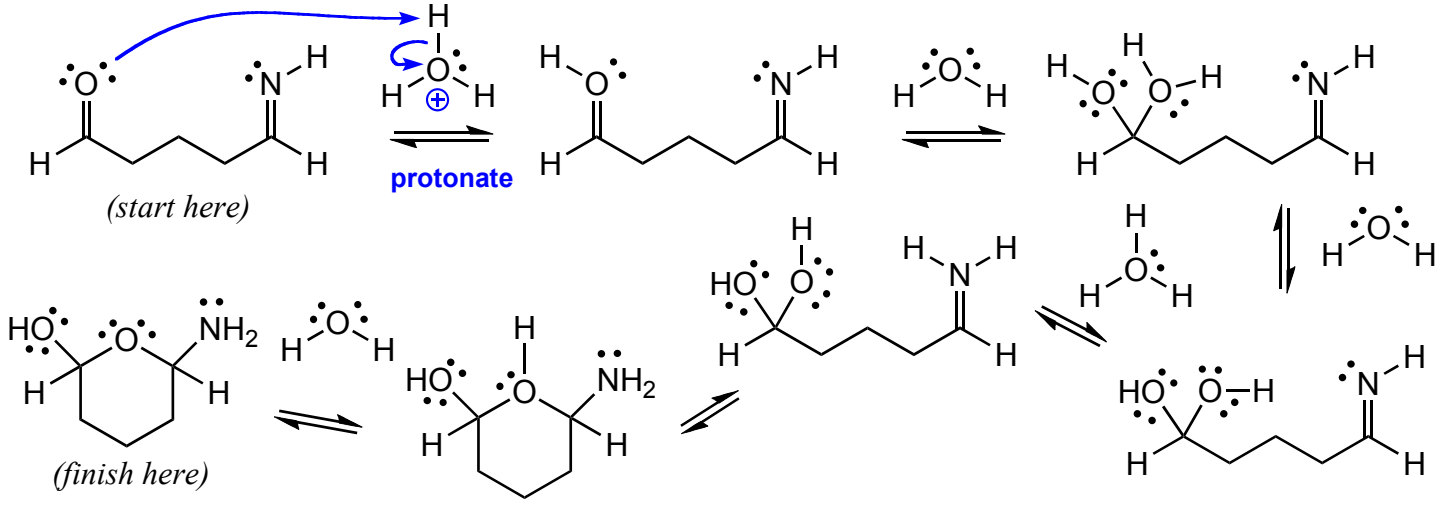
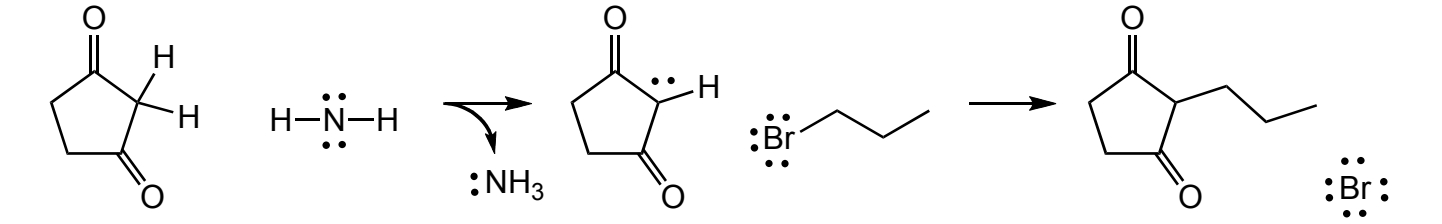
Library of Organic Chemistry Active Learning (LOCAL) Resources

Formal Charges, Curved Arrows & Transition States

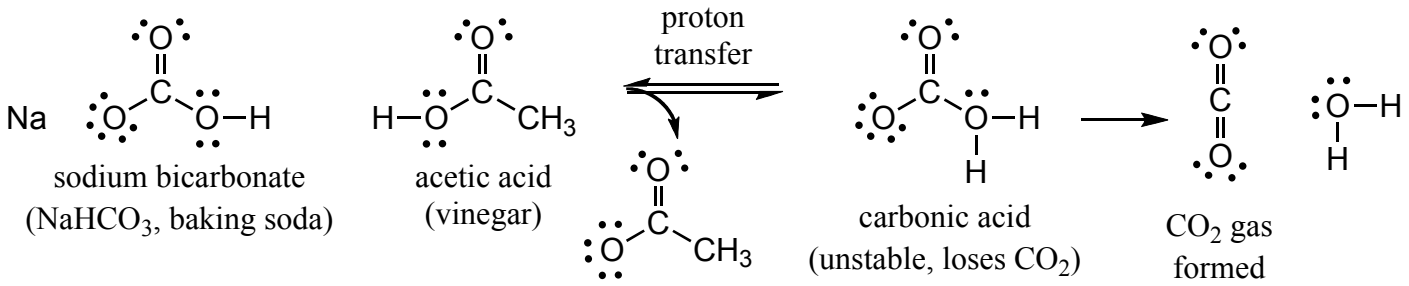
Add in any **missing formal charges**. **Draw curved arrows** for each step of the following mechanisms. Identify any **proton-transfer** (acid-base) steps and label the step as "protonate" or "deprotonate" to describe what is happening to the organic compound involved - if it accepts a H^+ it's a protonation step ("protonate").

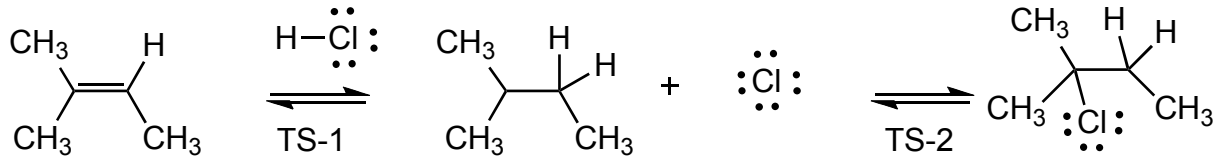
The first step of the first problem has been started for you to show an example of what is expected.





homemade "volcano" or chemistry experiment in a bag (www.youtube.com/ChemistryConnected)





Draw the **structures of the transition states TS-1 and TS-2** for the above two-step mechanism.