

Focus on the mechanism steps for each these reactions to prepare for Exam 3.  
Think about how the e- pairs are transferred, that is from a Nu- atom to an E+ atom.  
Think about how you show the transfer a curved arrow from negative (-) to positive (+).  
Practice drawing the reacting atoms with all bonds, charges, and curved arrows.  
Pay attention to details like the number of atoms, bonds and e- pairs.  
Use the homework and the pictures in our notes as guides.

#### Ch 20 (Carboxylic Acids and Nitriles)

- Carboxylic acid from a Grignard reagent and CO<sub>2</sub>
- Dehydration of an amide into a nitrile using SOCl<sub>2</sub>
- Hydrolysis of a nitrile in base to make an amide then a carboxylic acid

#### Ch 21 (Acid Derivatives)

- Converting a carboxylic acid into an acid chloride using SOCl<sub>2</sub>
- Converting an acid chloride to an ester (using alc) or amide (using amine)
- Ester hydrolyses with acid or base
- Reduction of an amide into an amine using a hydride

#### Ch 22 (Alpha Substitution)

- Enolate resonance
- Malonate synthesis
- Acetoacetate synthesis
- Hydrolysis and Decarboxylation