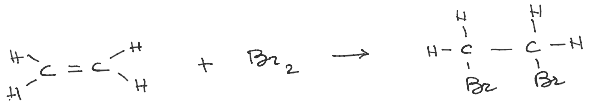
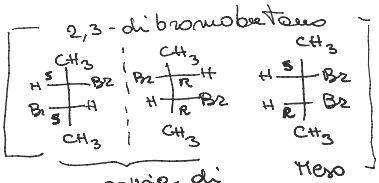
# ALOGENAZIONE (Addizione di alogeni $Br_2$, $Cl_2$)

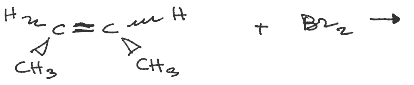


1,2 - dibromoetano

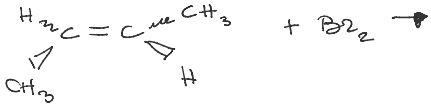
Reazione non regioselettiva

REAZIONE STEREOSPECIFICA



cis-2-butene + $Br_2$ → 2,3 dibromo butano COPPIA DI ENANTIOMERI

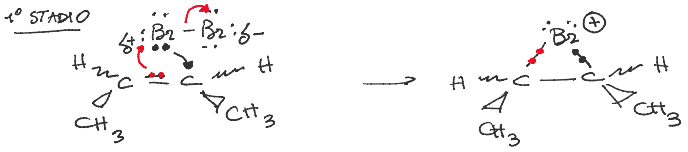


trans-2-butene + $Br_2$ → 2,3 dibromo butano MESO

Una reazione è stereospecifica quando a partire da un determinato stereoisomero configurazionale nei reagenti fornisce ESCLUSIVAMENTE alcuni stereoisomeri configurazionali nei prodotti.

MECCANISMO DI REAZIONE Bistadio

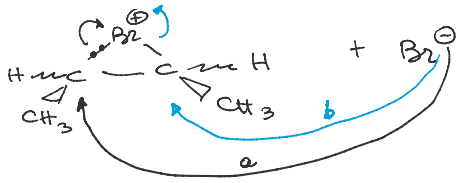
1° STADIO

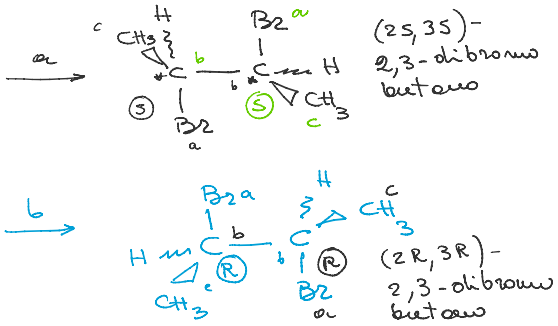


IONE ALONIO (ione bromonio ione cloronio)

Intermedio di reazione

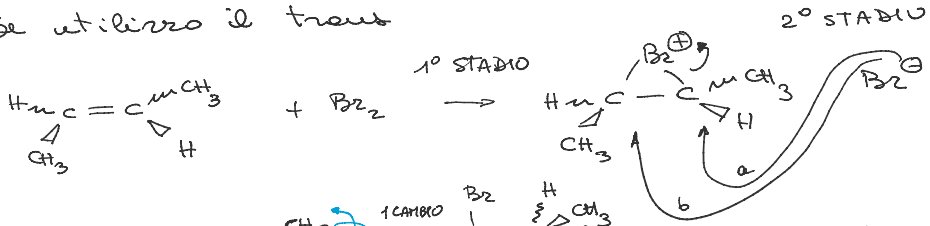
2° STADIO

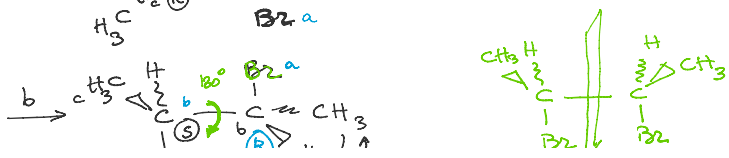


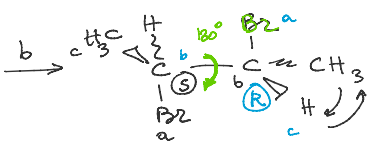


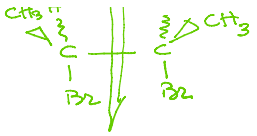

ADDIZIONE ANTI COMPLANARE

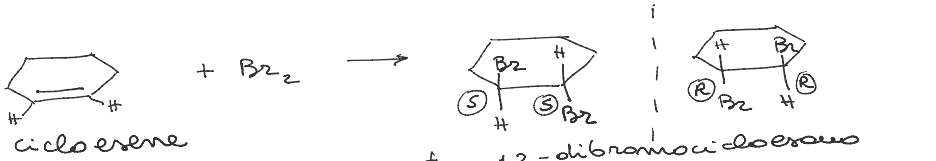
Se utilizzo il trans

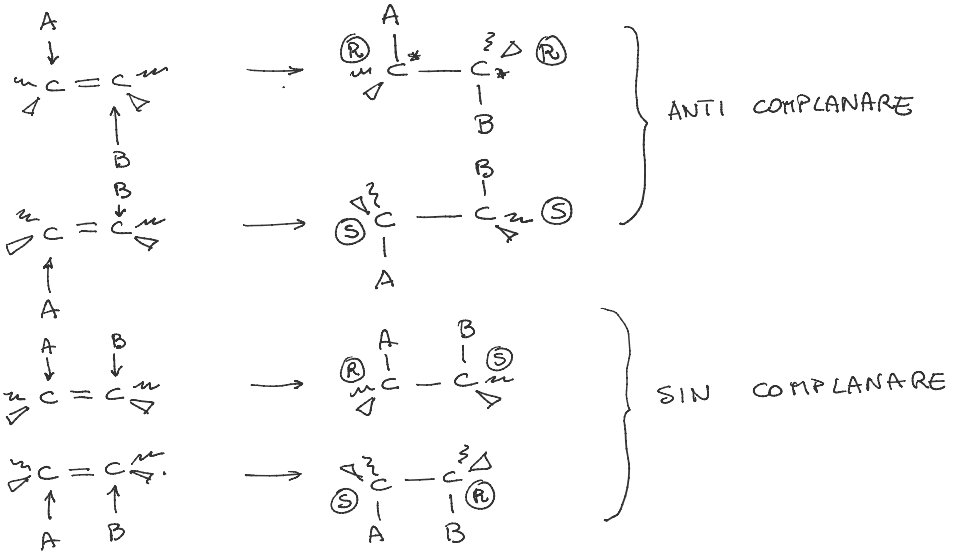


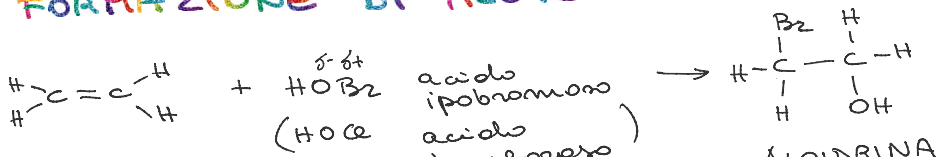






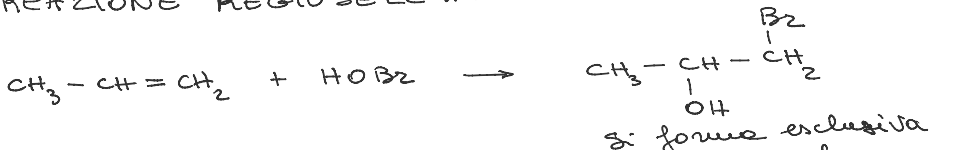




## FORMAZIONE DI ALOIDRINE

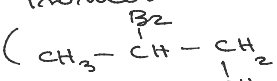



OPERATIVAMENTE SI USA $Br_2$ ($Cl_2$) in $H_2O$

REAZIONE REGIOSELETTIVA e STEREOSPECIFICA



si forma esclusivamente questo isomero di struttura



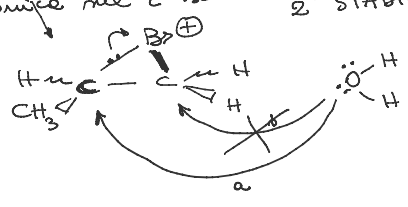
non si forma )

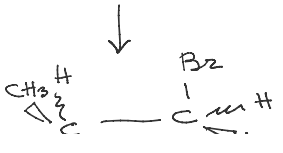
Meccanismo

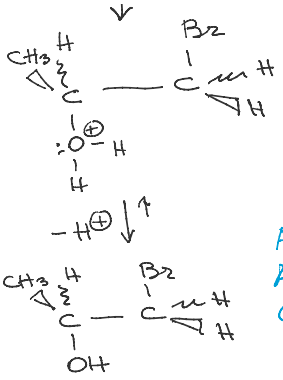
1° STADIO



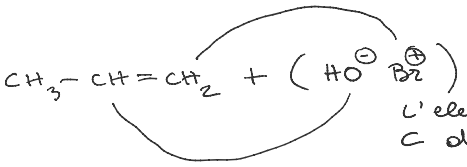
si crea una lacuna elettronica sul C secondario 2° STADIO



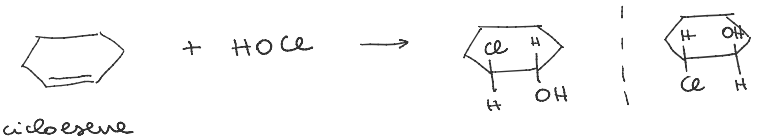




ADDIZIONE ANTI COMPLANARE



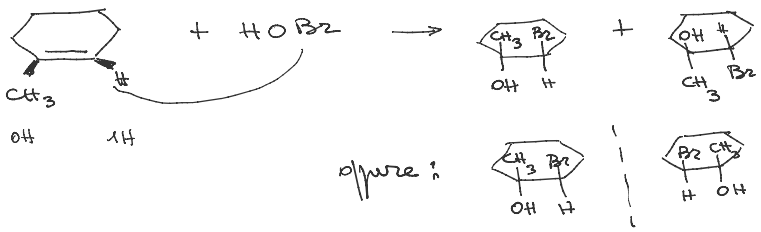
L'elettrofilo $Br^{\oplus}$ si lega al C del doppio legame che ha più H



coppie di enantiomeri

cicloesene

oppure posso scriverli così:



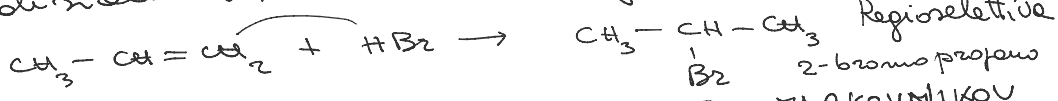
oppure:



Coppie di enantiomeri

## ADDIZIONE DI HBr in CONDIZIONI RADICALICHE

Abbiamo già incontrato l'addizione di HBr in condizioni ioniche (idroalogenazione)



Regioselettiva

2-bromopropano

PRODOTTO MARKOVNIKOV

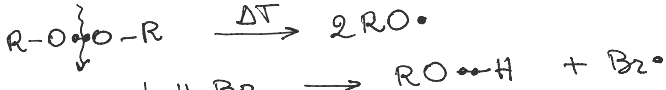
In presenza di perossido:

1-bromopropano

PRODOTTO ANTI-MARKOVNIKOV

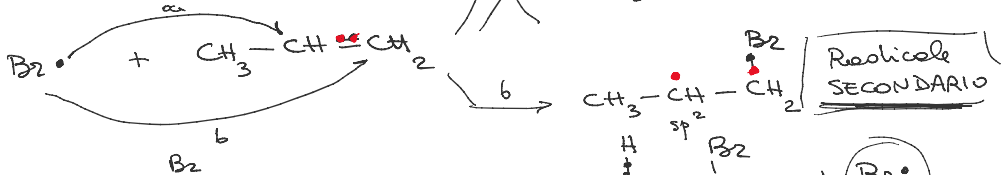
MECCANISMO Reazioni Radicaliche → Assenza di Solvente
→ Alte Temperature
→ Presenza di ROOR

INIZIAZIONE



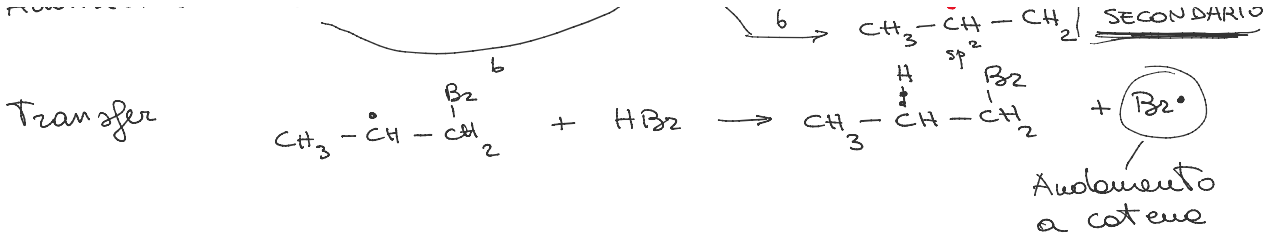
PROPAGAZIONE

Addizione



Radicale PRIMARIO

Radicale SECONDARIO


6
6
SECONDARIO
Transfer
+ HBr2
+ Br2•
Avolamento
a catena