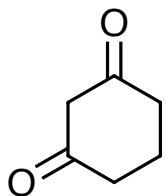


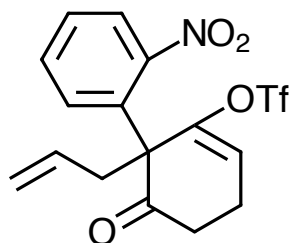
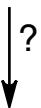
Synthesis Challenge # 44

AG Wegner

11.02.2016



A



B

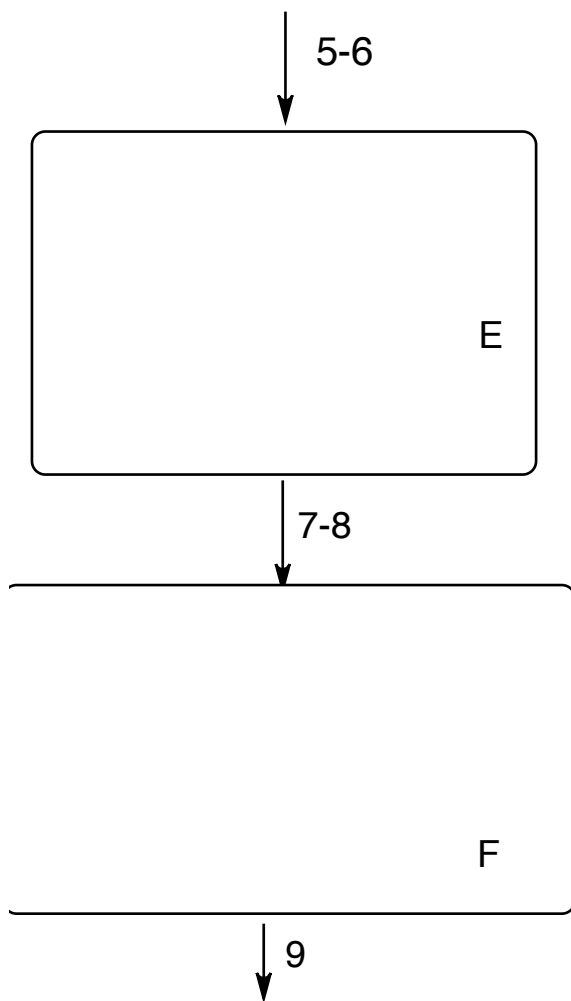


- 1) OsO₄ (4 mol%), NMO, THF/H₂O, 0°C to RT, 12 h, NaIO₄, 40°C, 6 h
2) Me₂NH, NaBH(OAc)₃, DCE, RT

- 3) PTSA·H₂O, NBS, CH₂Cl₂, RT, 48 h, then workup and evaporation
4) NaI (2.0 equiv), DMSO, 140°C, 1 h

Please design a synthesis of B from A.

Please provide a detailed mechanism for step 3)



5) K_2CO_3 , NaI, $\text{ClCOOCH}_2\text{CH}=\text{CH}_2$,
DCE, reflux, 9 h,
6) TiCl_3 , NH_4OAc , acetone/ H_2O

7) $[\text{Pd}(\text{PPh}_3)_4]$, Et_3N , CO (1 atm),
MeOH/DMF(2:1 v/v), 50°C , 1 h,
then 1,3-dimethylbarbituric acid, RT
8) (Z)-1-bromo-2-iodobut-2-ene,
 Cs_2CO_3 , 4Å molecular sieves (MS)

9) $[\text{Ni}(\text{cod})_2]$ (2.0 equiv), Et_3N , CH_3CN ,
RT, 20 min, then Et_3SiH (2.0 equiv)

