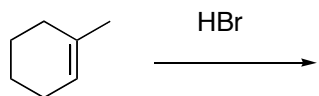


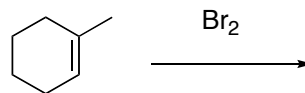
すべての答案は答案用紙に記入せよ。

1. What is the major organic product obtained from the following reactions? (必要であれば立体化学を明示すること)

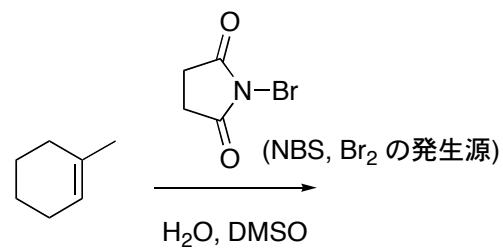
(1)



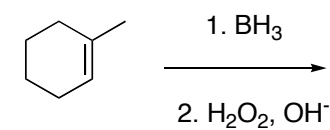
(2)



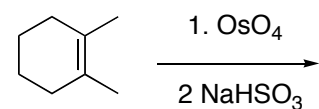
(3)



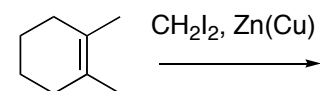
(4)



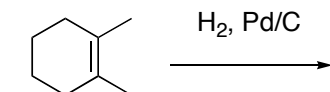
(5)



(6)

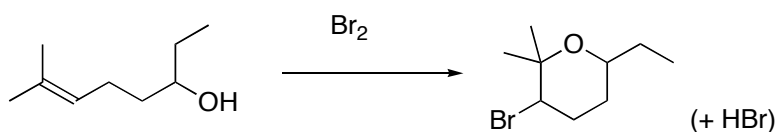


(7)



2. Use curved arrows to explain the mechanism of the reactions shown in 1. (1), (2), and (3).

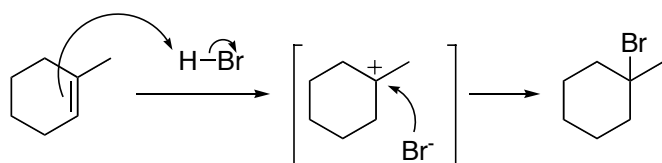
3. 以下の反応がどのようにして進行するのか、説明せよ (やや高難度)。



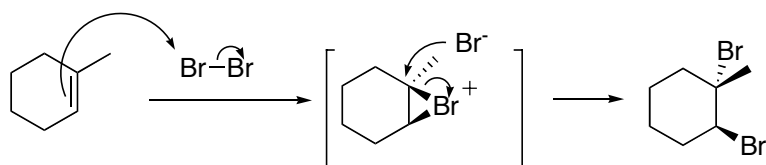
以上

1.

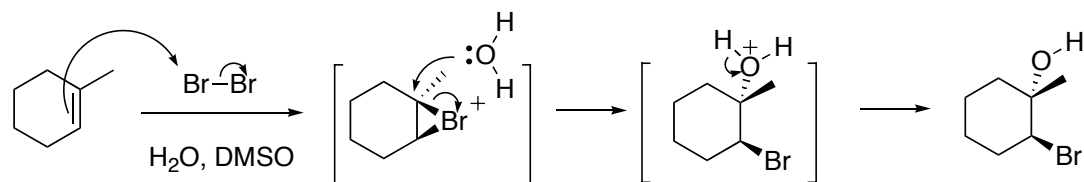
(1)



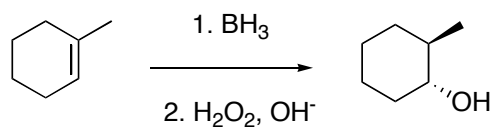
(2)



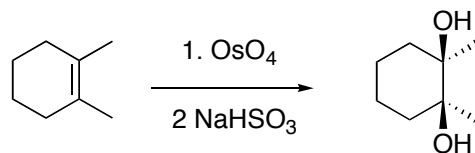
(3)



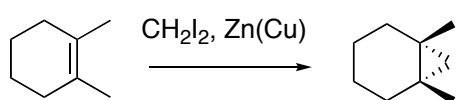
(4)



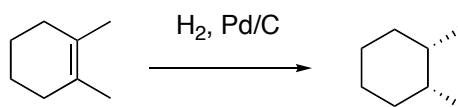
(5)



(6)



(7)



2. 1. に書いたとおりです。

3. 分子内でブロモニウムイオンに対する付加反応が進行します。

