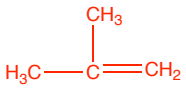
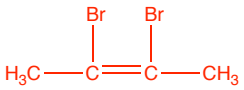
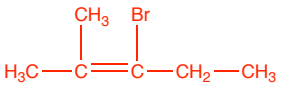
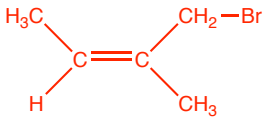
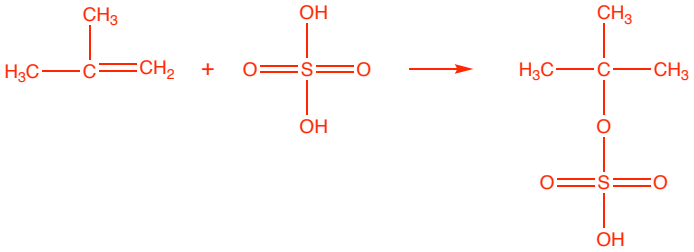
ALKENES (B)

1 a Draw the structure of each of these alkenes and then state which exist as *E-Z* stereoisomers.

name	methylpropene	2,3-dibromobut-2-ene	3-bromo-2-methylpent-2-ene
structure			
E-Z stereoisomers?	**no**	**yes**	**no**

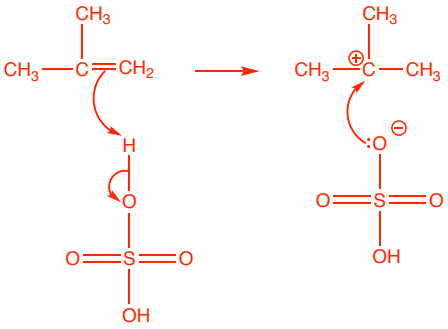
b Draw *Z*-1-bromo-2-methylbut-2-ene. 

2 a Write an equation for the formation of the main product from the reaction of methylpropene with concentrated sulfuric acid



b Name and outline the mechanism for this reaction.

electrophilic addition



c Explain why this is the main product formed.

major product is formed from tertiary carbocation
minor product is formed from primary carbocation
tertiar carbocation is more stable than primary carbocation

3 Outline the mechanism for the formation of ethanol from reaction of ethene with steam in the presence of concentrated phosphoric acid as catalyst.