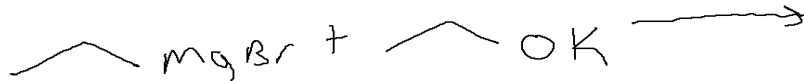
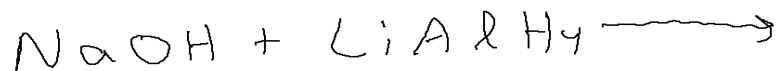
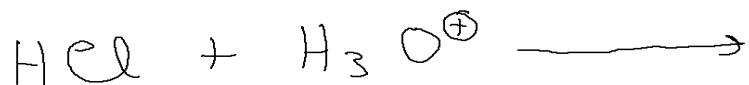
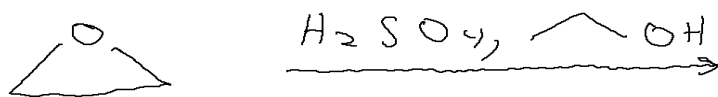
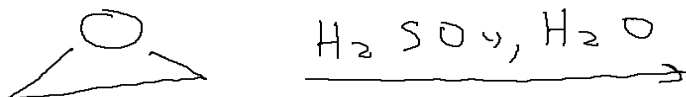
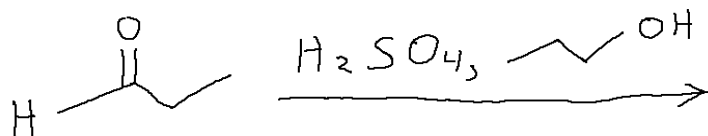
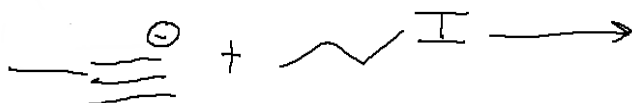
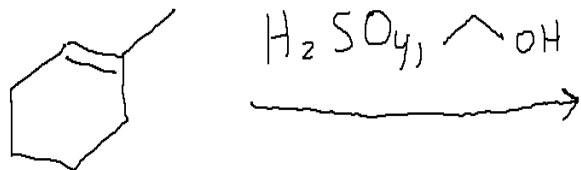
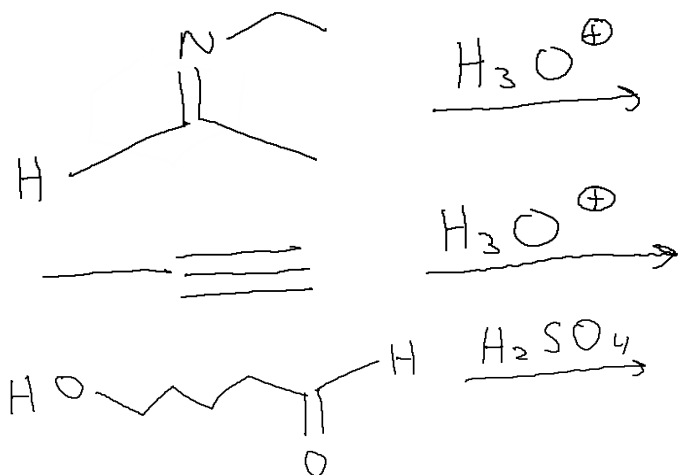


How to draw reasonable electron-pushing arrows  
Homework problems for video (6)  
Answers in video (7)

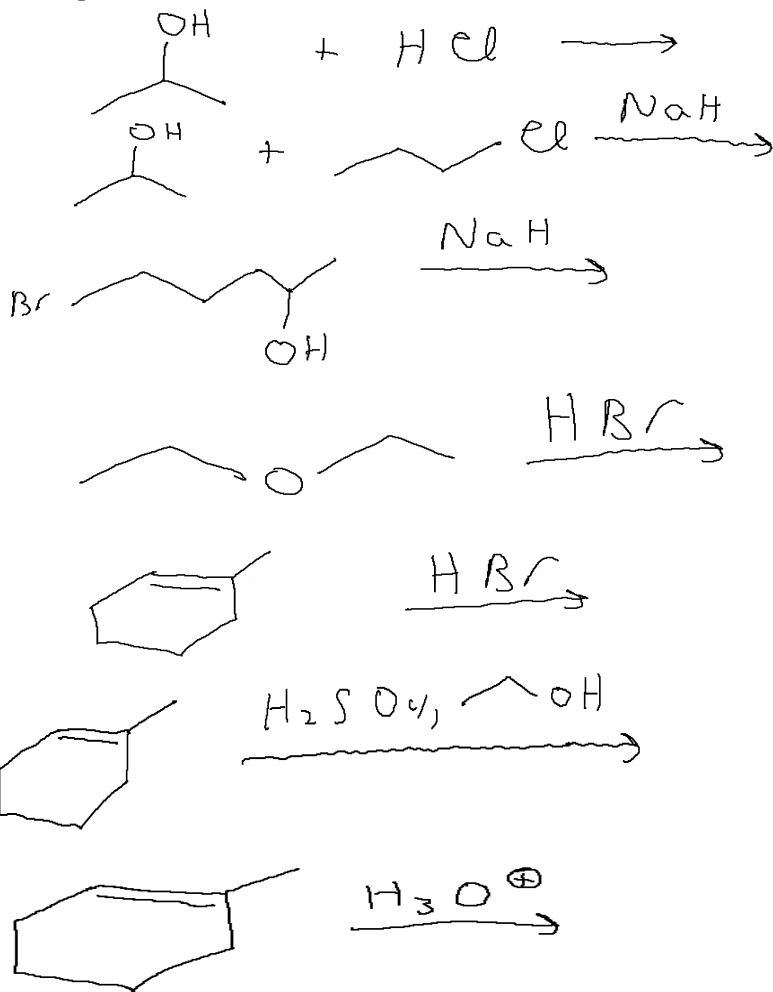
1. For each set of starting materials: Draw a reasonable set of electron-pushing arrows. Then, draw the product based on those arrows. Then, draw reasonable electron-pushing arrows for the product from the first step. Keep repeating this process until you arrive at acceptable final products, like we did in the video. If no reaction seems reasonable for the starting materials, write "no reaction."



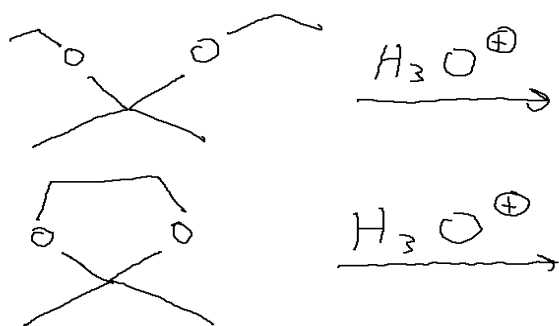


2. What role(s) do Cl<sup>-</sup>, Br<sup>-</sup>, and I<sup>-</sup> generally play in reactions?
3. What role(s) do the carbonyl O generally play in reactions?
4. What role(s) does NaH generally play in reactions?
5. What role(s) does O<sup>-</sup> generally play in reactions?
6. What role(s) does NaBH<sub>4</sub> generally play in reactions?
7. What role(s) do LiAlH<sub>4</sub>, Grignard reagents, and alkyl lithiums generally play in reactions?

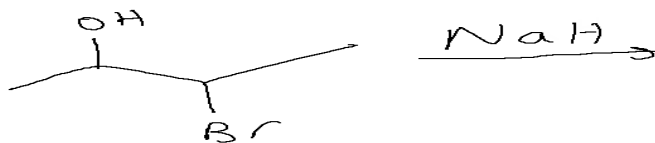
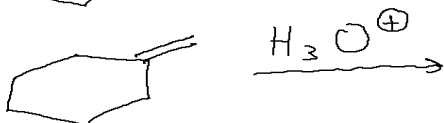
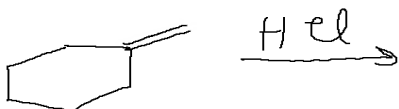
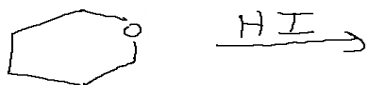
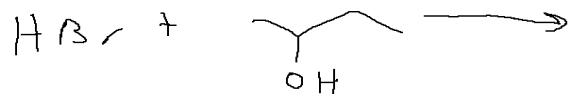
8. For each set of starting materials: Draw a reasonable set of electron-pushing arrows. Then, draw the product based on those arrows. Then, draw reasonable electron-pushing arrows for the product from the first step. Keep repeating this process until you arrive at acceptable final products, like we did in the video. If no reaction seems reasonable for the starting materials, write "no reaction."  
 For the first reaction, the leaving group just "falls off" without being pushed by a nucleophile.



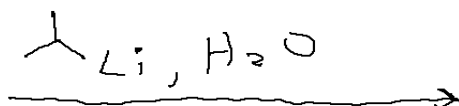
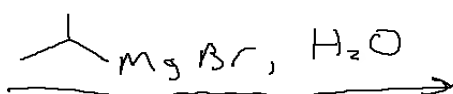
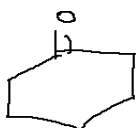
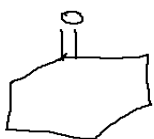
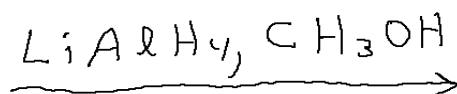
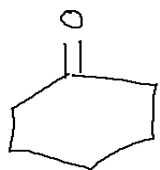
For the next two reactions, the leaving group just "falls off" without being pushed by a nucleophile.



For the next reaction, the leaving group just "falls off" without being pushed by a nucleophile.



9. For each set of starting materials: Draw a reasonable set of electron-pushing arrows. Then, draw the product based on those arrows. Then, draw reasonable electron-pushing arrows for the product from the first step. Keep repeating this process until you arrive at acceptable final products, like we did in the videos. If no reaction seems reasonable for the starting materials, write "no reaction."



10. Some of the reactions in problem 9 are "poorly designed," as we discussed in the tutoring, for achieving what the chemist probably intended. Rewrite these reactions with better starting materials for achieving the products that are probably intended from such reactions; then draw the electron-pushing arrows and products for each step of the mechanism.