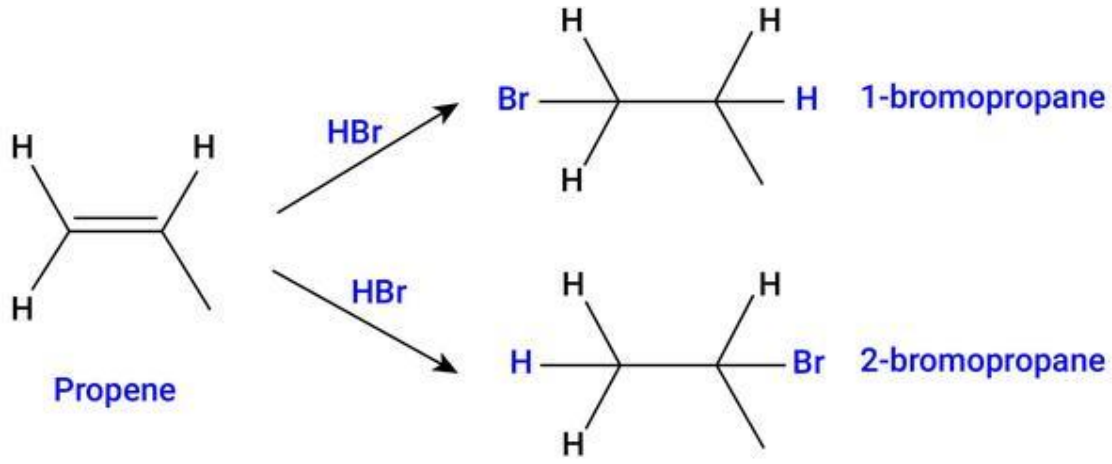
Ticks and tips on hydrocarbons

Preparation of Alkanes

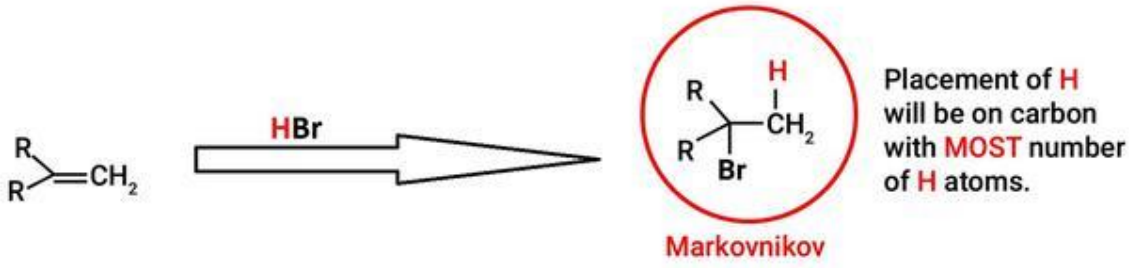
All the preparation reactions of alkanes can be memorised using the following mnemonics.

Addition Reaction of HX to Unsymmetrical Alkanes (Markonikov's Rule)

There are two products possible when HX is added to an unsymmetrical alkene like Propene.



The major and the minor products is decided by the Markovnikov's rule.
According to the Markovnikov's rule, the major product is the one where **positive part** of the agent gets added on the carbon with **most** number of **hydrogen** atoms (**least substituted carbon**). The positive part is **H** when the agent is an acid halide (HX).

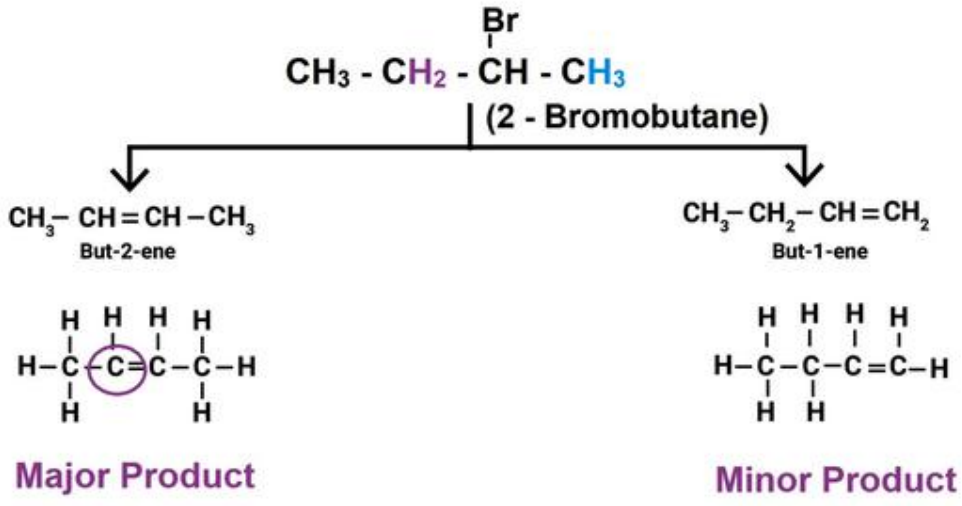


It can here be remembered as "Rich gets richer".

Preparation of Alkenes from Alkyl Halides

In dehydrohalogenation reactions, major product is that alkene with **lesser number of hydrogen atoms** on the doubly bonded carbon atoms.

So, major product is the compound in which carbon with lesser number of hydrogen atoms loses more hydrogen atoms.



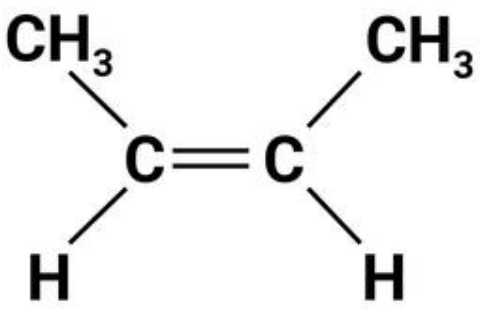
Or you can also remember it as **'Poor becomes Poorer'.**

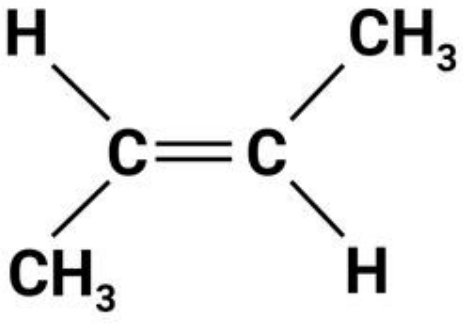
That's because carbon which is poor in hydrogen becomes poorer by losing hydrogen.

4

Geometrical Isomers of Alkenes

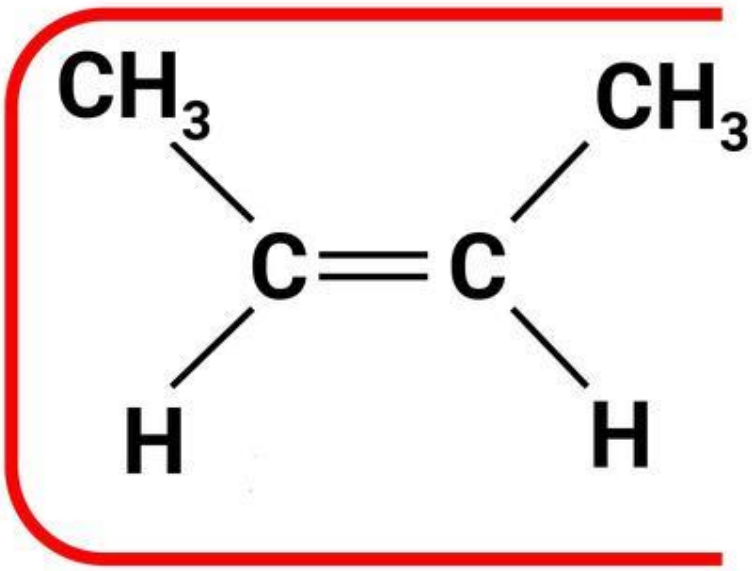
If I ask you to identify which one is cis and which one is trans from the following image, how much time will it take for you to identify them correctly? Let me help you identify them easily.





As you know, Cis starts with a C

So, the **functional groups** around the carbon-carbon double bond also form a C.



and **Trans**, therefore is the other one by default. Hitting two targets with one shot.