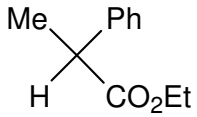
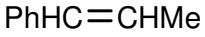
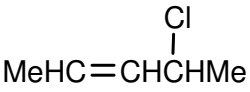
STEREOCHEMISTRY AND REACTION MECHANISMS

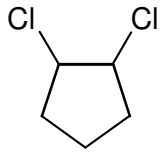
Dr. Hon Wai Lam
h.lam@ed.ac.uk

1. Draw out **all** of the possible stereoisomers of each of the following molecules, making perspective drawings (dotted/solid wedges) where appropriate:

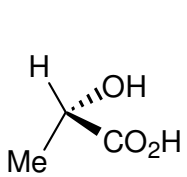
(i) 

(ii) 

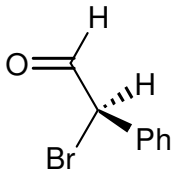
(iii) 

(iv) 

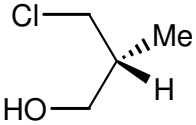
2. For **each** of the compounds **A**-**E** below:
   (i) Assign the absolute configuration (*R* or *S*) of the stereogenic centre(s).
   (ii) In the cases of **D** and **E**, convert the perspective (dotted/solid wedges) formulae into both sawhorse and Newman perspective formulae.



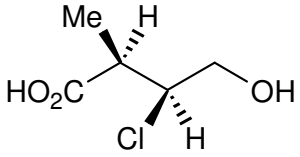
A



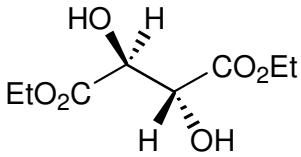
B



C

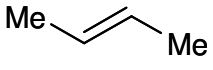


D

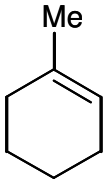


E

3. Draw perspective formulae (dotted/solid wedges) for the products of each of the following addition reactions, and for **each** product, assign the configuration (*R* or *S*) to any stereogenic centres.
   (i) The addition of HOBr (Br_2 in H_2O) to **A**.
   (ii) The addition of Br_2 to **B**.

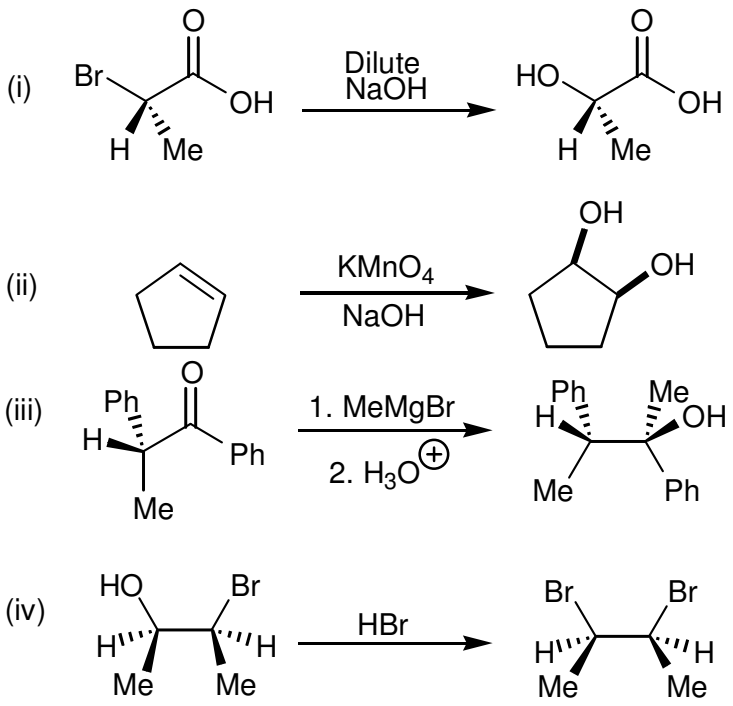


A



B

4. Explain the stereochemical outcome of **each** of the following transformations:



5. Assign structures to the products **A**-**D** of the following reactions and assign the configurations (*R* or *S*; *E* or *Z*) to any stereoisomers produced. In **each** case, suggest a mechanistic scheme which accounts for the observed stereochemistry of the products.

