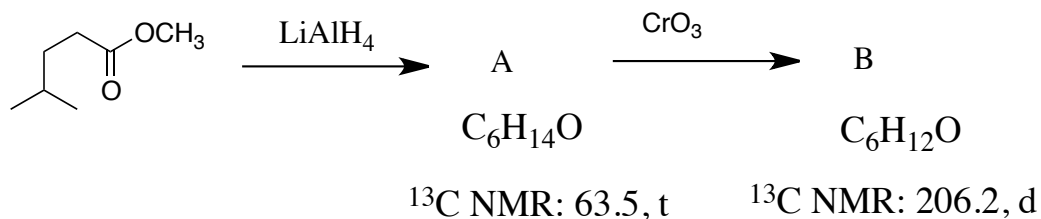
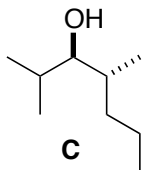


1. (10 points) Deduce the structures of **A** and **B**, and name **A** and **B**.



2. (10 points) Using any starting materials that contribute three or fewer carbons to the final product, outline a synthetic route to **C**. Absolute configuration is not important, but relative configuration is.



3. (10 points) Deduce the structure of **E**, and draw an arrow-pushing mechanism for its formation.  $\text{NaBH}_4$  can be represented in the mechanism as  $\text{H}^-$ . Mild acid workup is assumed.

