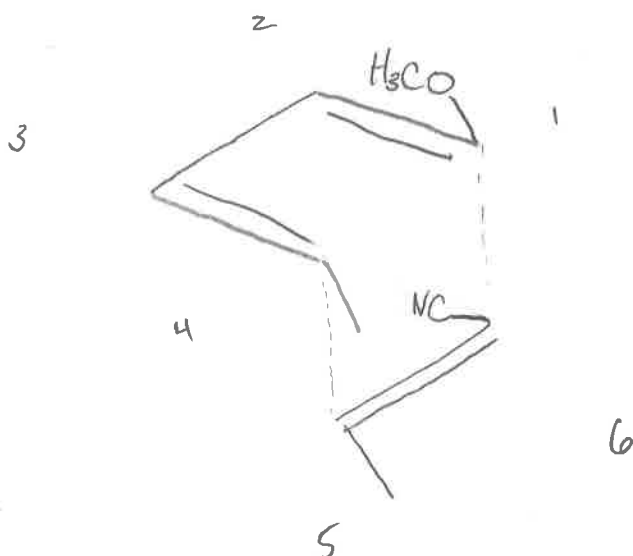
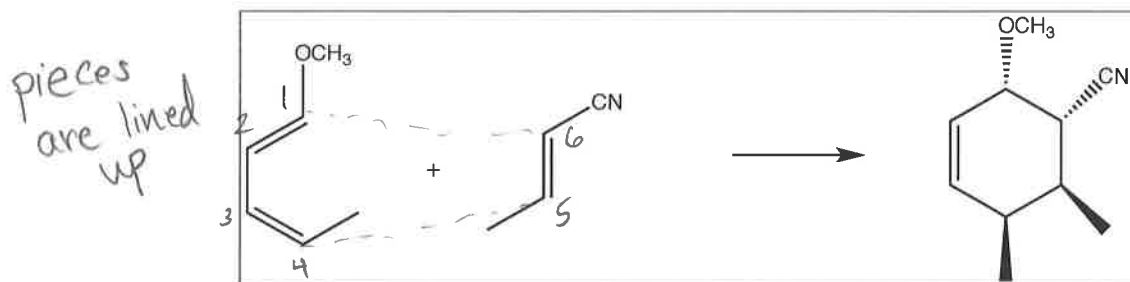


Conjugation #4: Drawing Diels Alder Transition States

Now that we have a handle on how to effectively predict the products for Diels Alder, we have one more aspect to master regarding Diels Alder Rxns: Drawing the Transition State. However, like we said in the last video, once you can get a decent idea of how the Diene and Dienophile are spatially arranged, drawing the transition state is methodical and simple. Remember, we draw the transition state to illustrate the Endo Effect, which is the reason we can use the "Out/In Group" shortcut for assigning stereochemistry in Diels Alder products.

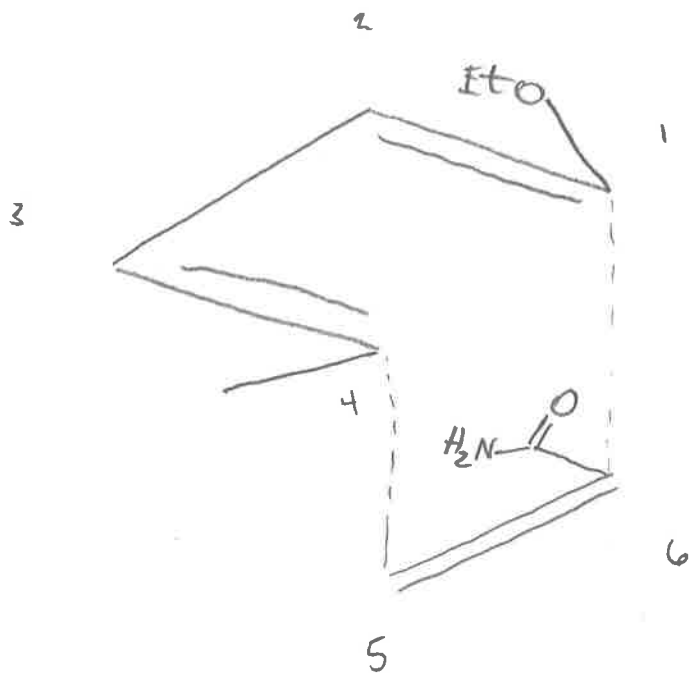
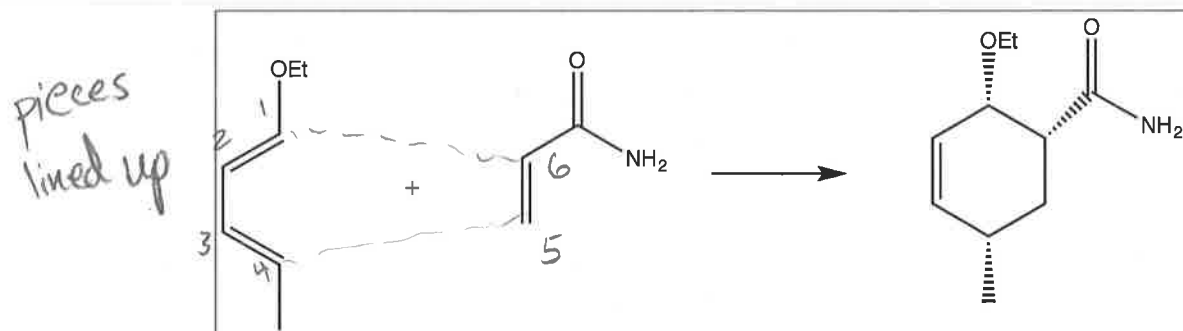
But I could ramble on for days. I'll stop talking, and we'll get to it 😊. All we're doing in this worksheet is drawing Diels Alder Transition States.

- 1.) Draw the transition state for the following Diels Alder Rxn shown below. Remember to number your carbons, use the technique we talked about to draw the Diene over the Dienophile (or Dienophile or Diene, whichever one you prefer), and fill your groups.



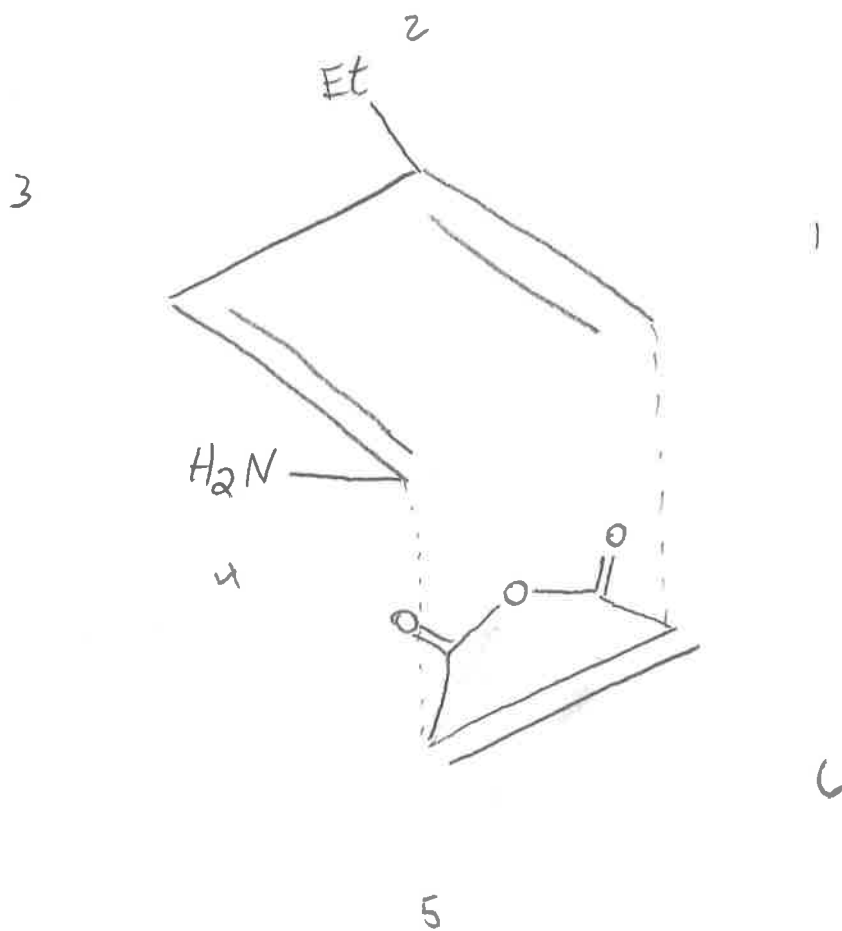
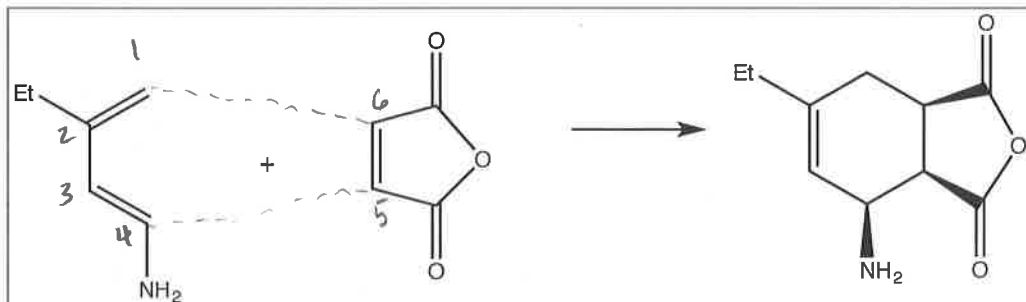
2.) Hopefully that wasn't too bad, and you got it. If not, don't worry: Take a look at the answer and give it another shot. After that, give this one a try 😊.

Draw the transition state for the following Diels Alder Rxn shown below.



3.) Alright, way to go. Now give this one a go:

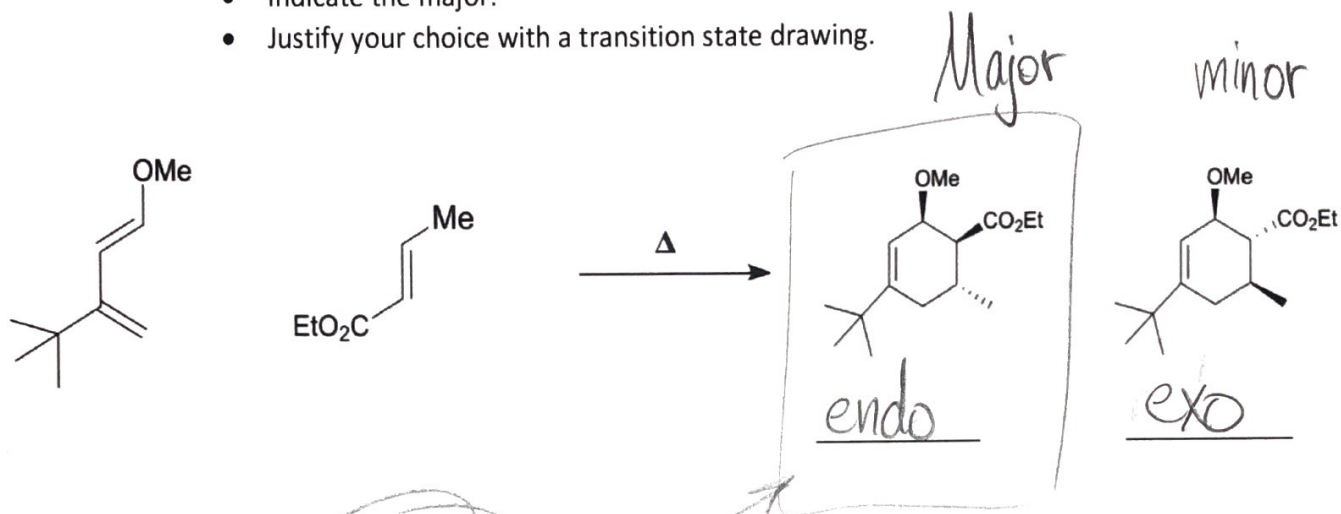
Draw the transition state for the following Diels Alder Rxn shown below.



Okay, now that we have drawing transition states under our belt, let's do a problem that puts ALL of our collective Diels Alder knowledge together.

Consider the following reaction.

- Label the **endo** and **exo** Diels Alder products.
- Indicate the major.
- Justify your choice with a transition state drawing.



Endo



P-orbital stabilization

