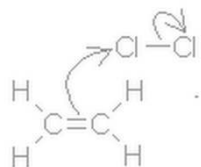


# Alkenes



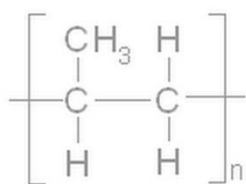
## 1. Bonding, shape and drawing

### 2. E-Z isomerism

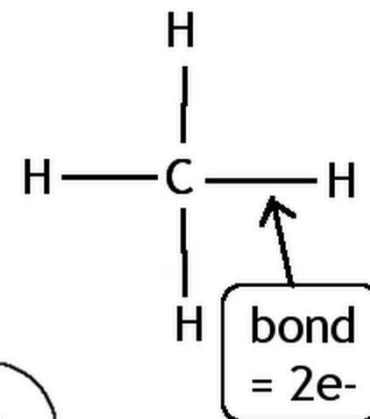
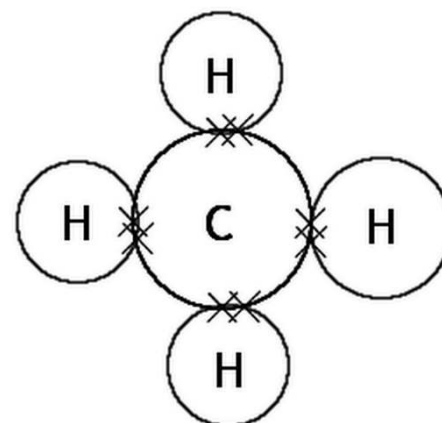
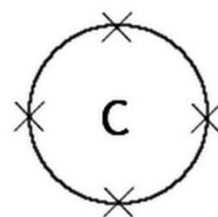
### 3. a) Electrophilic addition reaction b) " " " " mechanism

### 4. Markovnikov's rule

### 5. Polymerisation

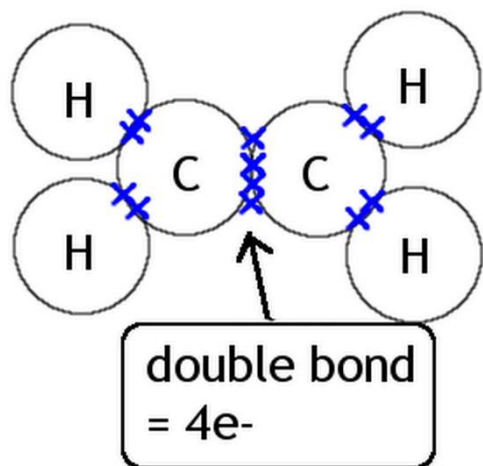


*in alkanes*

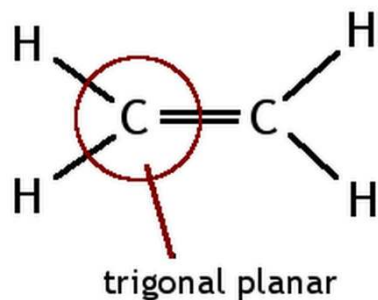


4 bonds

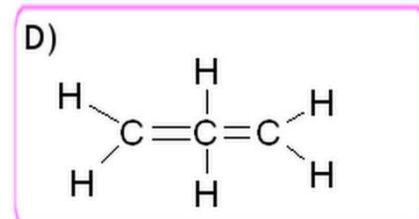
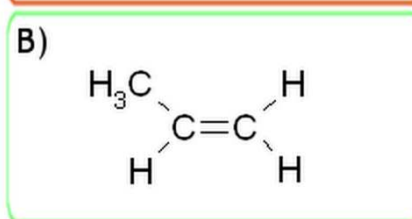
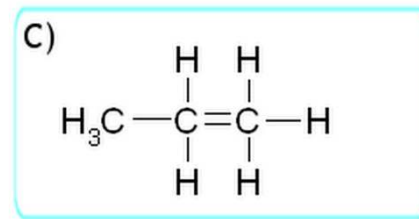
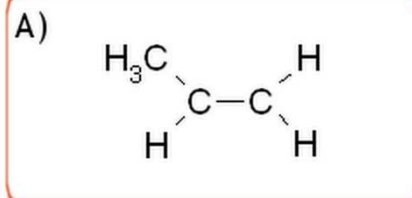
*in alkenes*



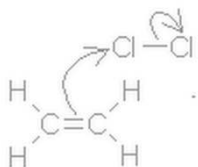
C-C +347kJ/mol  
C=C +612kJ/mol



Which is the correct drawing of propene?



# Alkenes



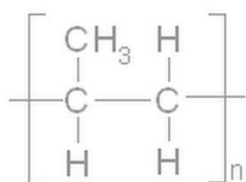
1. Bonding, shape and drawing

2. E-Z isomerism

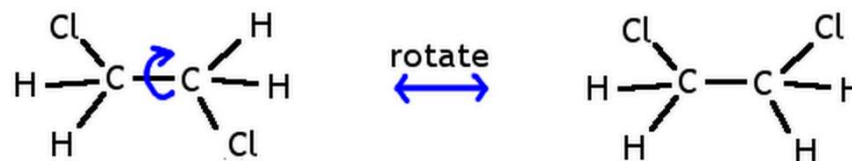
3. a) Electrophilic addition reaction  
b) " " " " mechanism

4. Markovnikov's rule

5. Polymerisation



*in alkanes*



*in alkenes*



**E** ← → **Z**

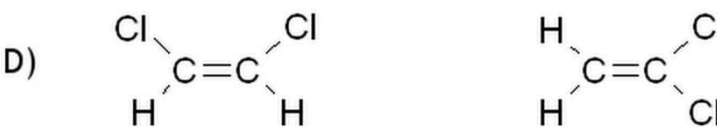
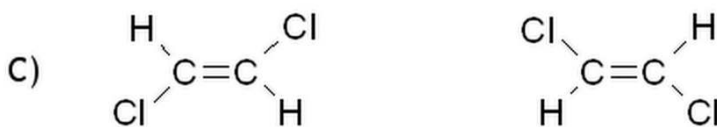
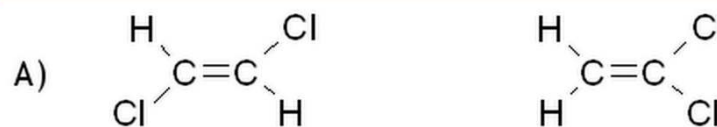
isomers

occurs when

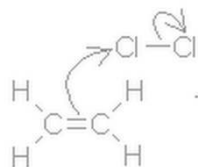
**2 different groups**

either side of double bond

Which is a pair of E-Z isomers?



# Alkenes



1. Bonding, shape and drawing

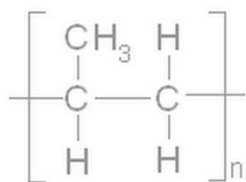
2. E-Z isomerism

3. a) Electrophilic addition reaction

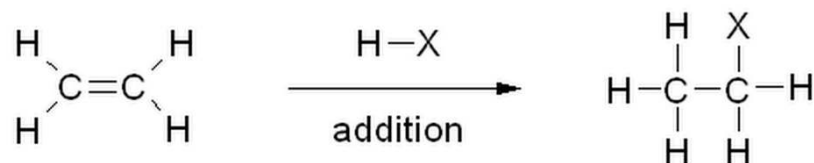
b) " " " " mechanism

4. Markovnikov's rule

5. Polymerisation

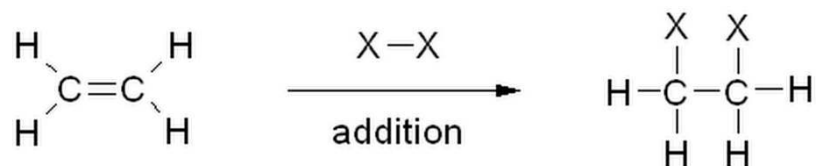


## Electrophilic Addition Reaction



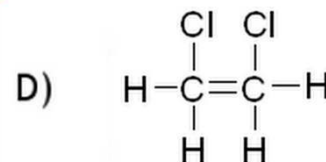
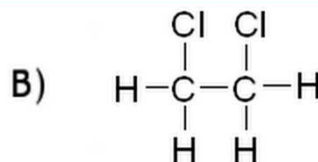
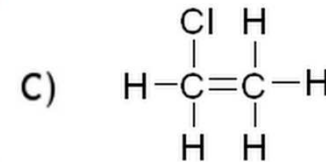
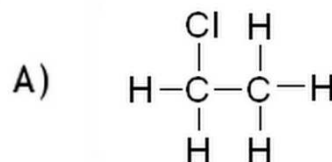
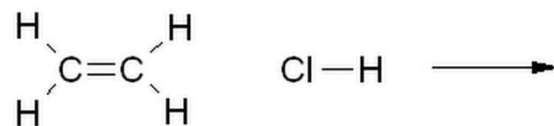
X = Cl, Br, I

## Electrophilic Addition Reaction

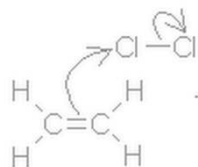


X = Cl, Br, I

What will the product of this reaction be?



# Alkenes



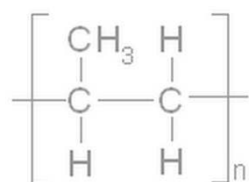
1. Bonding, shape and drawing

2. E-Z isomerism

3. a) Electrophilic addition reaction

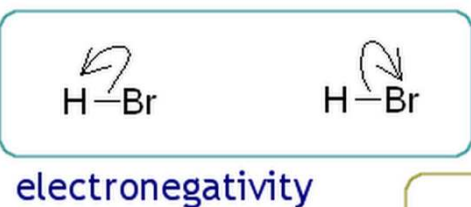
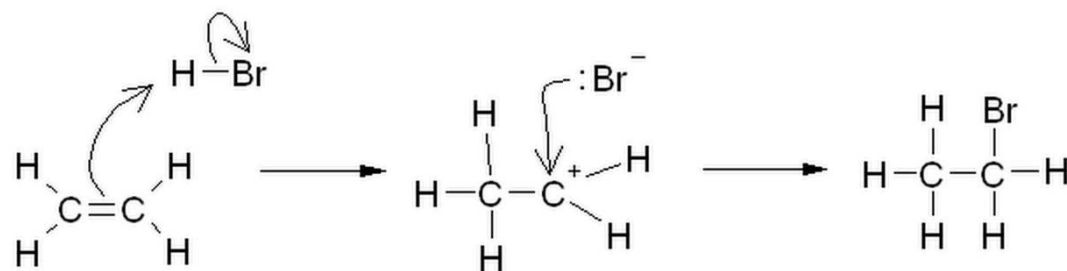
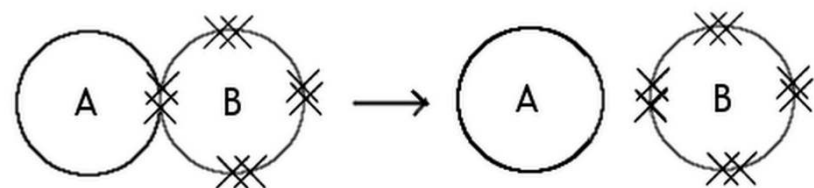
b) " " " " mechanism

4. Markovnikov's rule

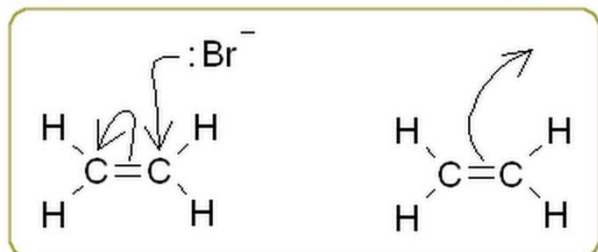


5. Polymerisation

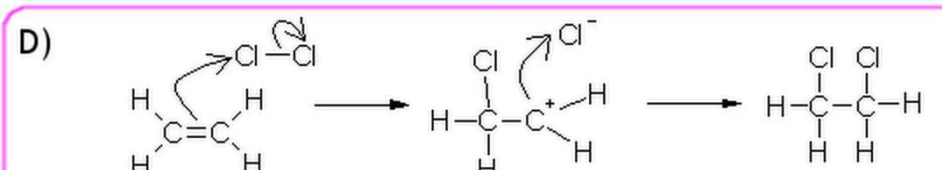
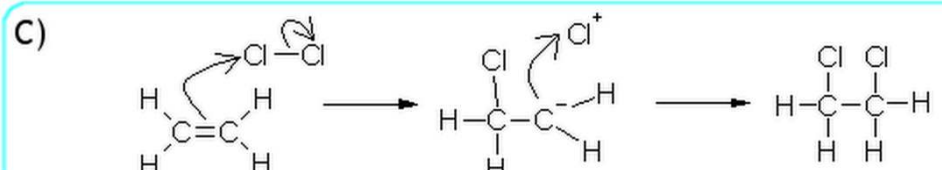
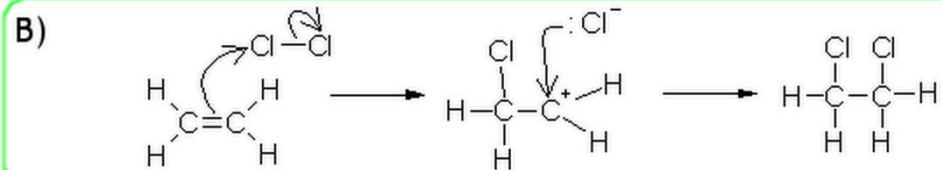
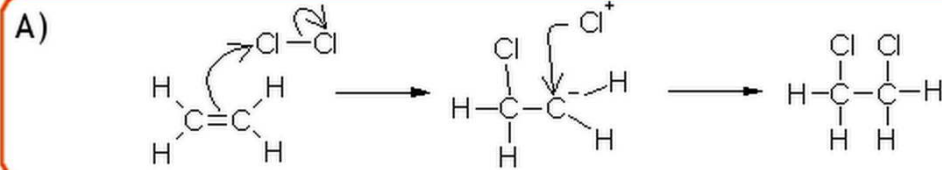
Curly arrows  
movement of 2e-



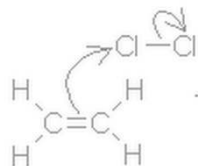
electron rich



which mechanism is correct?



# Alkenes



1. Bonding, shape and drawing

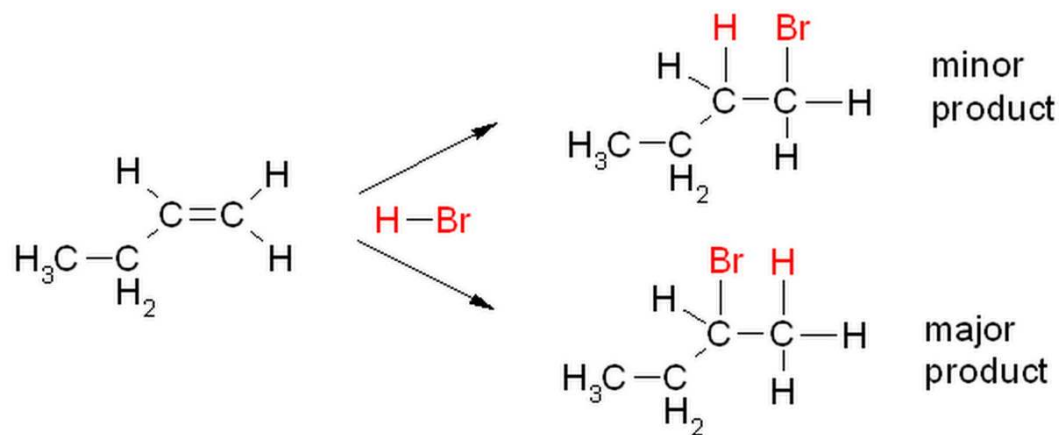
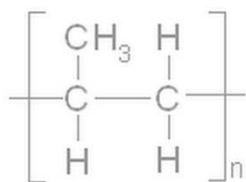
2. E-Z isomerism

3. a) Electrophilic addition reaction

b) " " " " mechanism

4. Markovnikov's rule

5. Polymerisation



Which intermediate and product would form:

