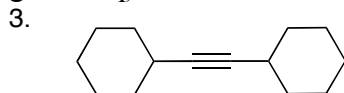
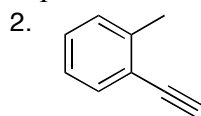


Alkyne Reaction Worksheet - Chapter 9

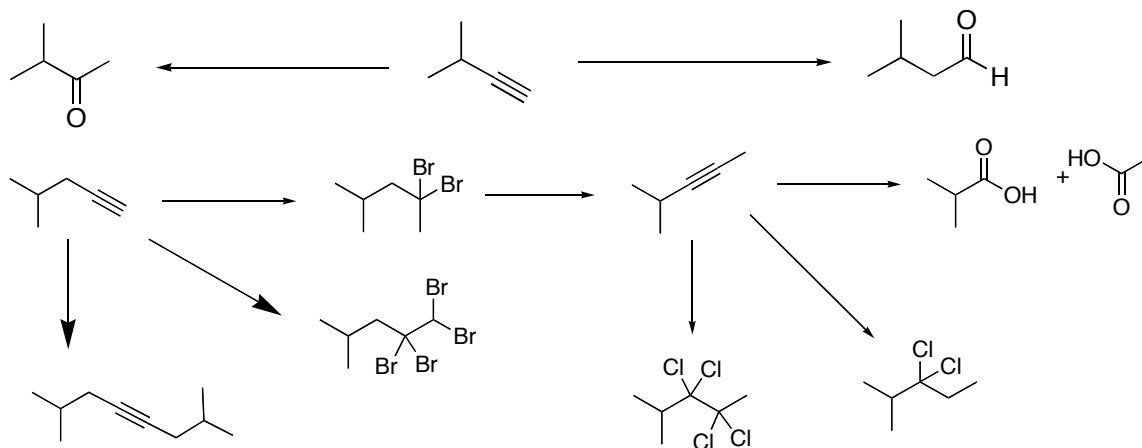
1. Predict the product(s) of the reaction of 4-methylpentyne with reagents (a) through (p), indicating proper regiochemistry. Assume reagents are used in excess, unless otherwise stated.

- (a) HBr, Ether (b) Cl_2 , CH_2Cl_2 (c) 1. O_3 ; 2. Zn, H_3O^+ (d) H_3PO_4 , KI
 (e) H_2 , Lindlar cat. (f) 1. BH_3 , THF; 2. H_2O_2 , NaOH (g) H_2SO_4 , H_2O , HgSO_4
 (h) Li, NH_3 (i) H_2 , Pd/C (j) 1. NaNH_2 ; 2. Ethylbromide
 (k) 1. NaNH_2 ; 2. 2-bromopropane
 (l) reagent (a) then 2KOH (m) reagent (b) then 2 NaNH_2 , NH_3
 (n) reagent (e) then HBr (o) reagent (e) then OsO_4 , NMO
 (p) reagent (h) then reagent (c) (q) reagent (h) then reagents (f)

Repeat the same reactions (reagents a-q) for the following compounds



4. Fill in the missing reagents over the arrows



5. Draw the alkyne and reagents needed to synthesize the following compounds. There may be more than one possible answer.

