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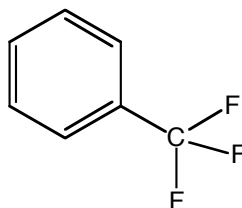
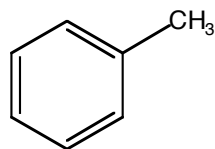
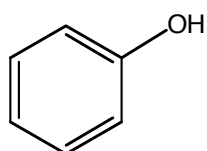
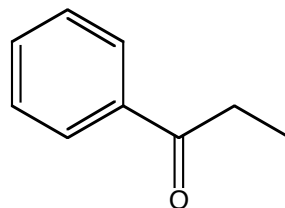
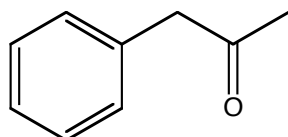
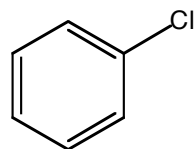
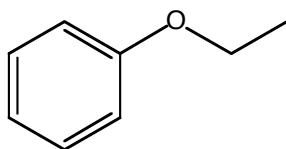
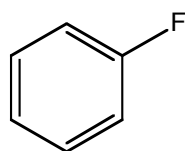
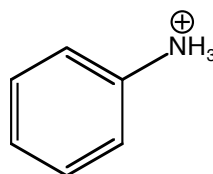
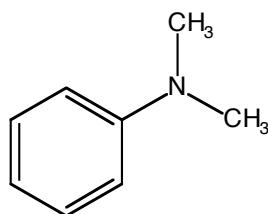
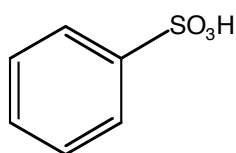
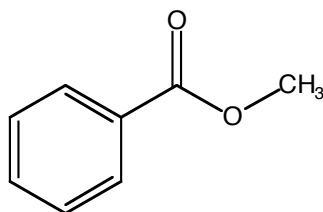
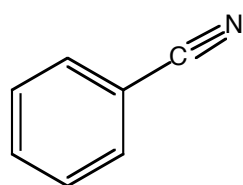
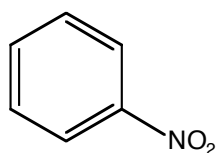
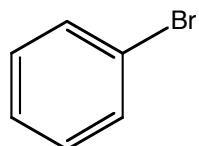
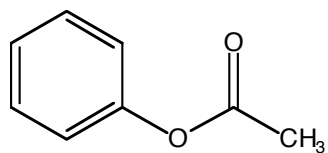
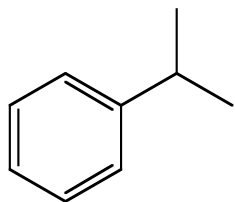
SIGNATURE: \_\_\_\_\_

**Chemistry 310N  
Dr. Brent Iverson  
Extra Aromatic  
Homework  
April 25, 2008**

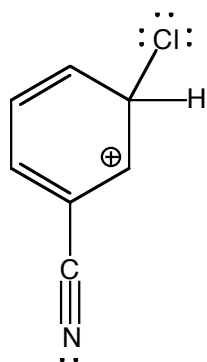
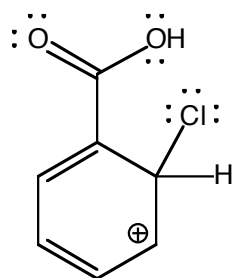
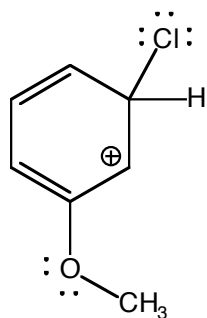
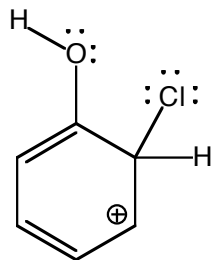
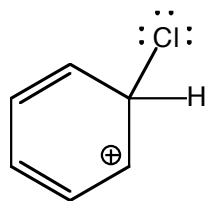
**Please print the  
first three letters  
of your last name  
in the three boxes**

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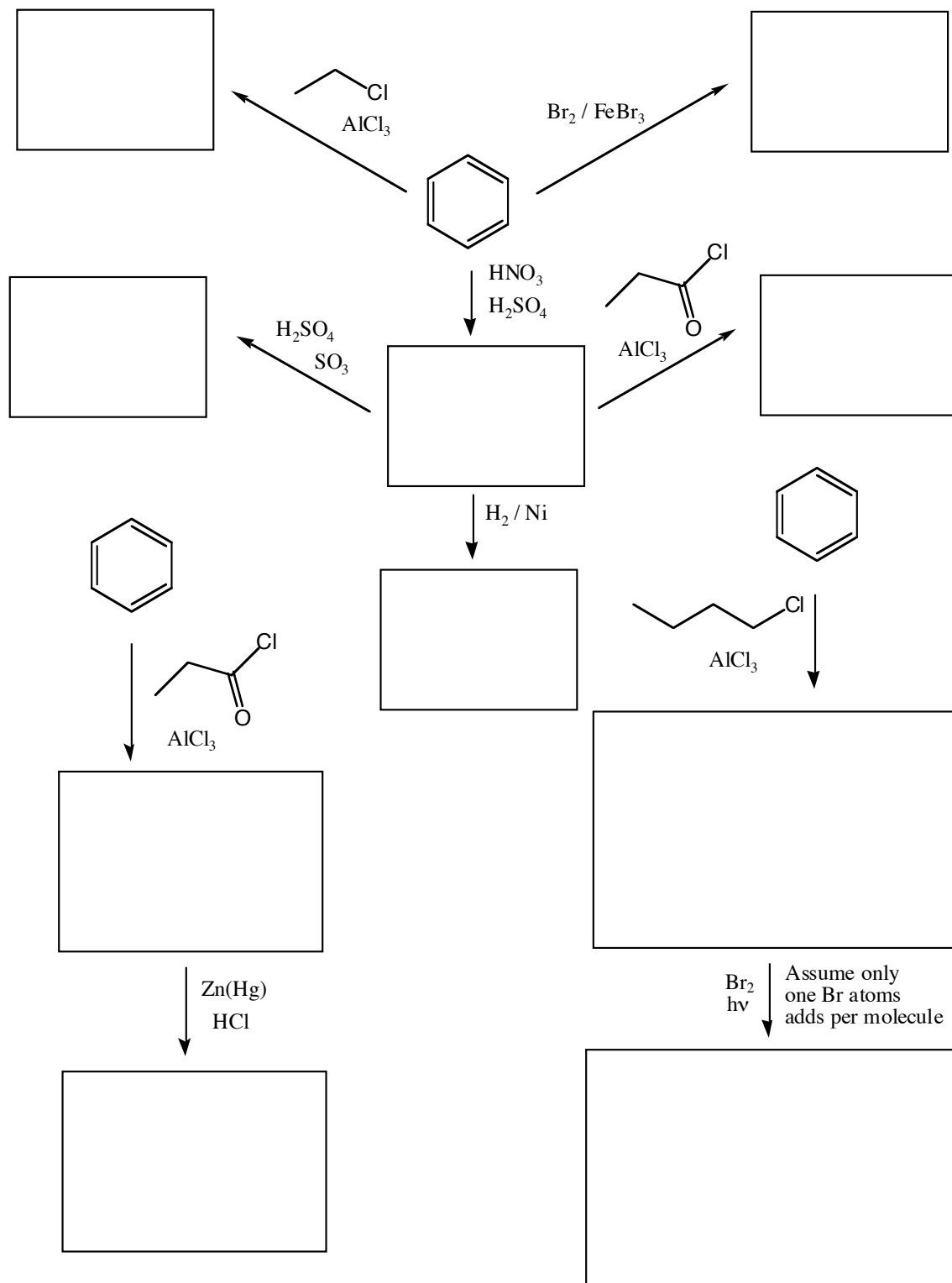
1. For each of the following, circle the derivatives that have a “bad” group on them, draw two boxes around the derivatives that have a “good” group on them, and draw nothing around the derivatives that have an “ugly” group on them.



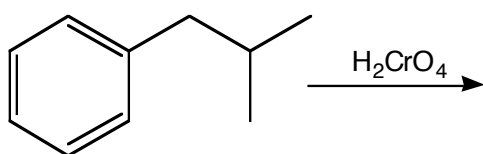
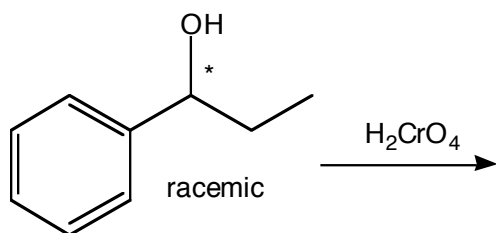
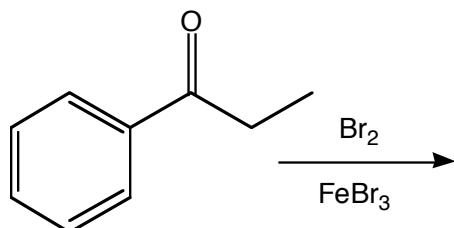
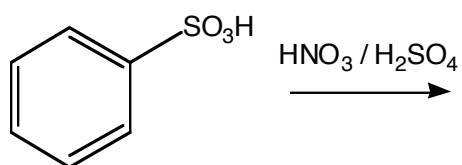
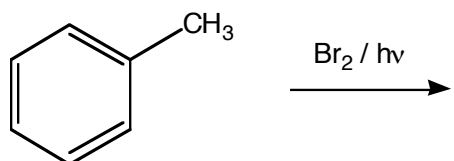
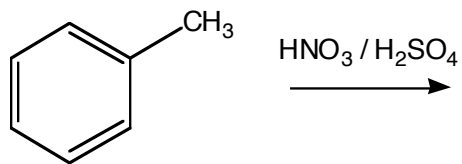
2. For each of the following arenium ion intermediates, draw all the significant resonance contributing structures.



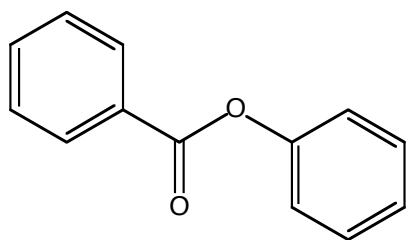
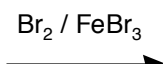
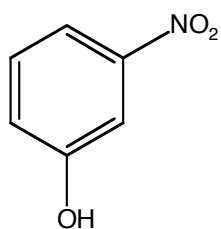
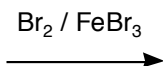
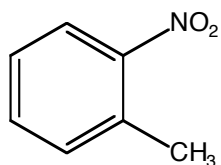
3. For each of the following, fill the molecule in the box that is the product or products of the given reaction. When a racemic mixture of enantiomers are formed, draw both using wedges and dashes and write racemic.



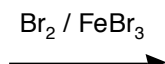
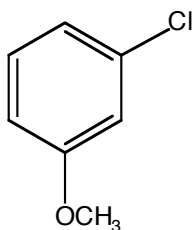
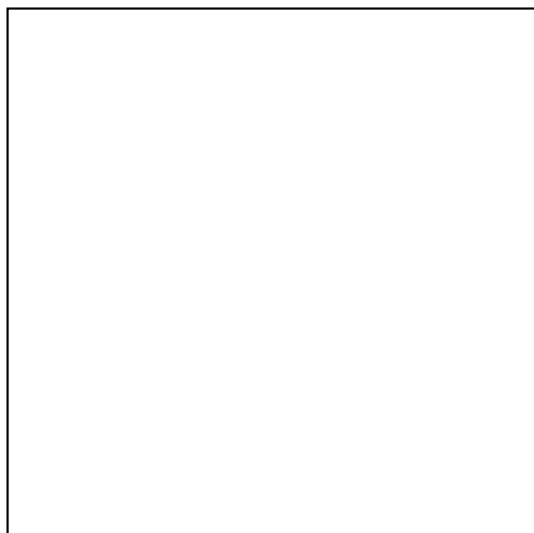
4. For each of the following, fill the molecule in the box that is the product or products of the given reaction. When a racemic mixture of enantiomers are formed, draw both using wedges and dashes and write racemic.



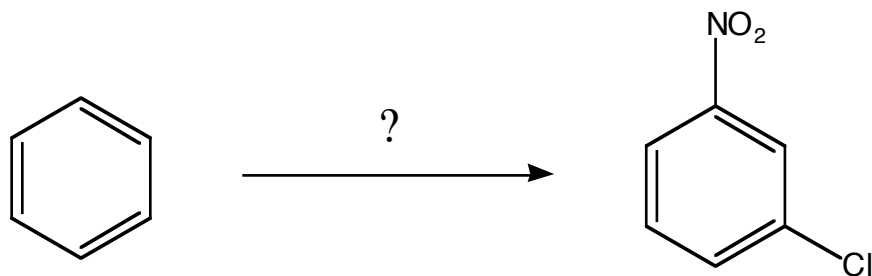
5. (cont.) Fill in the boxes with the product or products of each reaction. You must draw both ortho and para products if that is appropriate. These are a little bit harder than on the previous page.



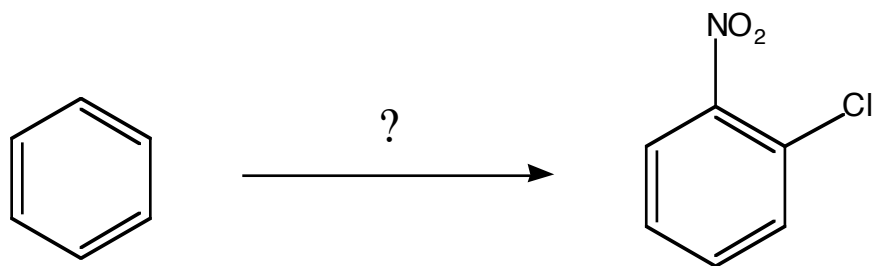
Assume  
only one  
Br atom  
adds



6. Show reagents and intermediates synthesized along the way that allow you to produce the product from the given starting material. Assume you can isolate either the ortho or para product in pure form, even though both are usually produced together.



7. Show reagents and intermediates synthesized along the way that allow you to produce the product from the given starting material. Assume you can isolate either the ortho or para product in pure form, even though both are usually produced together.





8. Show reagents and intermediates synthesized along the way that allow you to produce the product from the given starting material. Assume you can isolate either the ortho or para product in pure form, even though both are usually produced together.

