1. (25 pts) Complete the following reactions, clearly indicating stereochemistry where appropriate. If a mixture of diastereomers is formed, draw all the products. If a mixture of enantiomers is formed, draw one enantiomer only, and add the phrase " + enantiomer ".

b)
$$CH_3CH_2OLi$$
 CH_3CH_2OH

c)
$$\begin{array}{c} H_2, \text{ Pd} \\ \hline 25^0 \text{ C, 1 atm} \end{array}$$

d) O
$$\longrightarrow$$
 OH + H₂NOH $\xrightarrow{H^+}$

e)
$$H_2NNH_2$$
 OH, H_2O , heat

2. (10 pts) Complete the reaction below and briefly explain why one of the products exists in the enol form.