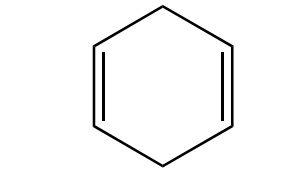
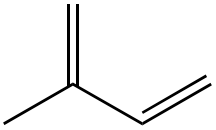
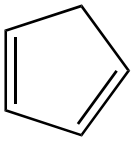
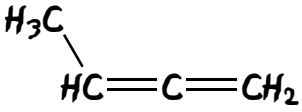
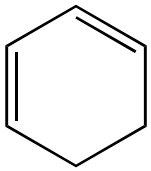
1.) Circle the part of the molecule that can be considered conjugated.

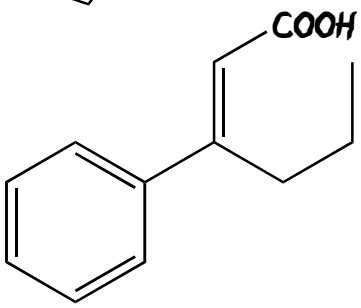




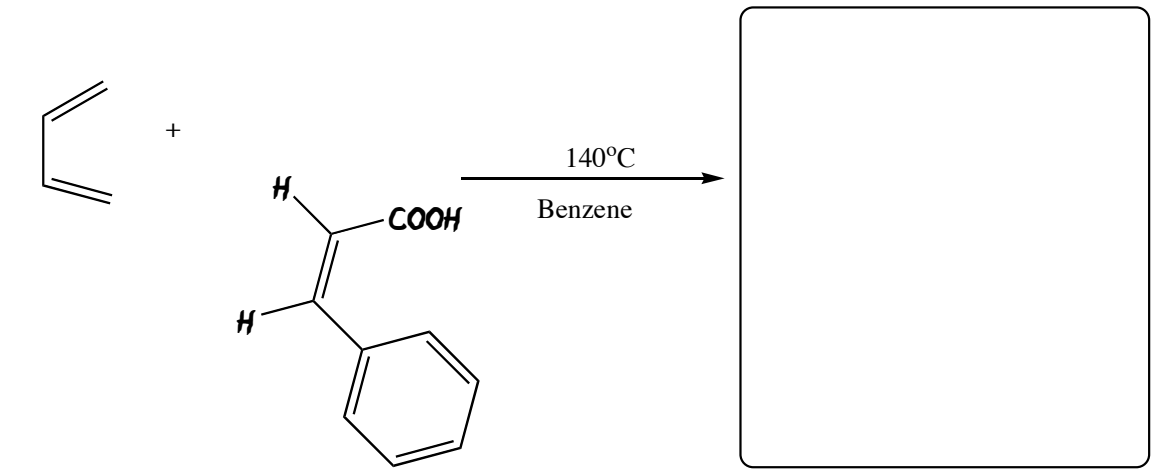


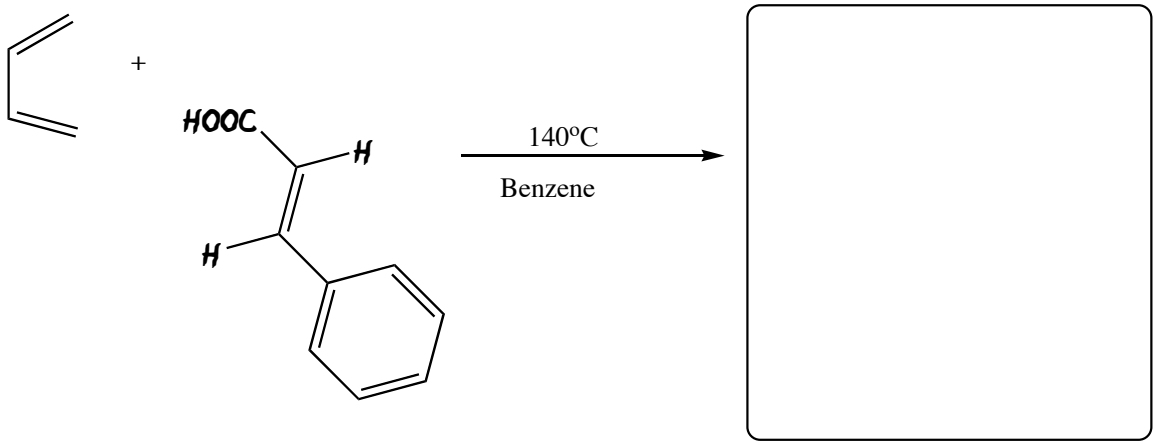


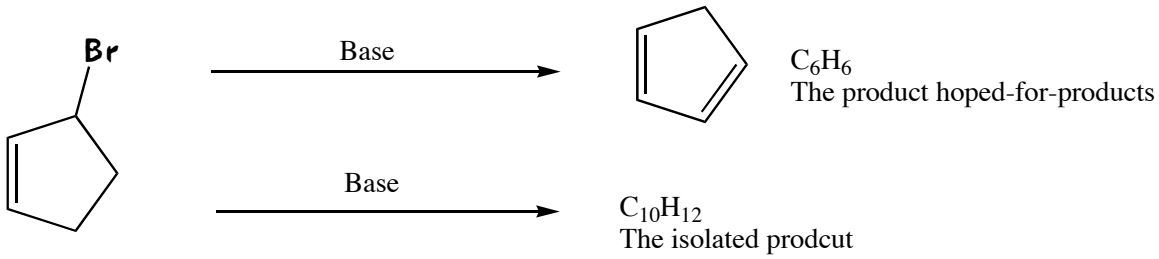



2.) Draw the products of the following reaction. Label the Endo/Exo products. Be sure to show proper stereochemistry.



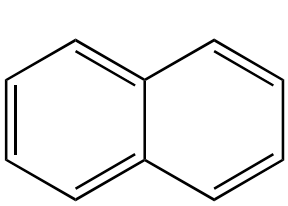
3.) You attempt to prepare 1,3-cyclopentadiene from the base-catalyzed loss of hydrogen bromide (E2-Elimination Reaction) from 3-bromocyclopentane instead of isolating a compound of the formula $C_5H_6$, you get a high yield of a compound of the formula $C_{10}H_{12}$. Fame, fortune, and a Noble prize await you if you can explain this result, well at least if this was 1928.

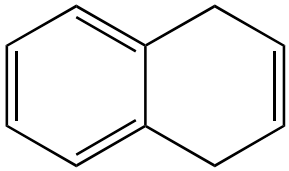


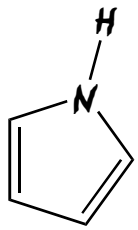

$C_6H_6$
The product hoped-for-products

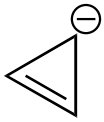
$C_{10}H_{12}$
The isolated prodcut

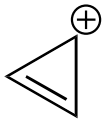
4.) Circle the following molecules that can be considered aromatic.

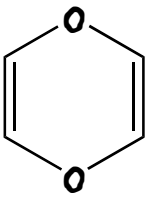


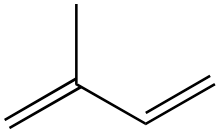




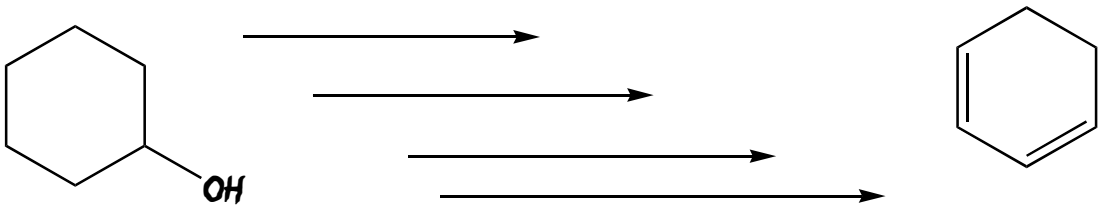





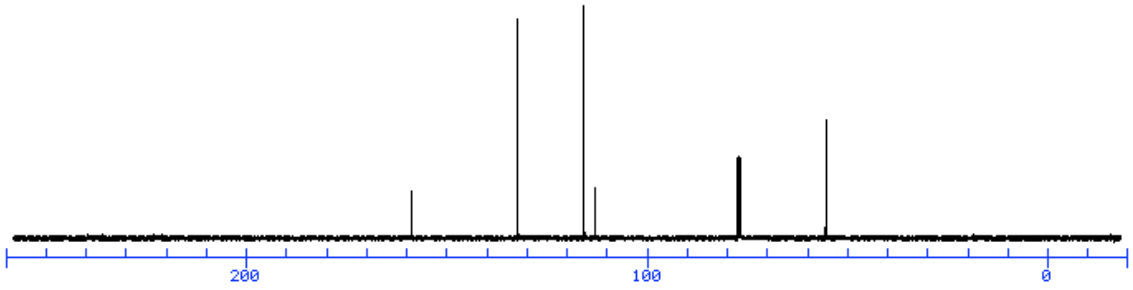


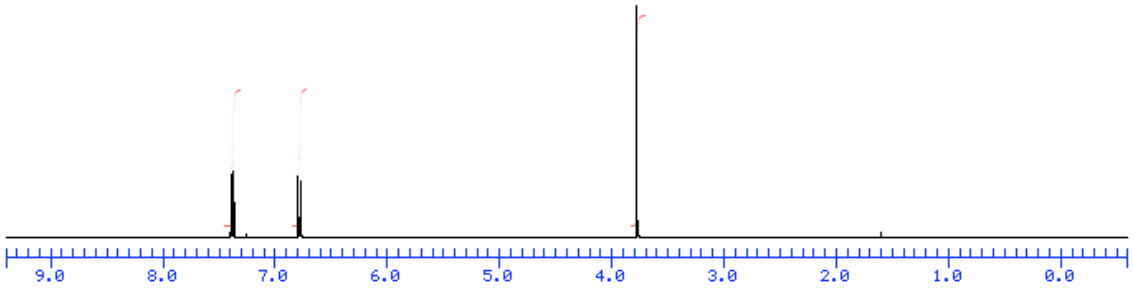
5.) Synthesize the following molecule from the starting material.
Hint the number of arrows indicates the number of steps needed.



6.) Identify the following molecule from the $^{13}C$ NMR and the $^{1}H$ NMR.




$^{13}C$NMR of $C_7H_7OBr$




$^{1}H$ NMR of $C_7H_7OBr$. The singlet peak at 3.8ppm corresponds to 3H's. The remaining peaks are multiplets.