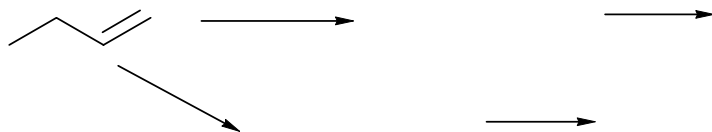
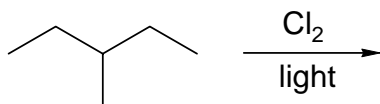


- 1.5** 1. The addition of HBr to an alkene can be accomplished to give two different regioisomers. Using 1-butene as an example give the reagents (over the arrow) for each reaction, the intermediate and the product.



- 2** 2. Draw all possible monochlorination products of the alkane shown in 3-D showing stereochemistry and including all stereoisomers that are formed.



- 2** 3. Show how you would accomplish the following synthesis. Draw all isolated products and reagents over the arrows. More than one step is required. Remember you can work backwards.



- 4.5** 4. Give the major product(s) of the following reactions showing stereochemistry in 3-dimensions where necessary and including all stereoisomers that are formed.

