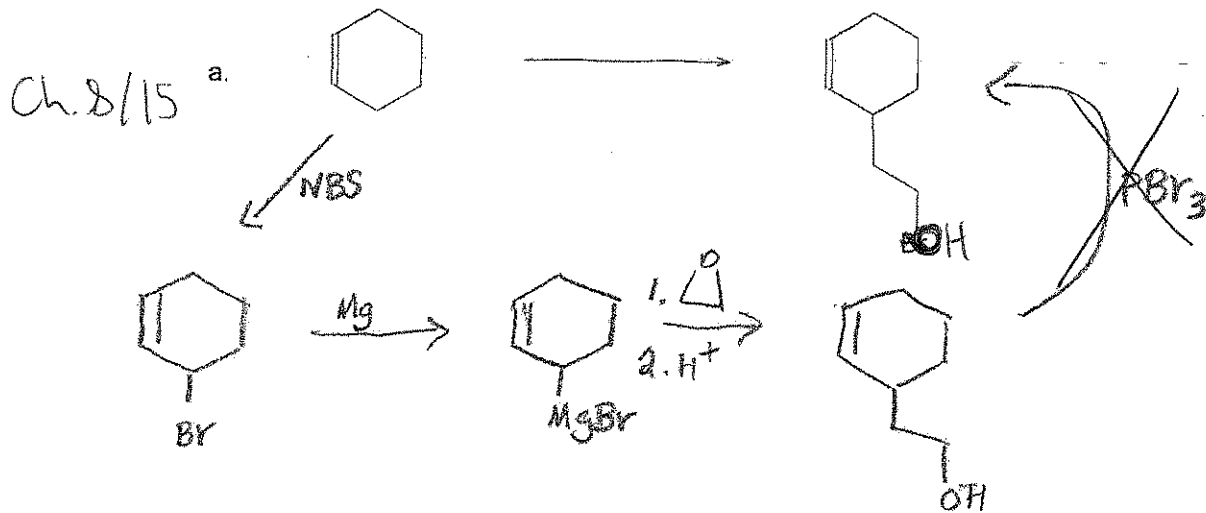
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Ch. 10



3. Give the reagent or reagents necessary to accomplish each of the following synthetic transformations. Any needed carbon based reagents are allowed. Show all intermediates. (9 points each, 7 minutes each)



4. Show the mechanism for the following reaction. (13 points, 8 minutes)

OMIT
Ch. 11

