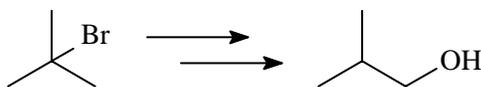
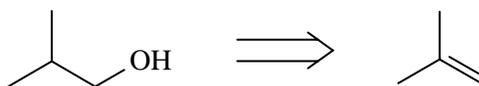


Retrosynthetic Analysis

We will **propose a synthesis** of 2-methyl-1-propanol from 2-bromo-2-methylpropane, using reactions from Ch.6.

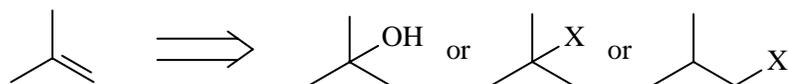


1. When proposing a synthesis, we start by examining the starting material and target compound and discovering what they have in common.
 - a) Our starting material and product have the same carbon skeleton (2-methylpropane), which is fortunate since we don't know how to add or subtract carbons yet!
 - b) We then *work backwards* from the target compound—this is called “retrosynthetic analysis”—because it narrows the field of possible reactions. If we were to start by going forward from the starting material, we would have to consider every possible reaction! By going backwards, we can eliminate up to 90% of the possible reactions of our starting material.
2. We must then ask ourselves, what reactions do we know that will make the target compound, and from what? Associated with this question is another: can this precursor be made from our starting material?
 - a) We don't know how to make alcohols except from alkenes; in this case, we have an anti-Markovnikov alcohol that can be made from 2-methylpropene:



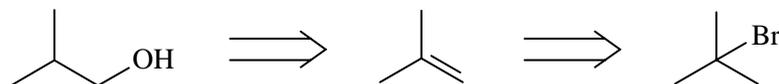
that must be made via hydroboration/oxidation because that's the only anti-Markovnikov reaction we know (Section 7.5).

- b) However, we don't know any reaction that will convert our starting material, 2-methylpropane, into 2-methylpropene. We only know one type of reaction that will give us 2-methylpropene: elimination from an alkyl halide or an alcohol (Section 7.1).



But 2-methyl-2-bromopropane is our starting material!

- c) So we have our retrosynthetic chain:



3. It only remains to fill in the appropriate reagents (proceeding, this time, in the “forward” order) and we have our proposed synthesis:

