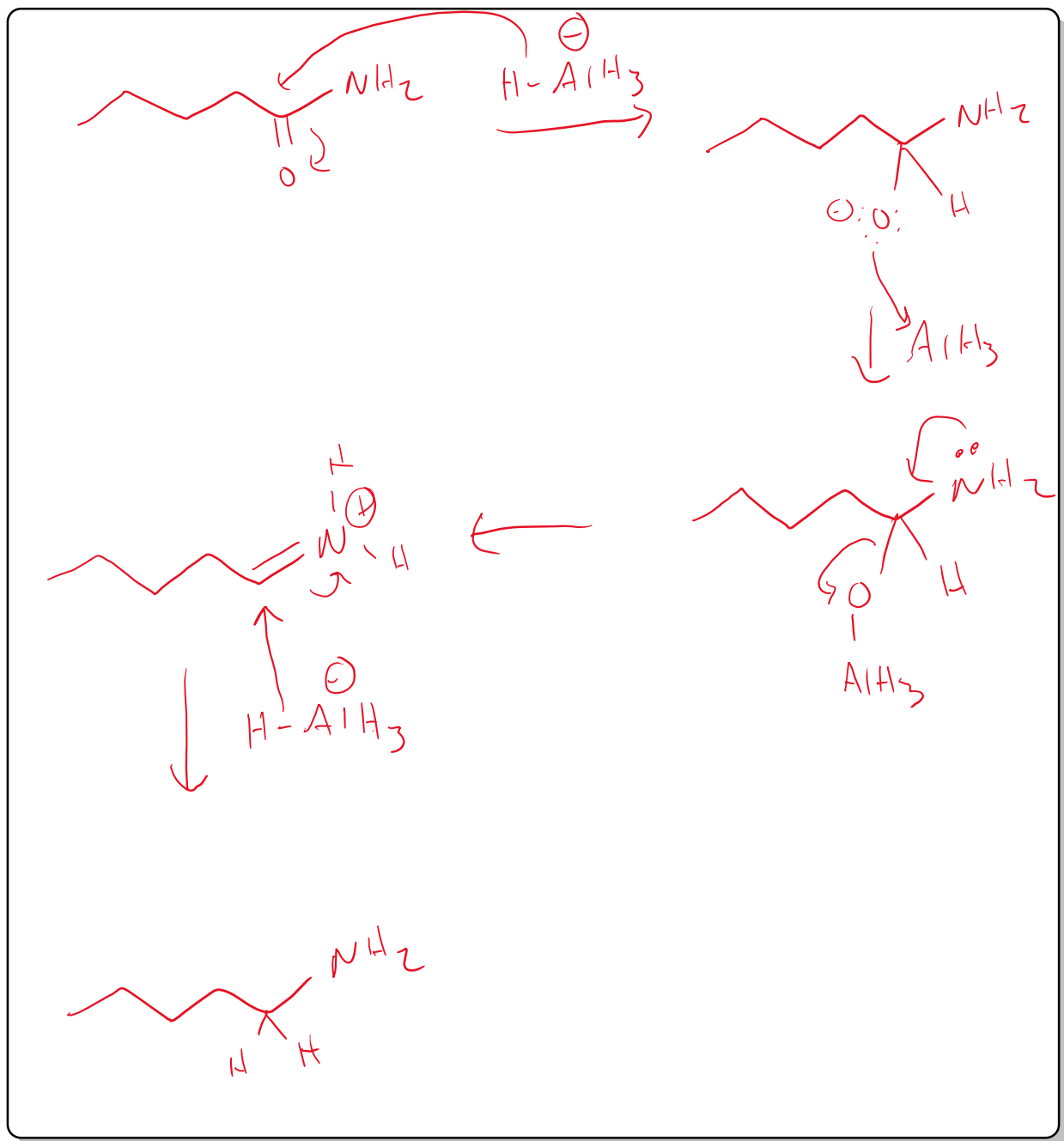
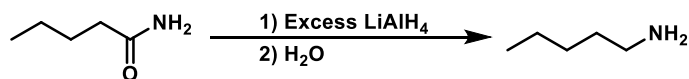


1. **Mechanism.** Provide a curved-arrow mechanism for the following transformation. (4 pt)



2. **Guided Synthesis.** Starting from the carboxylic acid in the middle, complete the various synthetic pathways given by filling in either the reagents needed or the products. (6 pt)

