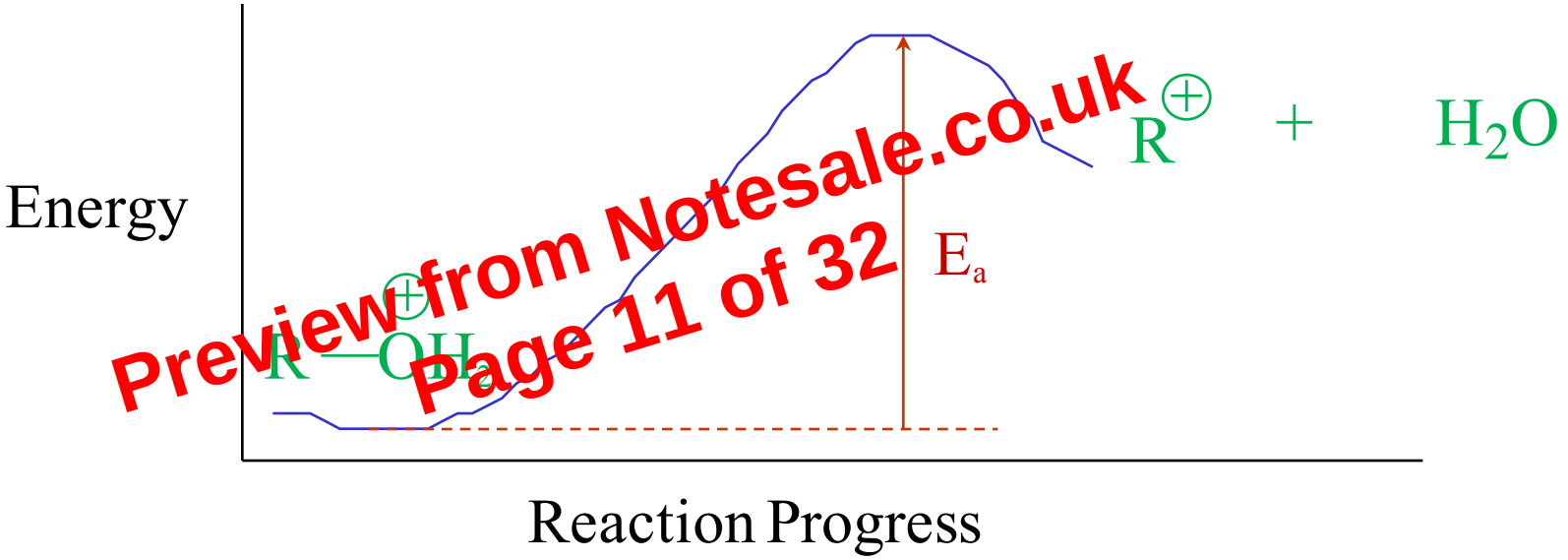
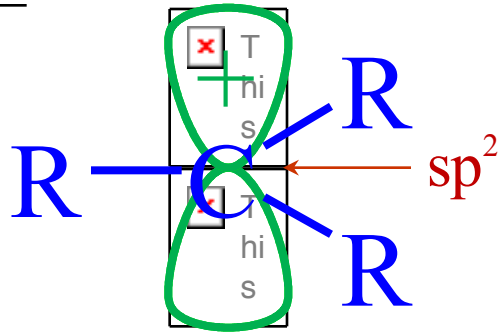
Transition state resembles carbocation.



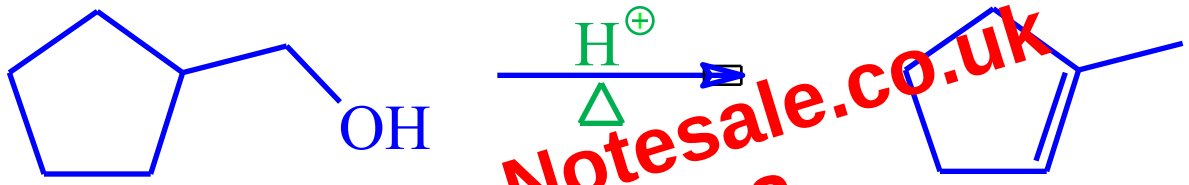
Carbocations: Reactive intermediates of carbon which contain 6 electrons and a positive charge.

Relative Stabilities: $3^{o} > 2^{o} > 1^{o}$

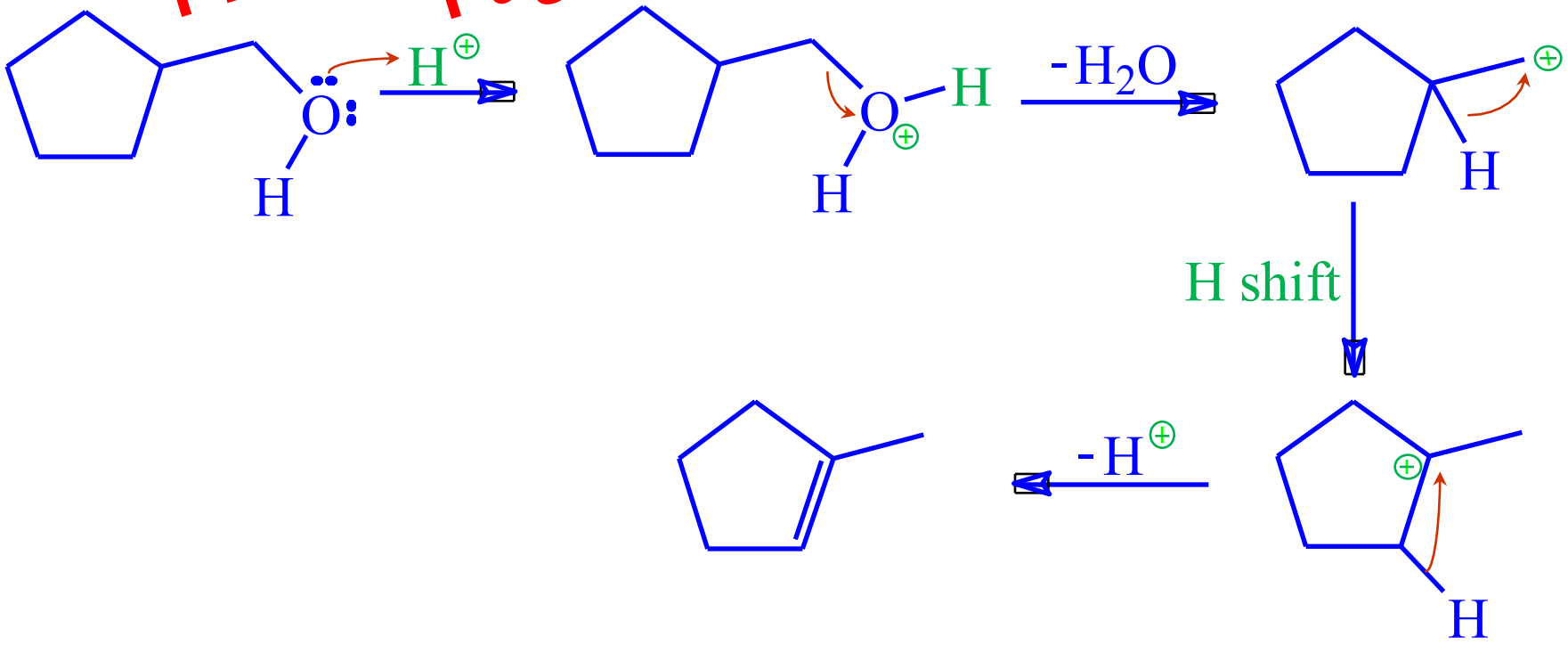
Structure



Rearrangement of Carbocations

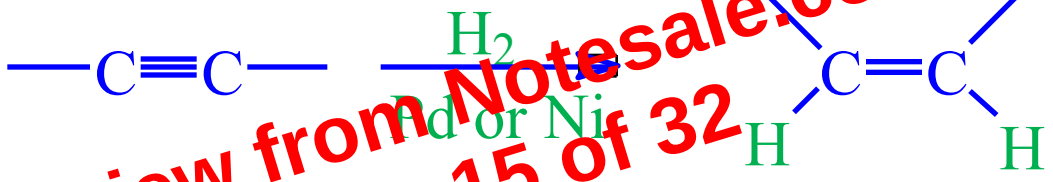


Mechanism

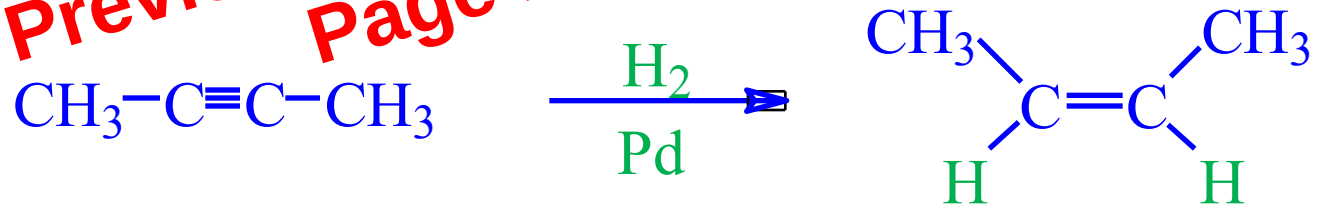


4) Reduction of Alkynes

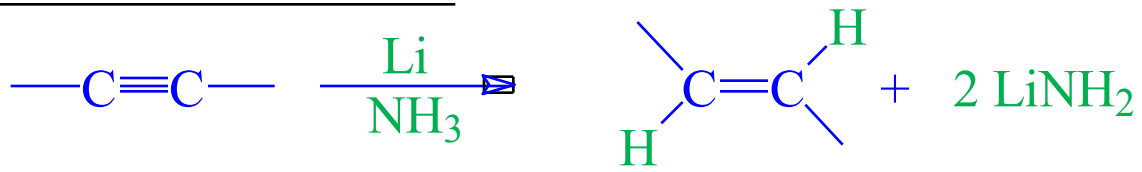
A) Catalytic Hydrogenation



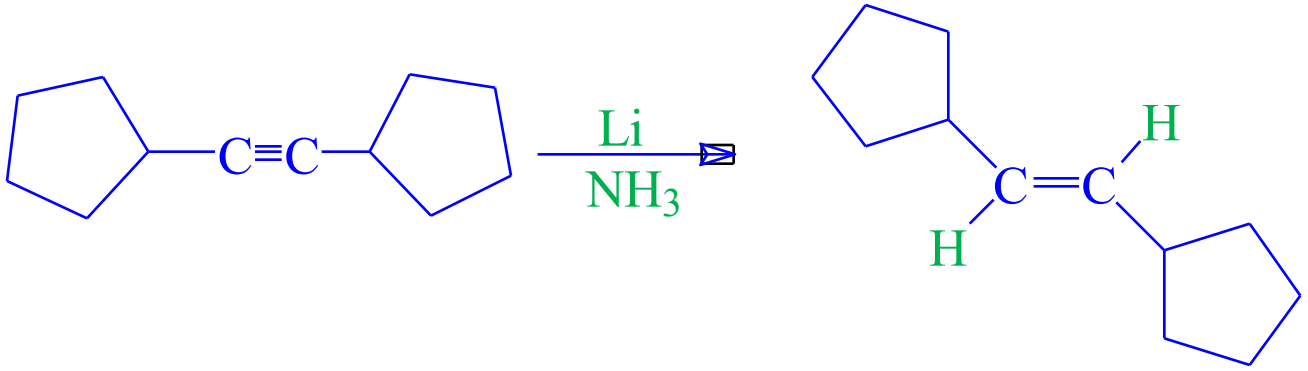
Cis



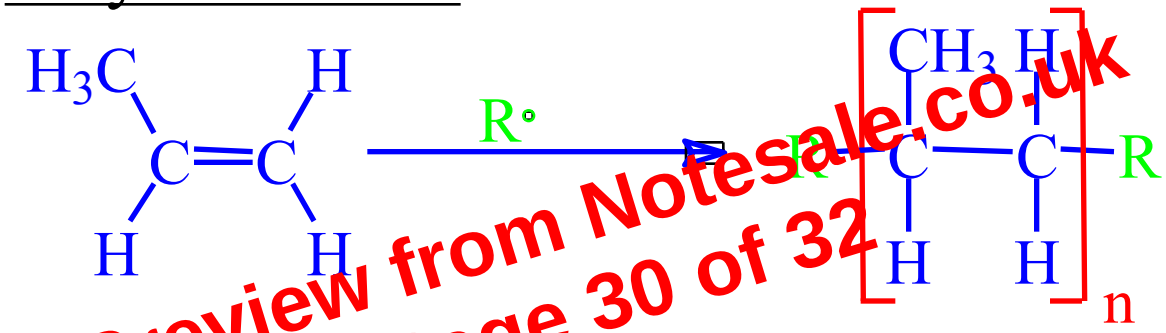
B) Lithium and Ammonia



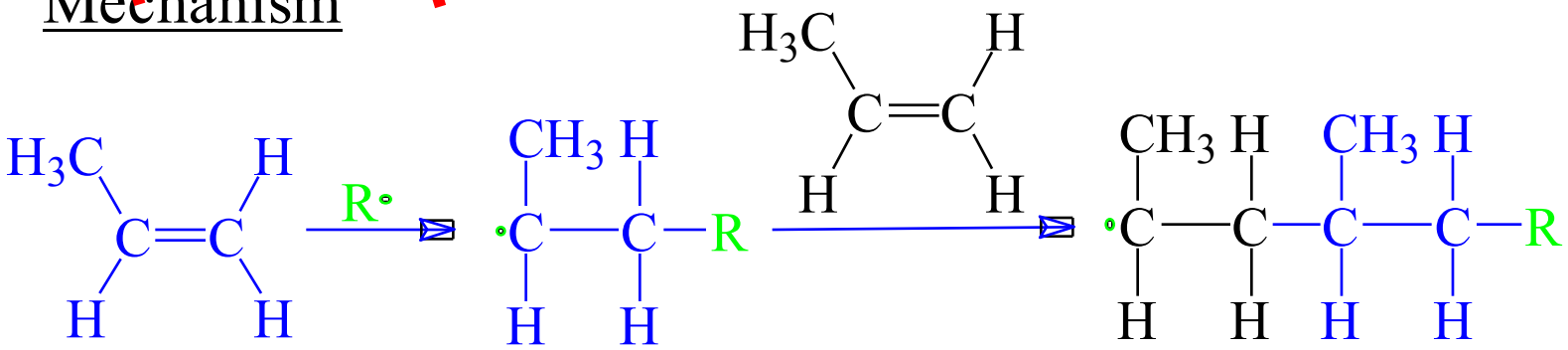
Trans

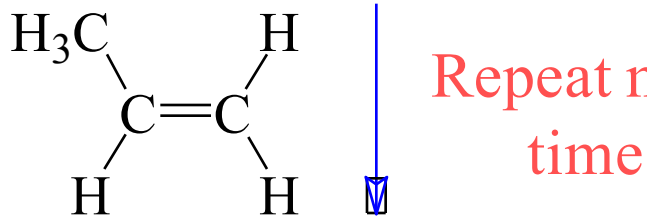


O) Polymerization

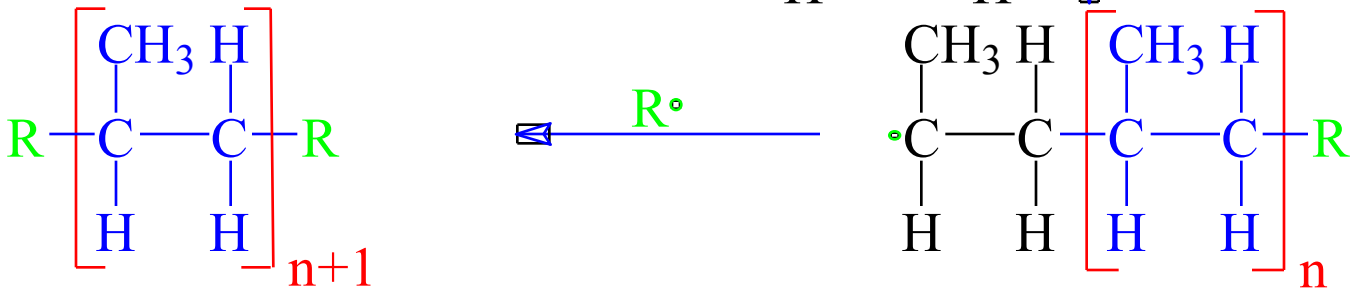


Mechanism





Repeat many times



Homework #7

1. What set of reagents always gives a cis alkene when reacting it with an alkyne? A trans alkene from an alkyne?
2. What set of reagents adds a Br to the more substituted carbon of the alkene? A Br to the less substituted carbon?
3. What set of reagents adds an OH to the more substituted carbon of the alkene? An OH to the less substituted carbon?
4. How many reactions of alkenes form a three-membered ring as the product? Name them.
5. What is the difference between a singlet carbene and a triplet carbene?
6. When are rearrangements possible?