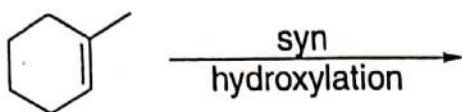


**8.39** If you add OH and OH across the following double bond in a syn addition, what will the products be?



**8.40** If you add Br and Br across the following double bond in an anti addition, what will the products be?

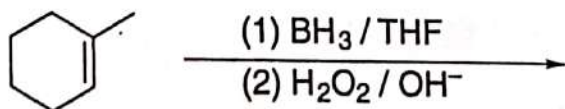


**8.41** If you add Br and Br across the following double bond in an anti addition, you get only one product. If you draw the two products that you would expect, you will find that they are the same compound (a meso compound). Draw this product.



Do not confuse the concepts of regiochemistry and stereochemistry. For instance, in addition reactions, the term "anti-Markovnikov addition" refers to the *regiochemistry* of the addition, but the term "anti" refers to the *stereochemistry* of the addition. Students often confuse these concepts (probably because both terms have the word "anti"). It is possible for an addition reaction to be anti-Markovnikov and a syn addition (hydroboration is an example that you will learn about at some point in time). You must realize that regiochemistry and stereochemistry are two totally different concepts.

**8.42** In the following reaction, we will add H and OH across a double bond. The regiochemistry is anti-Markovnikov, and the stereochemistry is a syn addition. Draw the products you would expect now that you know all of the information.



You must know the stereochemistry and regiochemistry for every reaction, and each of them is contained within the mechanism. In the problems above, you were told what to expect for the stereochemistry and the regiochemistry. When you are