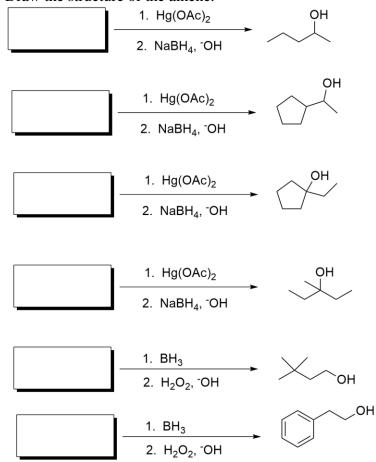
Write out the answers on separate sheets of paper.

1. Give the IUPAC name for the following molecules.

- 2. Write the structure for each IUPAC name.
  - a. (R)-Butane-1,2,4-triol
  - b. 1-ethylcyclobutanol
  - c. 2-chlorohex-3-yn-1-ol
  - d. (1R,2R)-cyclopentane-1,2-diol
  - e. Ethyl phenyl ether
  - f. Diisopropyl ether

3. Draw the structure of the alkene.



4. Provide the products A-L.

5. Provide the reagents necessary. More than one step may be required.

6. Write the mechanism for the following reactions.

OH 
$$H_3O^+$$
 $CI$ 

OH  $H_3O^+$ 
 $CI$ 

OH  $H_3O^+$ 
 $O$ 

OH  $H_2SO_4$ 
 $O$ 

OH  $H_2SO_4$ 
 $O$ 

OH  $I$ 

OH

7. Write the mechanism for the following reactions.