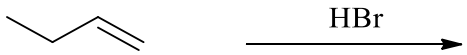
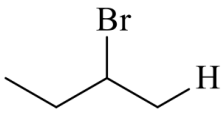
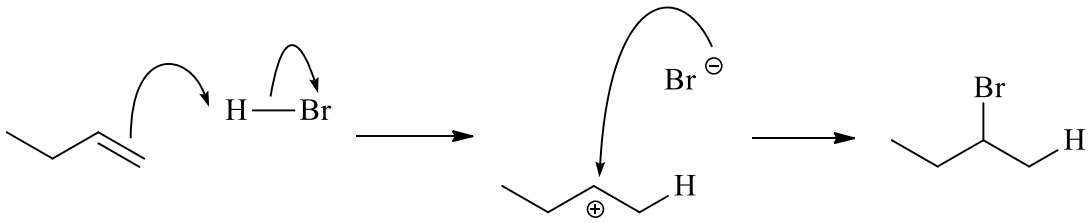
Marks 6

- Give the major product from the following reaction.





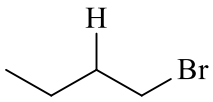
Show the mechanism of the reaction. Make sure you show structural formulas for all relevant intermediate species and the final product, as well as using curly arrows to indicate the movement of electrons (*i.e.* the breaking and formation of bonds).



What is the appropriate stereochemical descriptor for the major product of this reaction? Give a reason for your answer.

Racemic mixture. The carbon where the Br is attached has 4 different groups around it, so is stereogenic. The carbocation from which it forms is planar and so attack by the Br^- is equally likely from either the top or bottom side. This results in equal amounts of both enantiomers being formed.

Give the structure of the minor product of this reaction and explain why very little of it forms.



This product is derived from the primary carbocation intermediate. Secondary carbocations are more stable than primary carbocations, so little of this product forms.