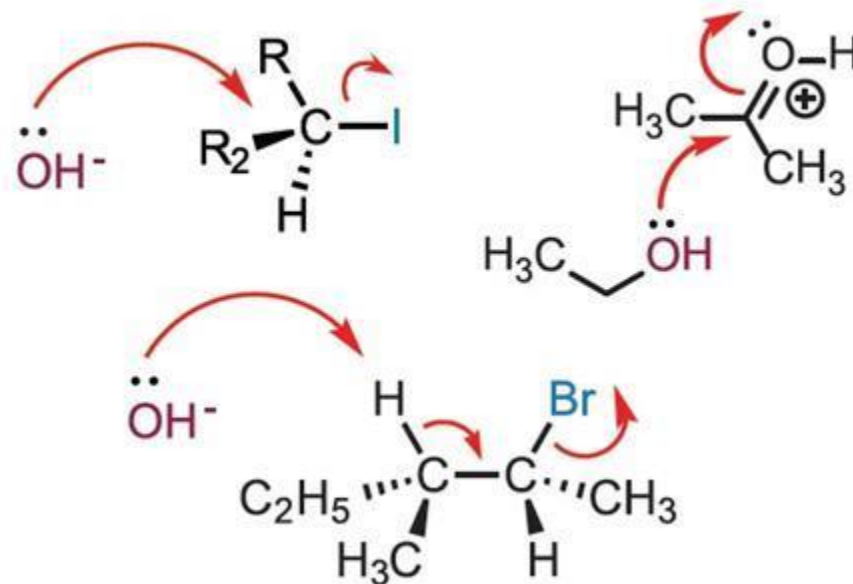


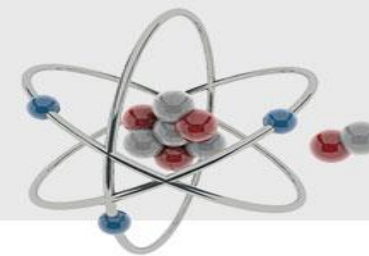
Lecture 0

# Recap

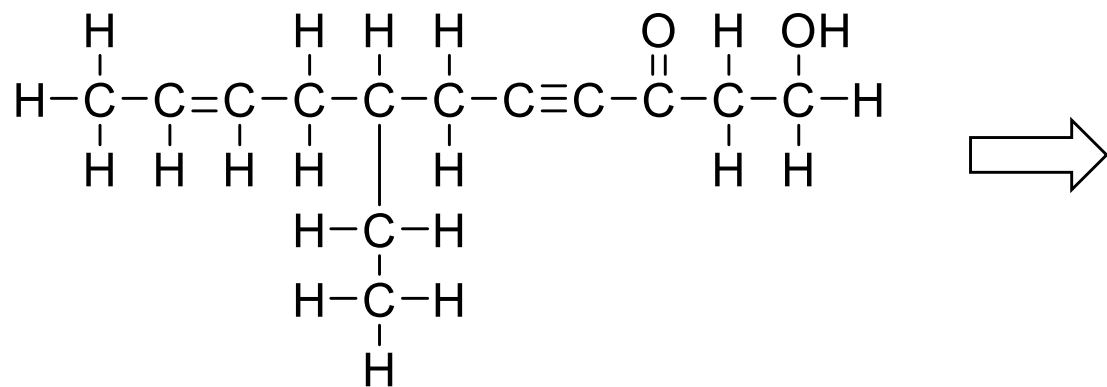
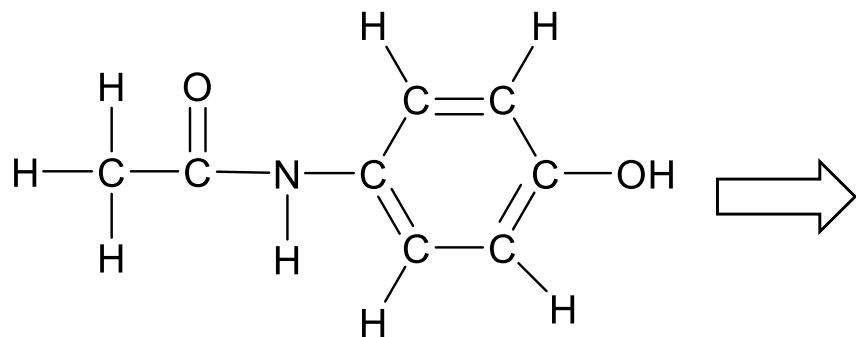


*Instructor: Asst. Prof. Dr. Tanatorn Khotavivattana*  
*E-mail: tanatorn.k@chula.ac.th*

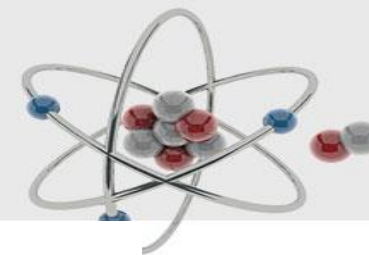
# Recap - Line-Angle Formulas



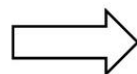
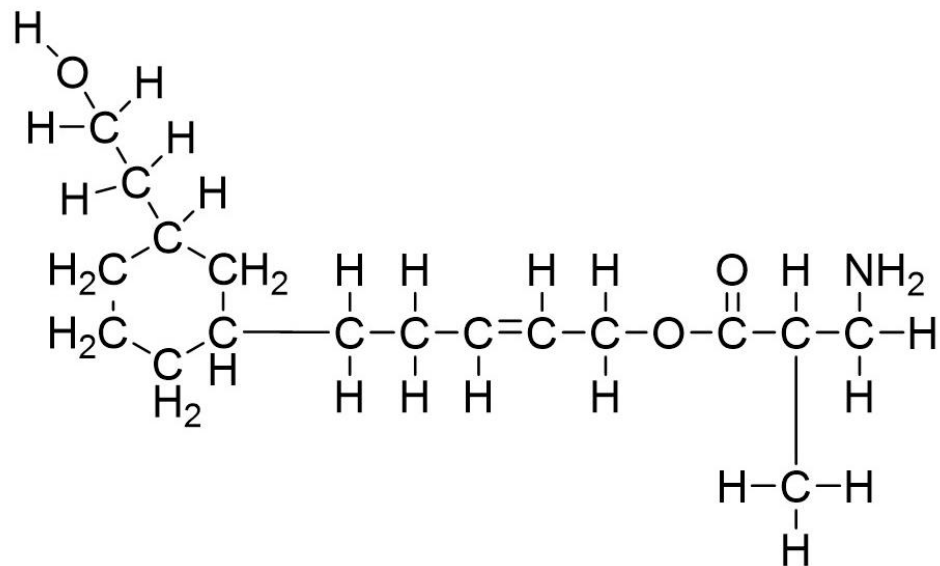
Draw Line-angle formula of the following compound



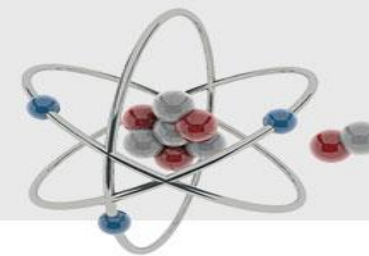
# Recap - Line-Angle Formulas



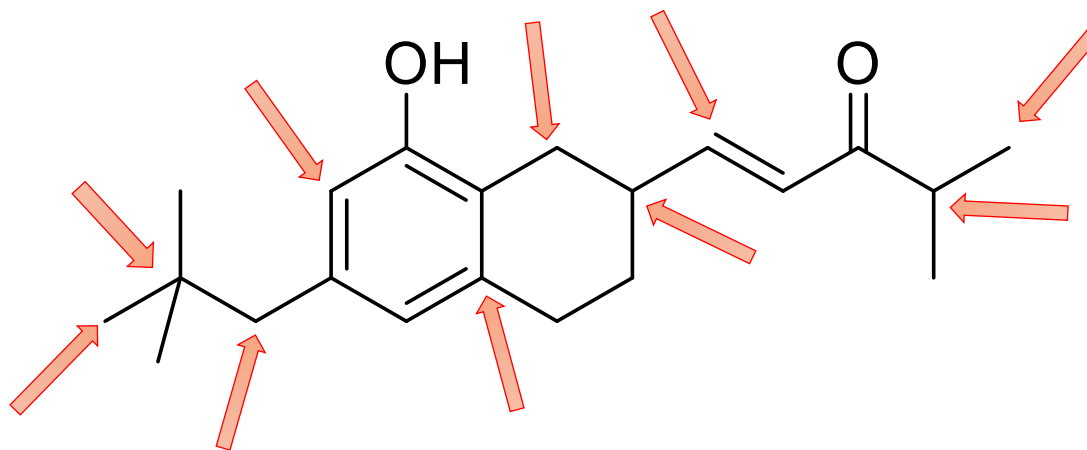
Draw Line-angle formula of the following compound



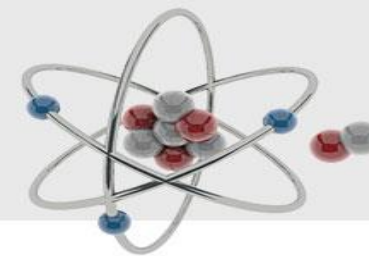
# Recap - Line-Angle Formulas



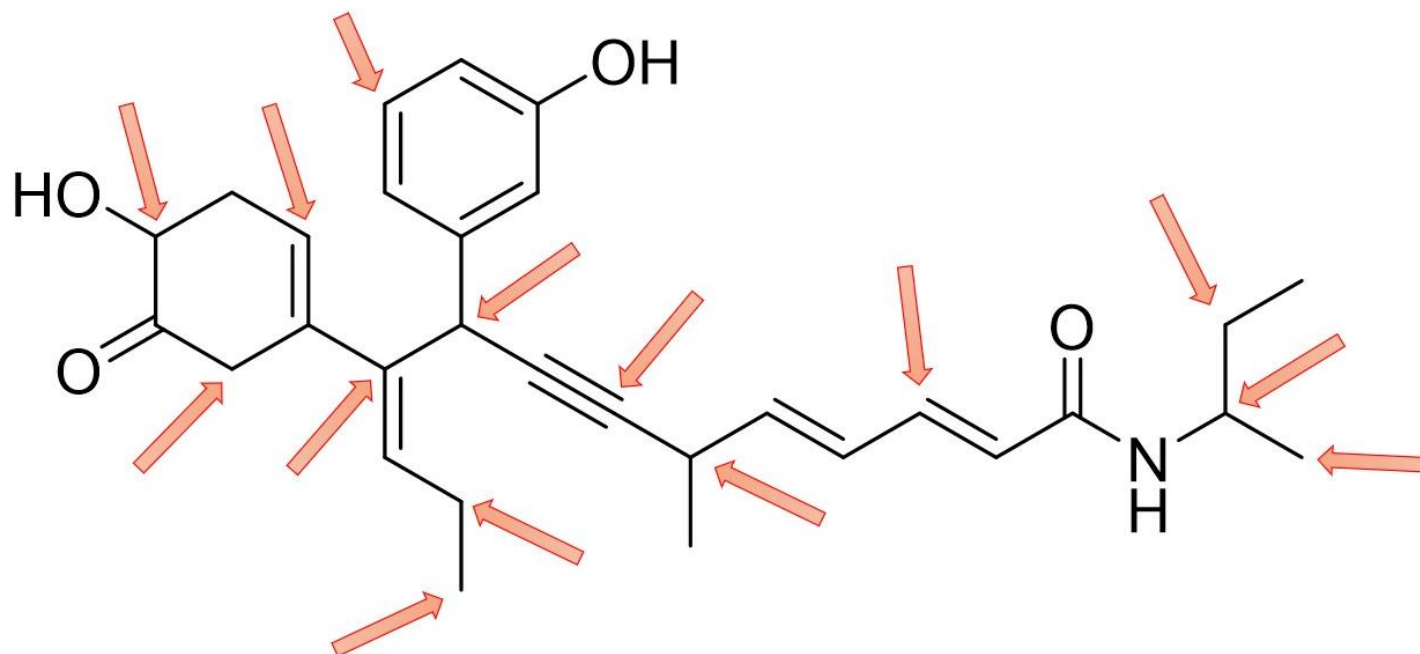
How many hydrogen atom is attached to the specified **carbons**?



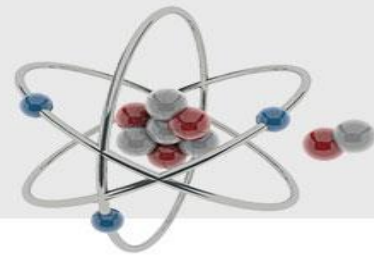
# Recap - Line-Angle Formulas



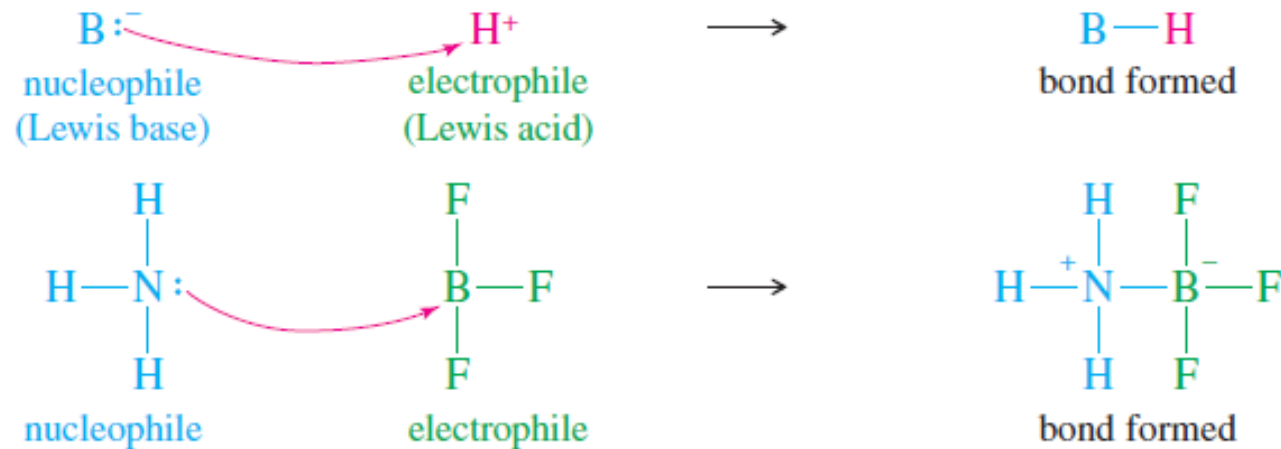
How many hydrogen atom is attached to the specified **carbons**?



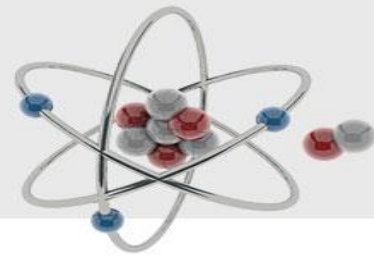
# Recap - Drawing reaction mechanism



- **Nucleophile** (lover of nuclei) = **Lewis bases** = species with available electrons that can be donated to form new bonds.
- **Electrophile** (lover of electrons) = **Lewis acids** = species that can accept these electron pairs to form new bonds.

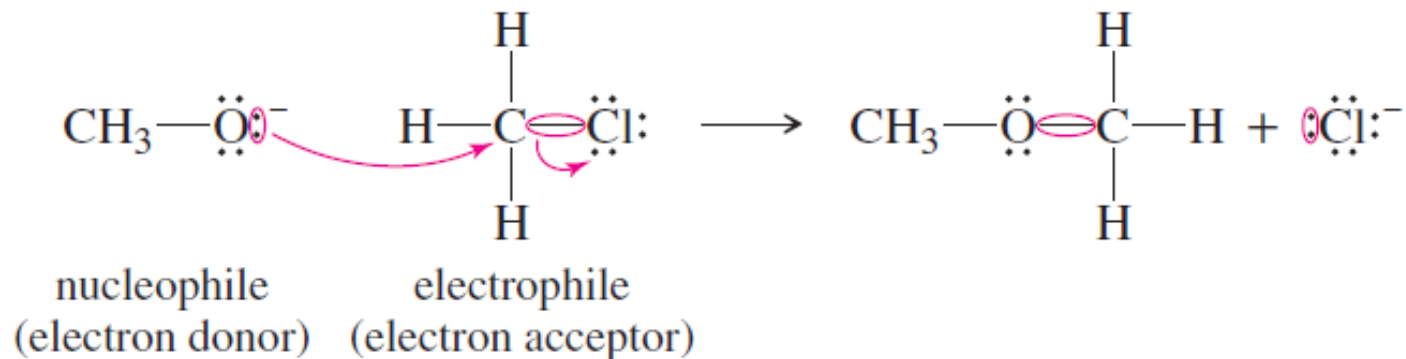


# Recap - Drawing reaction mechanism

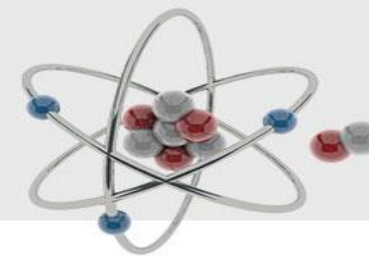


The **curved-arrow formalism** is used to show the **flow of an electron pair from the electron donor to the electron acceptor**.

The **movement** of each pair of electrons involved in making or breaking bonds is indicated by its own separate arrow



# Recap - Drawing reaction mechanism



## Basic Concept

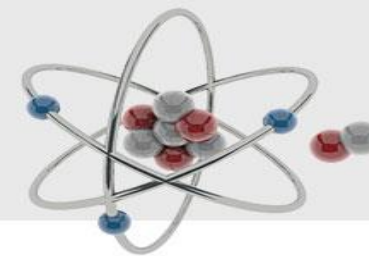
**Nucleophiles**

**Electrophiles**

**Leaving groups**

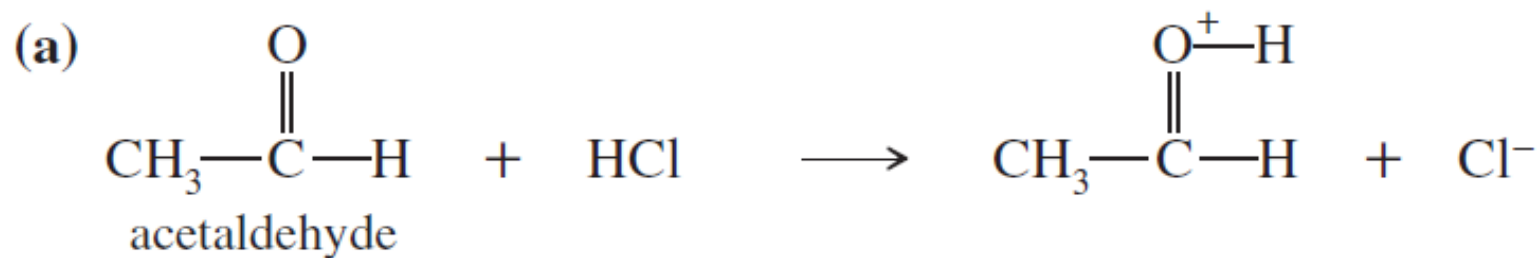


# Recap - Drawing reaction mechanism

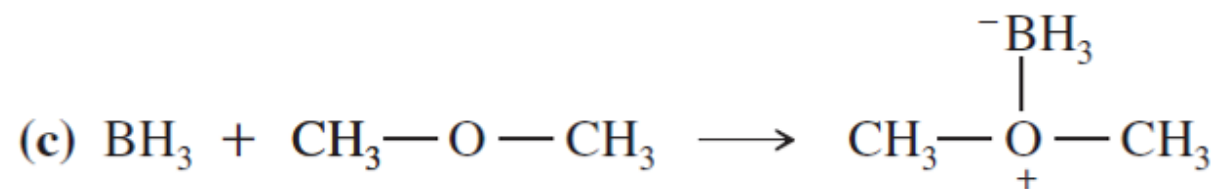
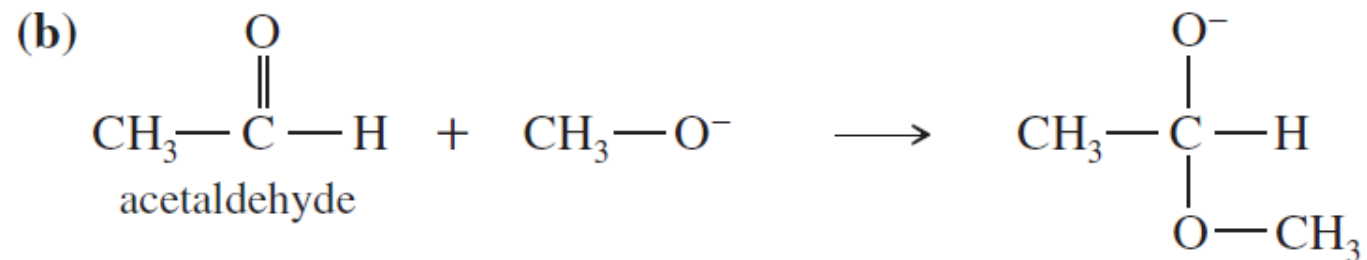
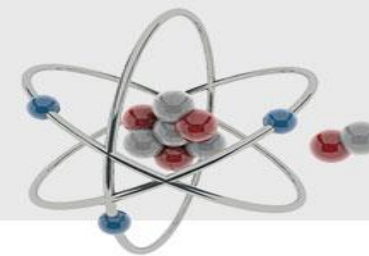


In the following reactions

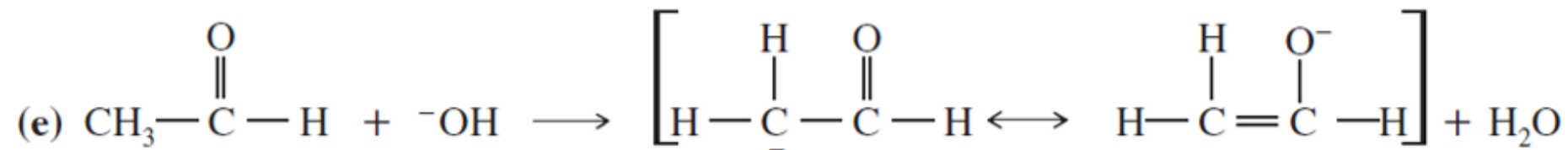
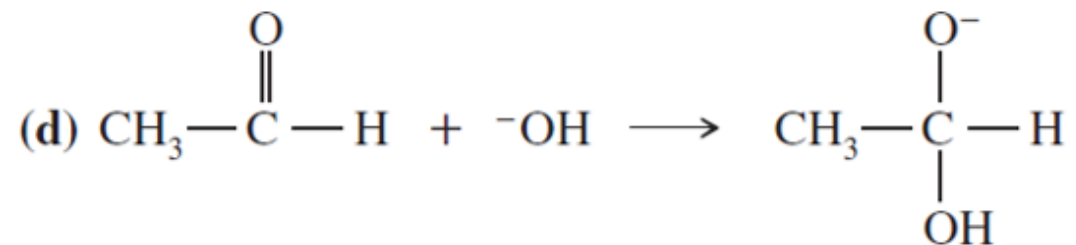
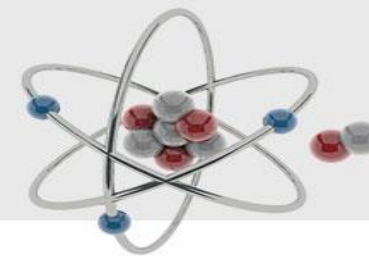
- 1) Use the **curved-arrow formalism** to show the movement of electron pairs in these reactions
- 2) Determine which species are acting as **Electrophiles (E)** and which are acting as **Nucleophiles (Nu)**



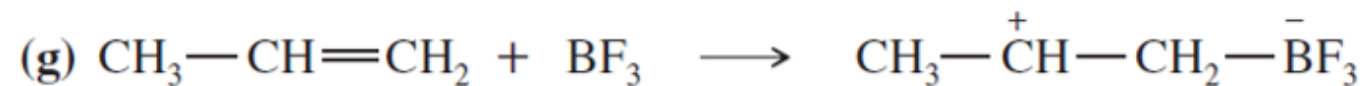
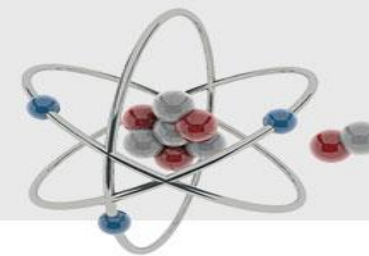
# Recap - Drawing reaction mechanism



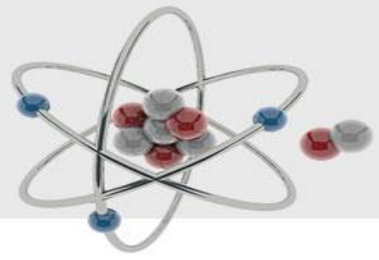
# Recap - Drawing reaction mechanism



# Recap - Drawing reaction mechanism



# Recap - Drawing reaction mechanism



In the following reactions

- 1) Use the **curved-arrow formalism** to show the movement of electron pairs in these reactions
- 2) Determine which species are acting as **Electrophiles (E)** and which are acting as **Nucleophiles (Nu)**

