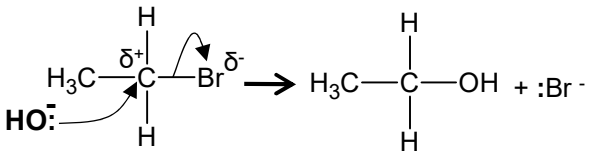
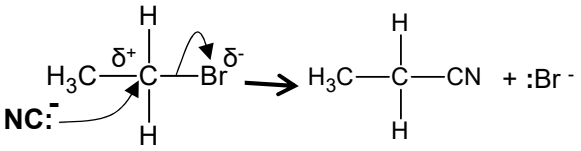
Mechanism Summary for AS AQA Chemistry

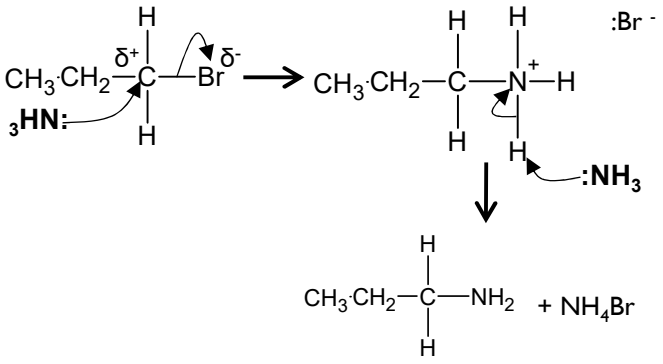
Nucleophilic Substitution of halogenoalkanes with aqueous hydroxide ions.



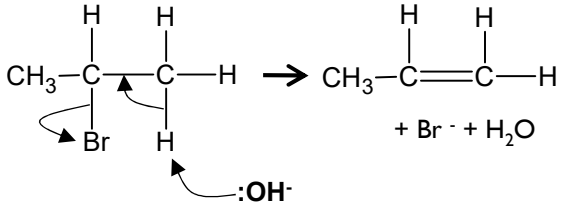
Nucleophilic Substitution of halogenoalkanes with cyanide ions.



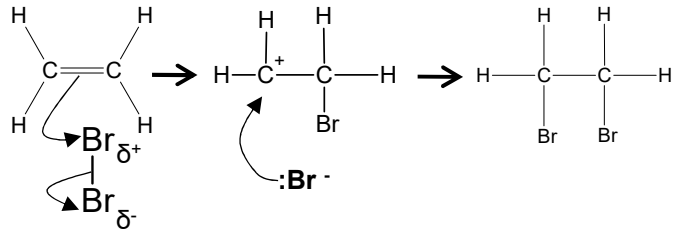
Nucleophilic Substitution of halogenoalkanes with ammonia



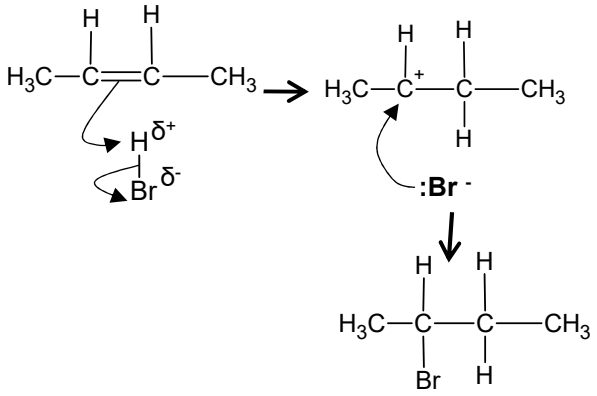
Elimination of halogenoalkanes with ethanolic hydroxide ions



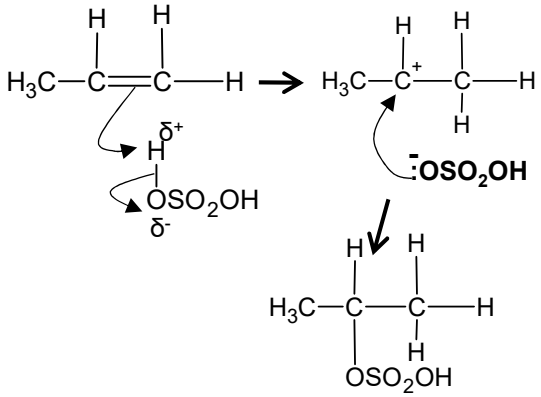
Electrophilic Addition of alkenes with bromine



Electrophilic Addition of alkenes with hydrogen bromide



Electrophilic Addition of alkenes with sulfuric acid



Free Radical Substitution of alkanes with bromine

STEP ONE Initiation

Essential condition: UV light

$Br_2 \rightarrow 2Br^{\cdot}$

STEP TWO Propagation

$CH_3CH_3 + Br^{\cdot} \rightarrow HBr + CH_3CH_2^{\cdot}$

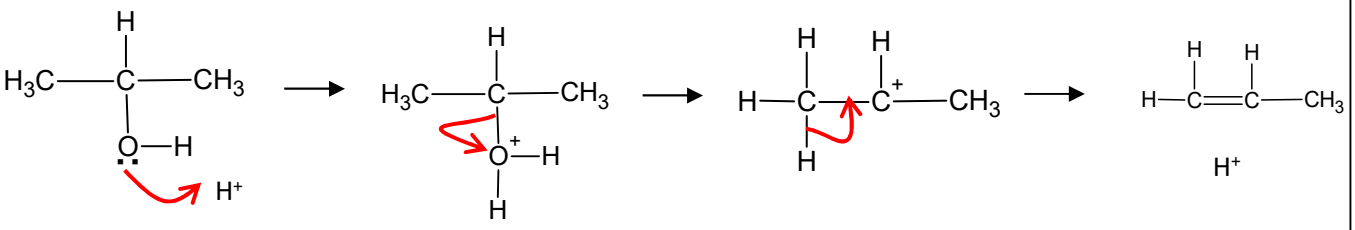
$CH_3CH_2^{\cdot} + Br_2 \rightarrow CH_3CH_2Br + Br^{\cdot}$

STEP THREE Termination

$CH_3CH_2^{\cdot} + Br^{\cdot} \rightarrow CH_3CH_2Br$

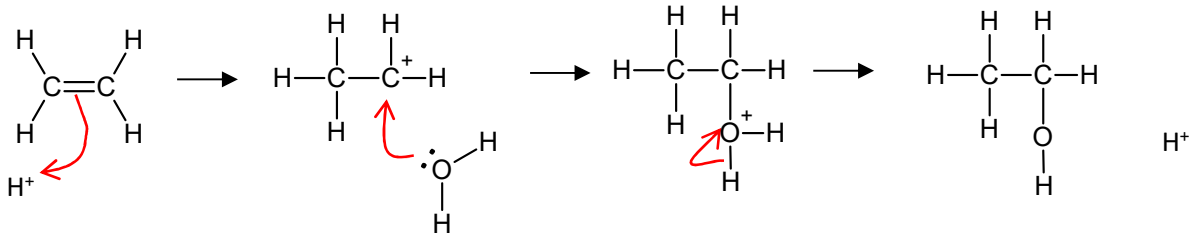
$CH_3CH_2^{\cdot} + CH_3CH_2^{\cdot} \rightarrow CH_3CH_2CH_2CH_3$

Acid catalysed elimination mechanism: alcohols →alkenes



The H^+ comes from the conc H_2SO_4 or conc H_3PO_4

Acid catalysed addition mechanism for hydration of ethene



The H^+ comes from the conc H_3PO_4

AS Reactions- Summary