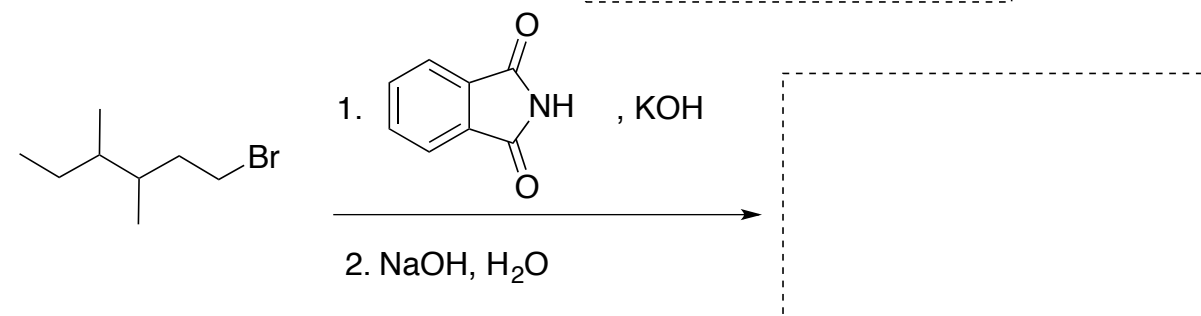
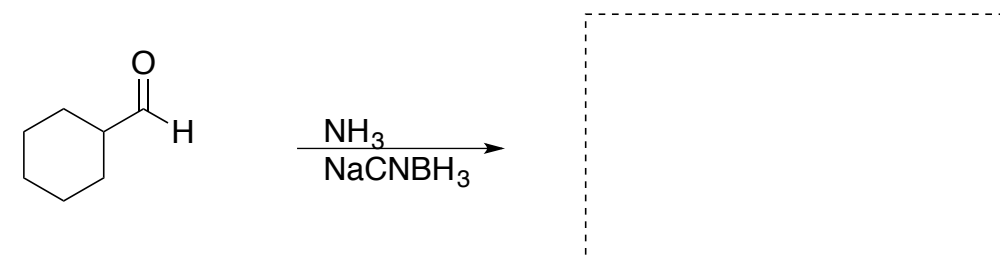
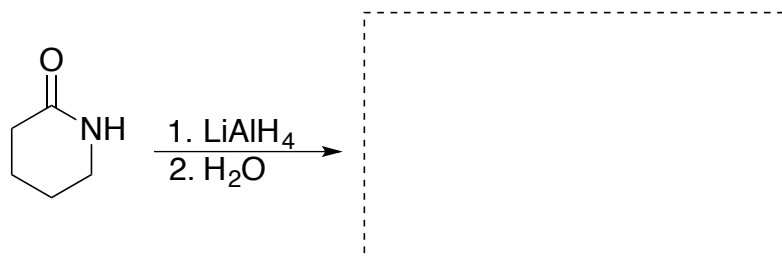
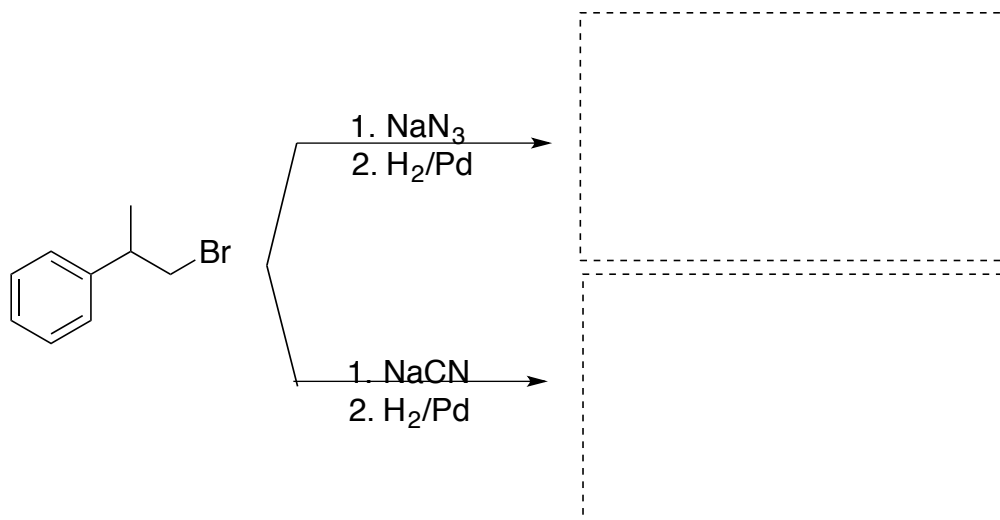
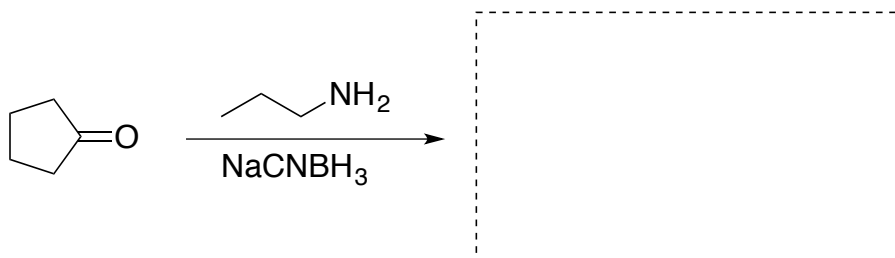
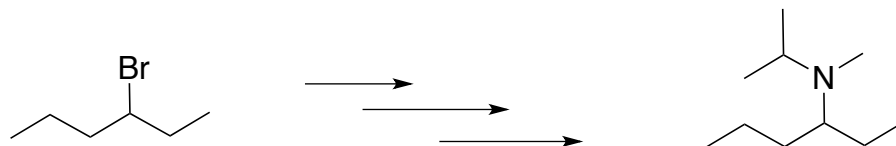
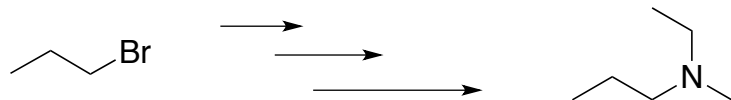


# Problem Set #9: Chapter 23

1. Complete the following transformations

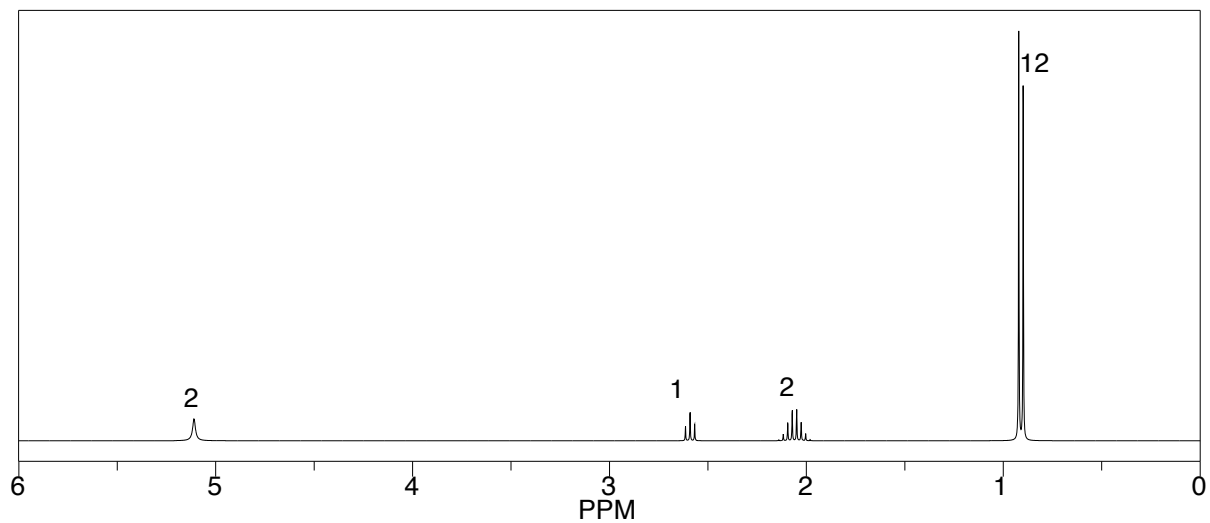


2. Provide a reasonable synthesis for the following molecules using the given starting material and any other carbon containing compound you need.



3. Determine the structure of the following compounds based on their  $^1\text{H-NMR}$  spectra:

A.  $\text{C}_7\text{H}_{17}\text{N}$



IR:  $3400\text{ cm}^{-1}(\text{m})$

$^1\text{H NMR}$ : 0.88 ppm (d, 12H); 1.55 ppm (m, 2H); 2.23 ppm (t, 1H);  
5.1 ppm (broad singlet, 2H)