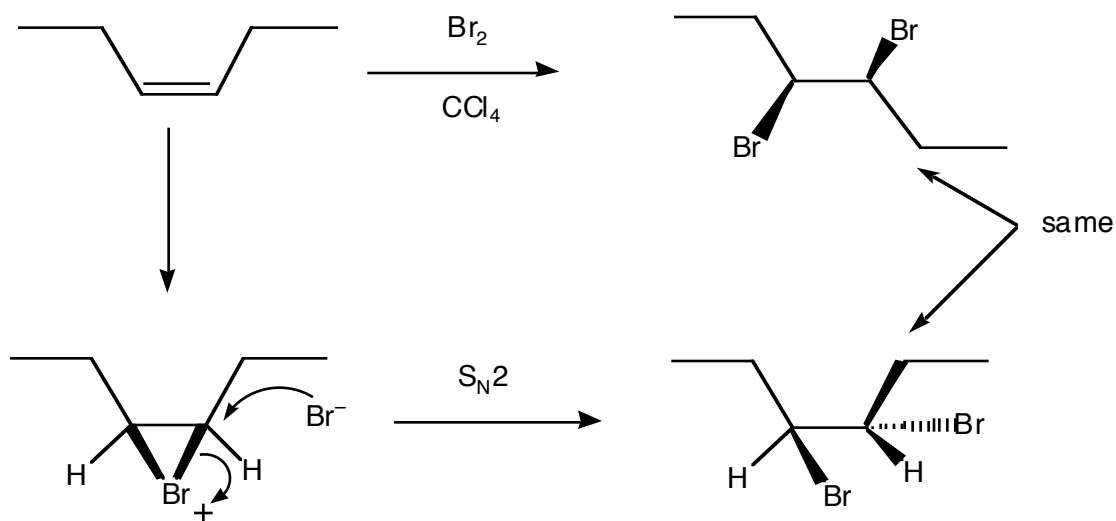


- (a) 1. No addition is trans, as always.



2. The figure shows only one of the two equivalent $\text{S}_{\text{N}}2$ reactions opening the bromonium ion. Both reactions must occur equally, and the unwritten one lead to the enantiomer of the product shown. Thus the real product is a racemic mixture. Be sure you can write out these steps.

- (b) Which 2,3-dimethyl-3-hexene (*E* or *Z*) would you use as starting material for the following reaction?

