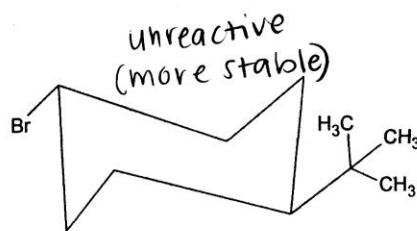
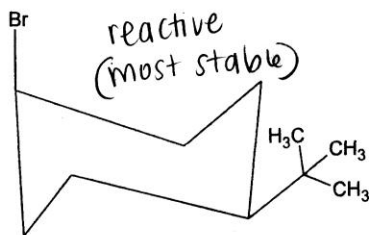
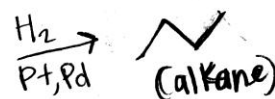
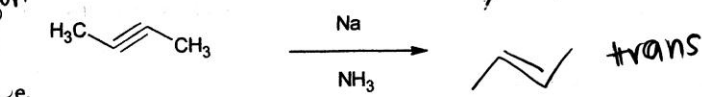
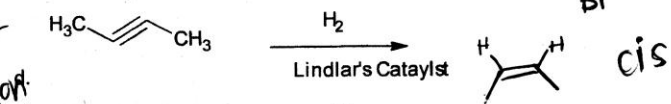
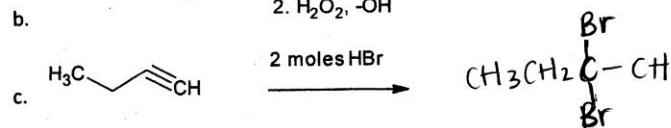
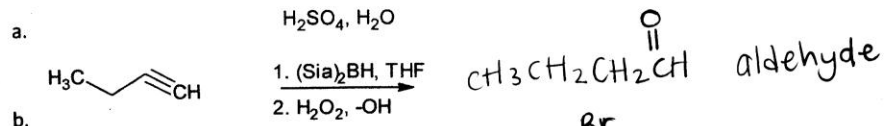
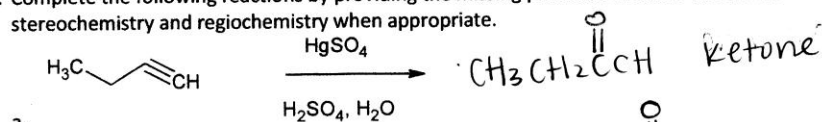


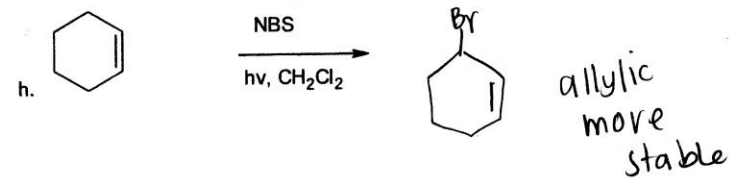
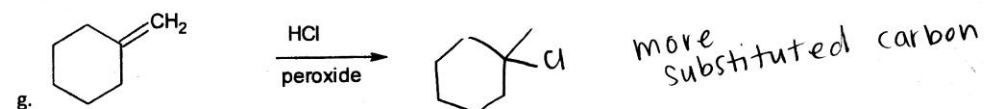
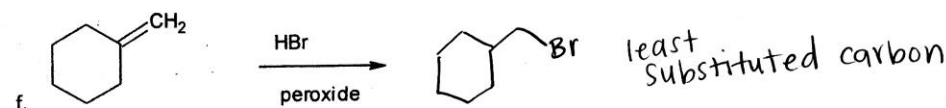
16. Consider the two isomers shown below.



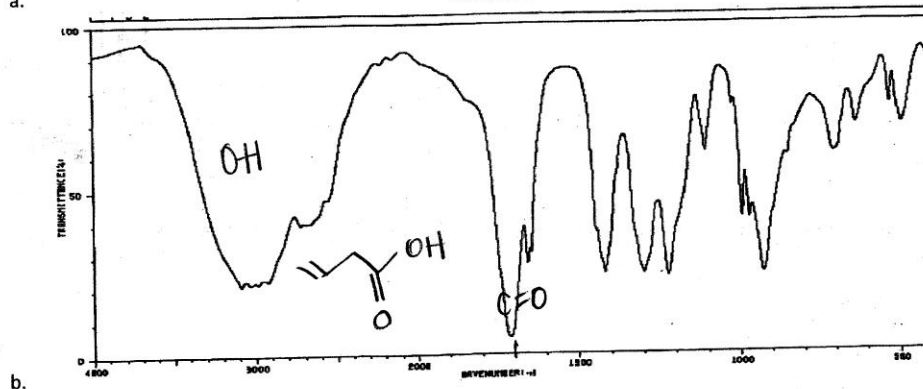
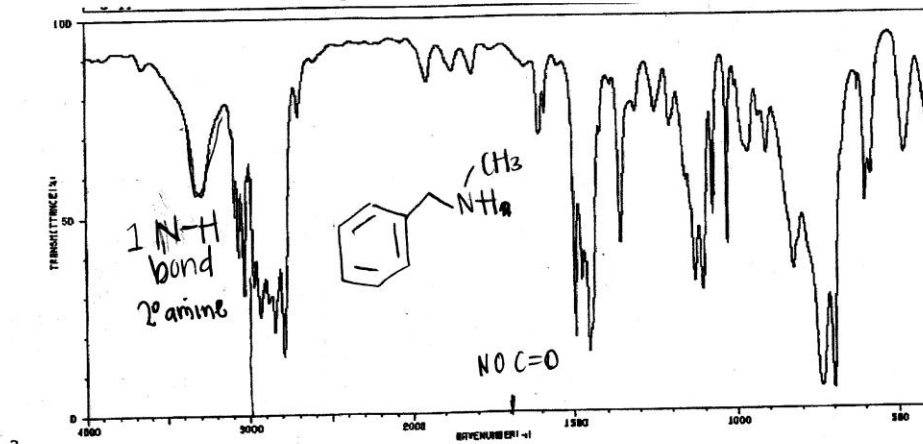
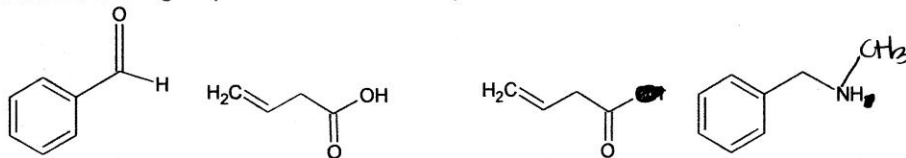
- a. Are both isomers drawn in their most stable chair conformation? If not draw the more stable conformation. **YES!**
- b. Draw the alkene formed when each isomer undergoes E2 elimination. **} ON BACK!**
- c. Which isomer, cis or trans, undergoes E2 elimination faster? Explain.
17. Complete the following reactions by providing the missing products. Indicate the correct stereochemistry and regiochemistry when appropriate.

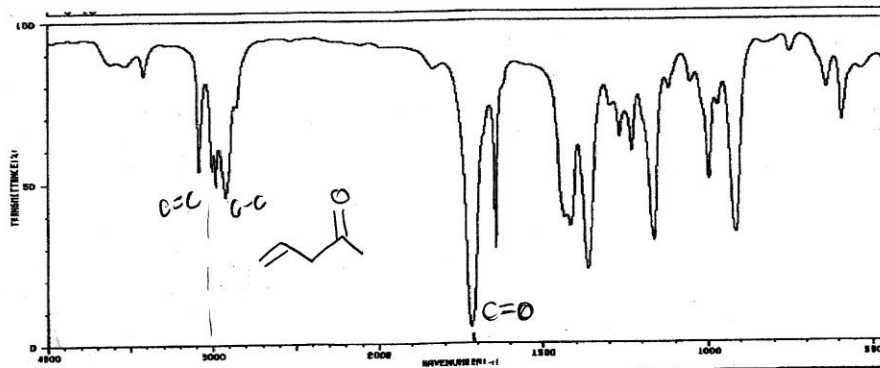


Hydrogenation

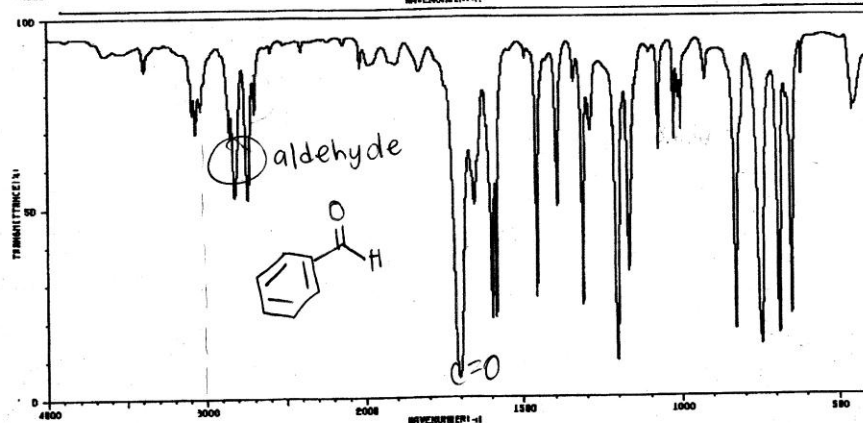


18. Match the following compounds with the correct IR spectrum.



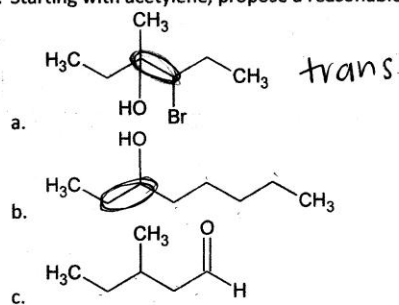


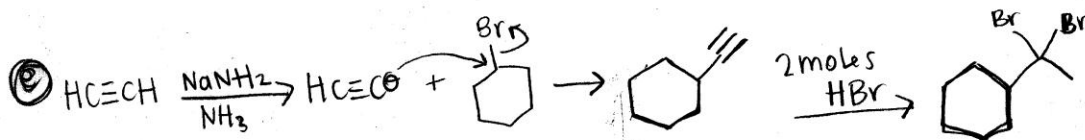
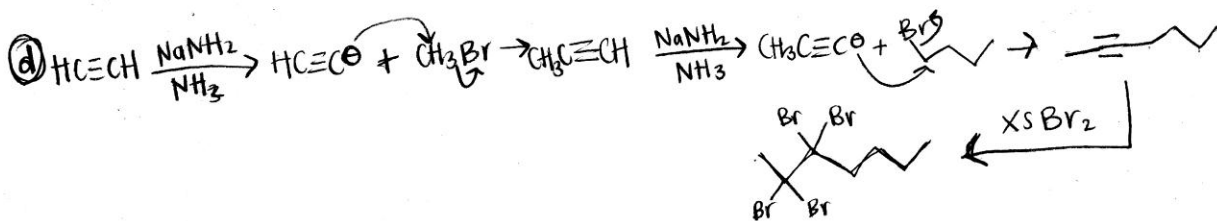
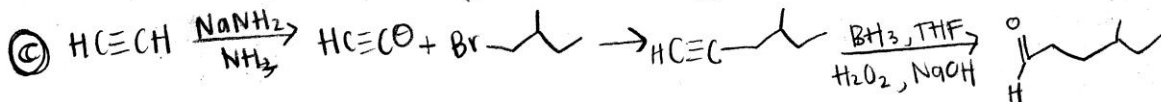
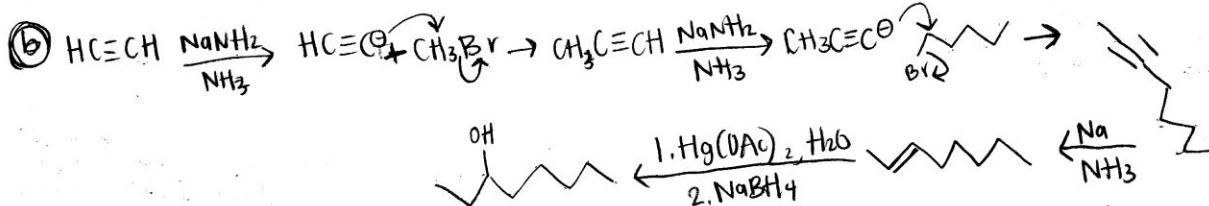
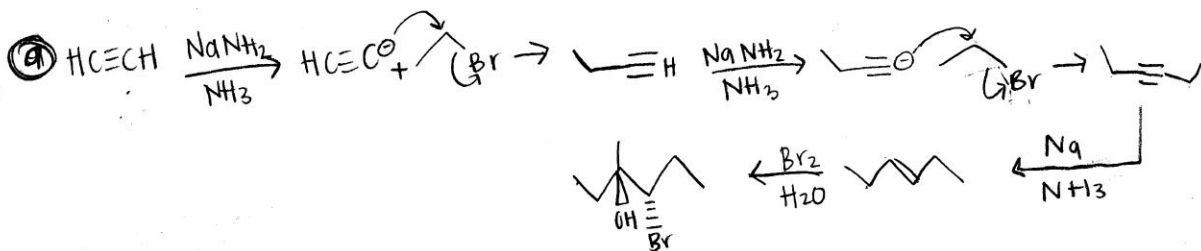
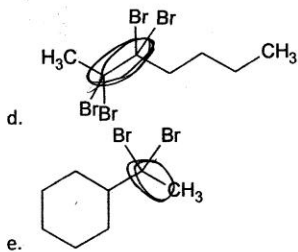
c.



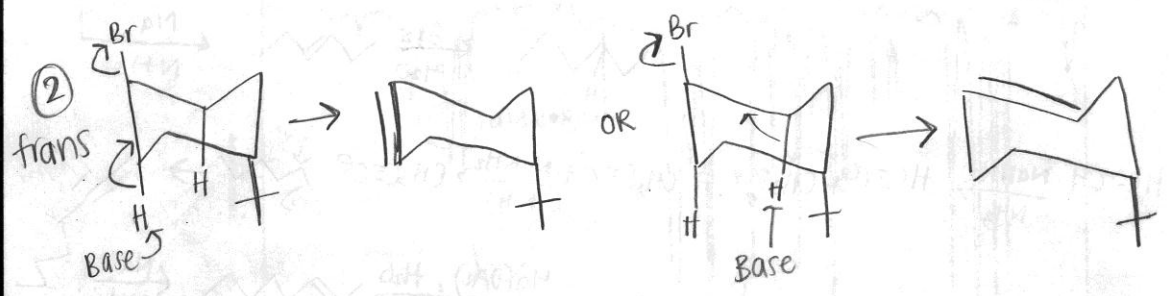
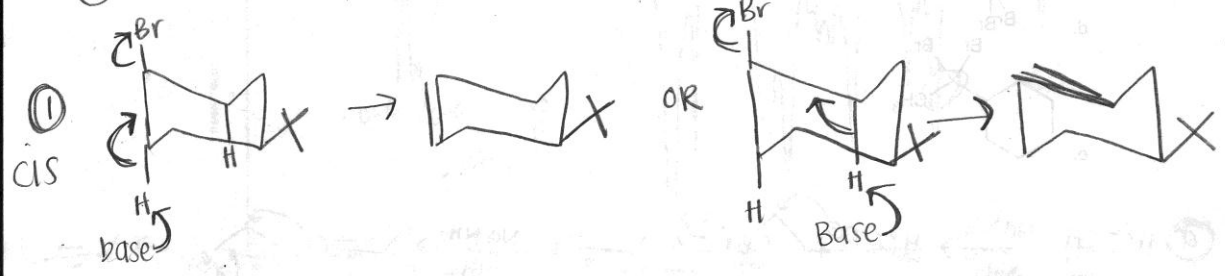
d.

19. Starting with acetylene, propose a reasonable synthesis for the following target molecules.





(b) E₂ elimination



③ The cis isomer undergoes E₂ elimination faster because its reactive state is more stable than the trans reactive state. The trans reactive state has 2 large axial molecules, but cis only requires one large molecule to be axial (the leaving group)