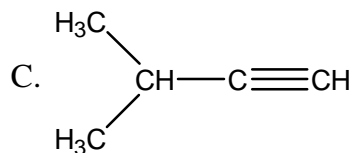
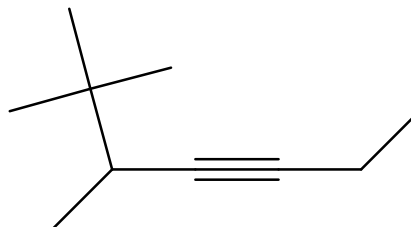


Chem 233: Problem Set #8 (on Chapter 8)

1. Name or draw structures for the following:

A. acetylene

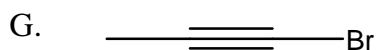
B.



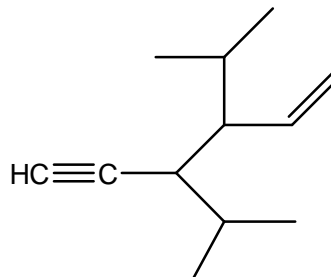
D. ethylene

E. 1,5-dibromo-2-pentyne

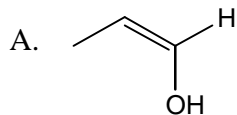
F. dimethylacetylene



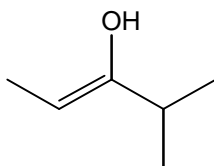
H.



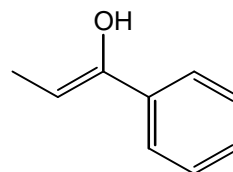
2. Draw the keto form for the following enol tautomers.



B.

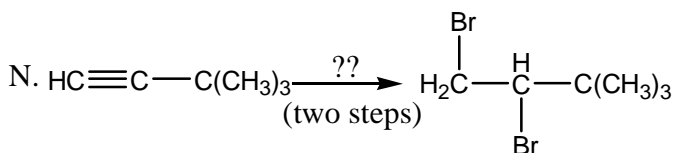
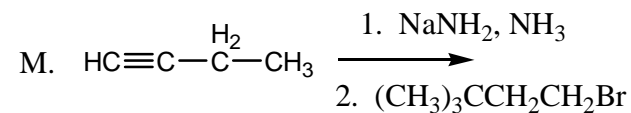
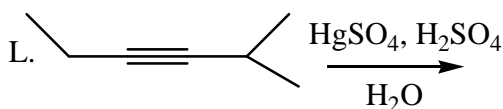
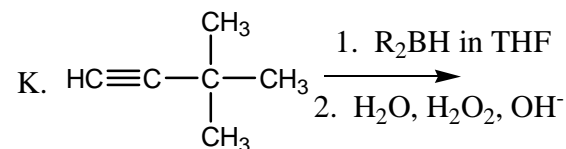
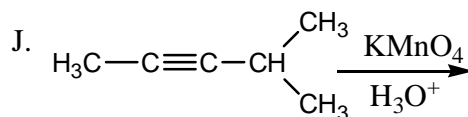
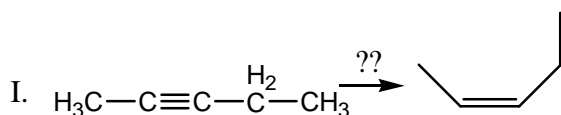
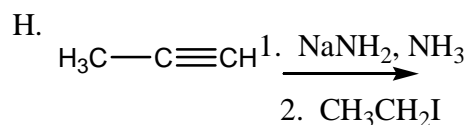
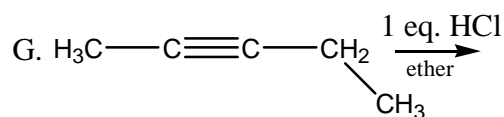
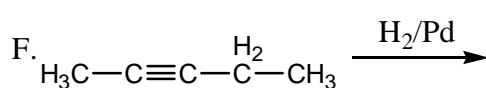
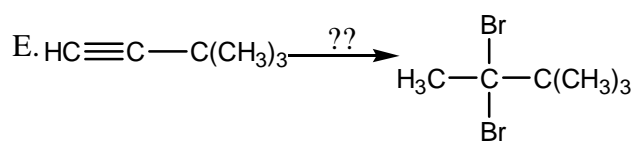
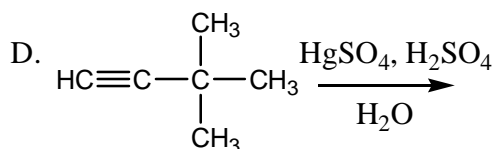
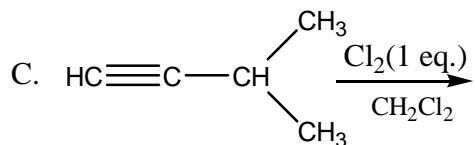
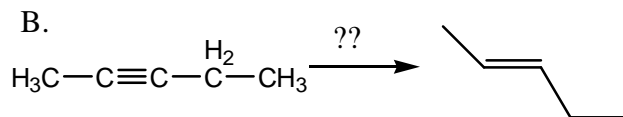
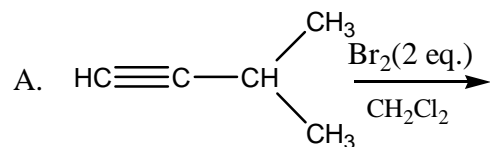


C.



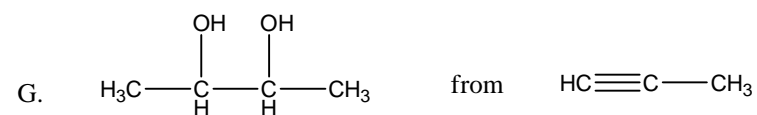
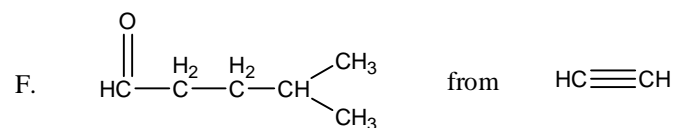
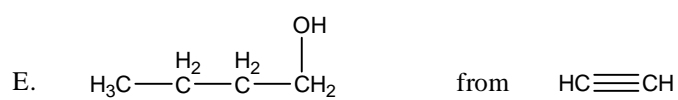
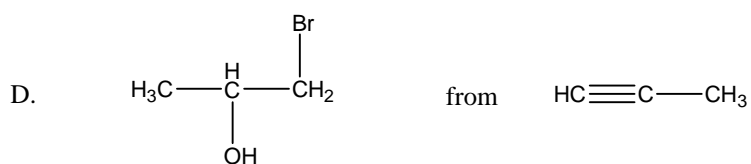
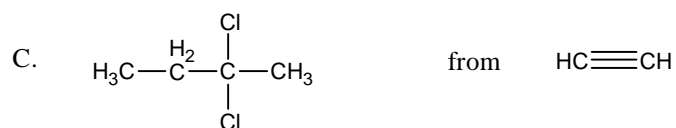
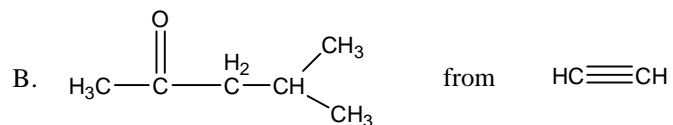
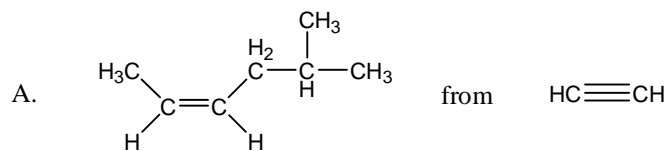
3. Show the step-by-step mechanism for the acid catalyzed conversion of the enol tautomer in 2B to the keto tautomer.

4. Give the reagents needed or the major organic product(s) for the following reactions.



- Show step-by-step mechanisms for the reactions given in question 4C, 4E, and 4H.
- Use the mechanism in 4C to explain why only the trans product is formed.
- Use the mechanism in 4E to explain why very little (if any) of the rearranged product 2,3-dibromo-2,3-dimethylbutane is formed.
- Use a mechanism to explain why only anti-addition occurs for the reaction in 4G.

9. Give a correct synthesis route for the following:



10. An organic molecule has the chemical formula $C_{19}H_{16}$. This molecule reacts with two equivalents of H_2 over Lindlar's catalyst, after which it reacts with 7 equivalents of H_2 over a PtO_2 catalyst.
- A. How many degrees of unsaturation are present in $C_{19}H_{16}$?
 - B. How many triple bonds are present?
 - C. How many double bonds are present?
 - D. How many rings are present?
 - E. Draw a structure that fits the results.