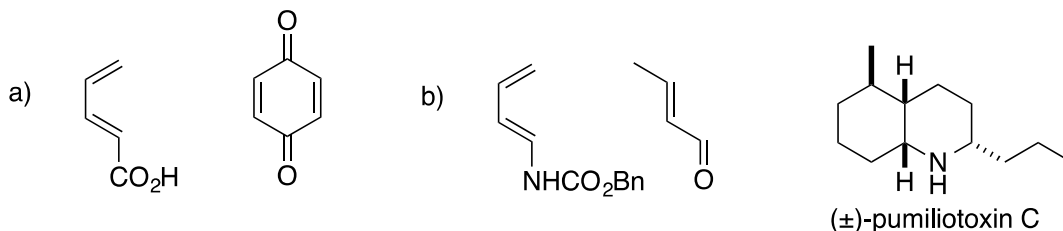


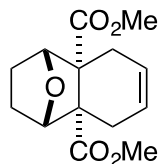
# CHEM95002: Orbitals in Organic Chemistry - Pericyclics

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1. Draw the approach trajectory, the transition state and the Diels-Alder product for the following two diene/dienophile combinations (assume they obey the *endo* rule). *NB.* The second reaction is the first step in an Overman synthesis of racemic pumiliotoxin C.



2. The molecule below was synthesized from a heterocycle, a diene and a disubstituted alkyne in three steps including a selective reduction. Perform a retrosynthetic analysis on the target molecule and hence deduce the synthetic route used:



3. Predict the products of the following reactions:

