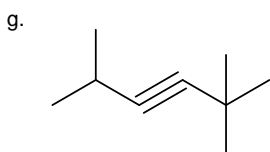
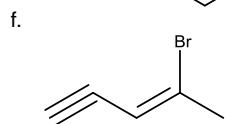
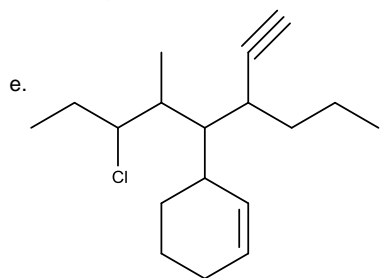
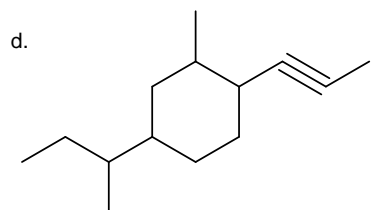
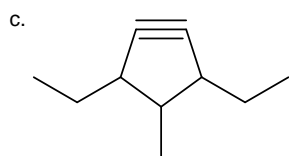
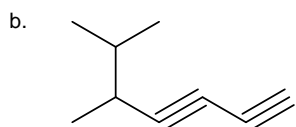
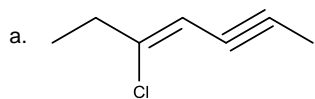




I. Name the following

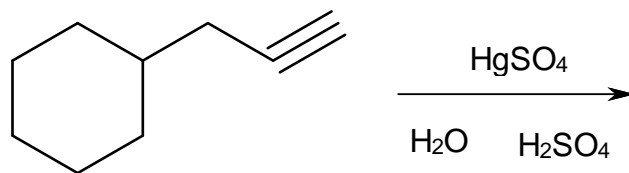


II. Draw the following

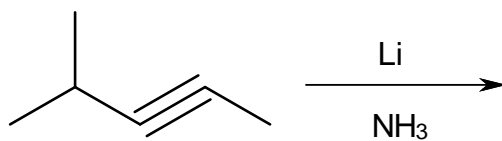
- a. 6-Ethyl-5-isopropyl-4-methyl-1-nonen-8-yne
- b. (3E)-1,3-Heptadien-5-yne
- c. 3-Vinylcyclohexyne or 3-(1-ethenyl)cyclohexyne
- d. 4-Butyl-4-hepten-2-yne
- e. 3-Sec-Butyl-1-heptyne
- f. 5-T-Butyl-2-methyl-3-octyne
- g. 3,3-Dimethyl-1,5-hexadiyne

III. Draw the complete mechanism for the following reactions

a. Hydration



b. Reduction



- IV. For the following prepare using any reagents and conditions you feel are necessary
- a. Prepare (2E)-2,3-Dichloro-4,5-dimethyl-2-hexene from 2,3-Dibromo-4,5-dimethylhexane
  
  - b. Prepare Butanal from (1Z)-1-Bromo-1-butene
  
  - c. Prepare 2-Bromo-2-chloropentane from 2-Pentanol
  
  - d. Prepare Octane from 1-Pentyne
  
  - e. Prepare 2-Pentanone from (1Z)-1-Chloro-1-pentene
  
  - f. Prepare 2,3-Dibromo-2,3-dichloropentane from 2-Pentene
  
  - g. Prepare (4E)-7,8-Dimethyl-4-nonene from 1-Pentyne
  
  - h. Prepare (2Z)-1-cyclohexyl-2-pentene from 3-cyclohexyl-1-propyne