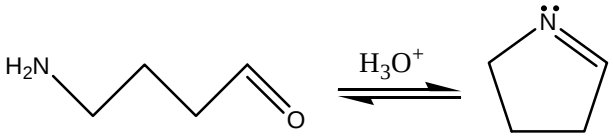
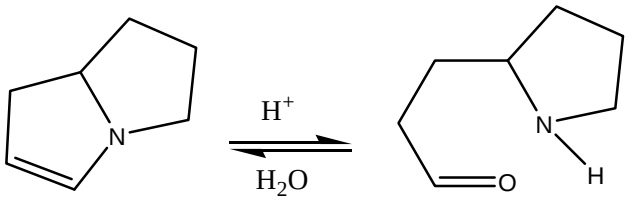
Chapter 19 Worksheet

1. Propose a mechanism to account for the following reactions. Be sure to show each step clearly using curved arrows to show the movement of electrons.

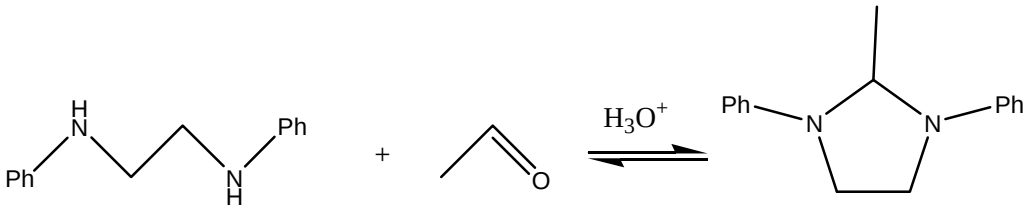
a.



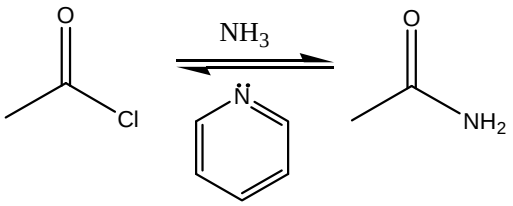
b.



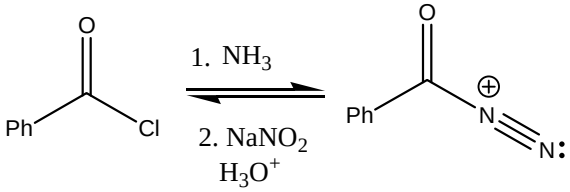
c.



d.

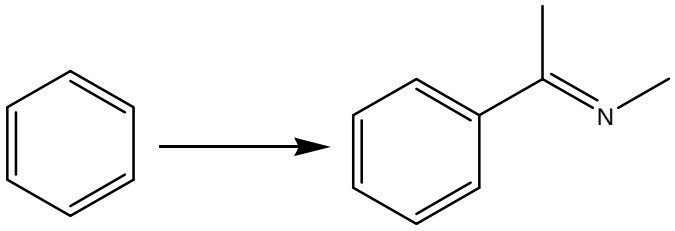


e.

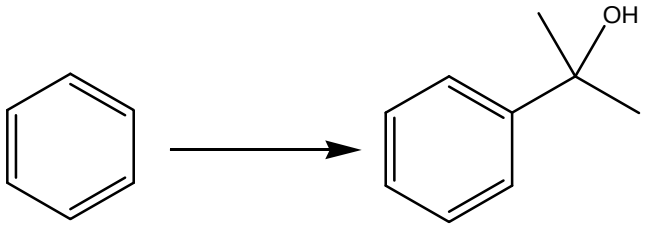


2. Propose a series of reactions that will lead to the product in good yields. You can use any other reagents as to complete the synthesis.

a.



b.



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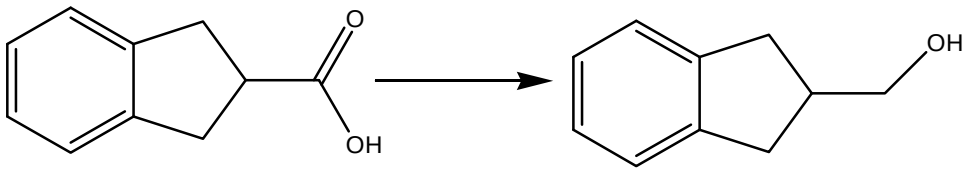
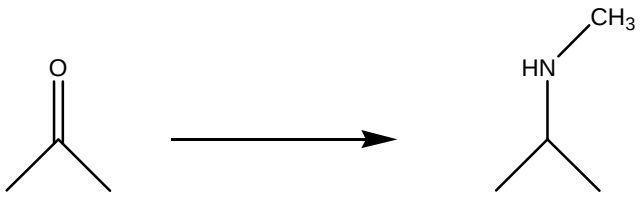
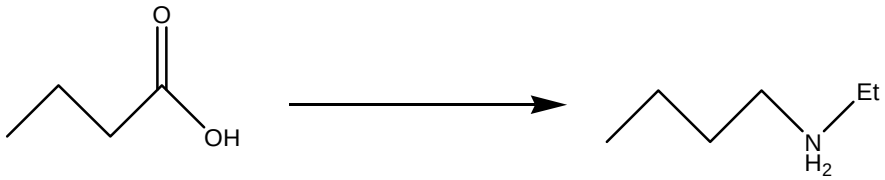


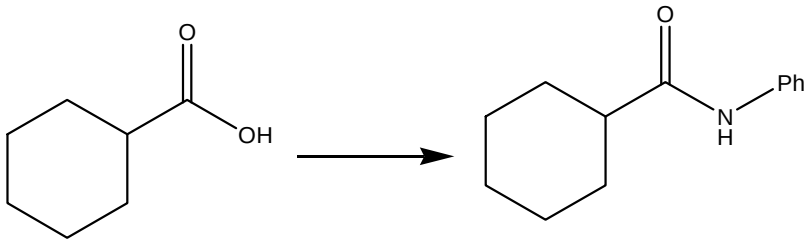
d.



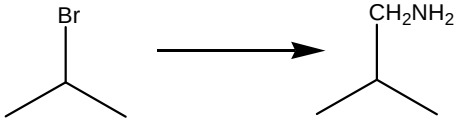
e.



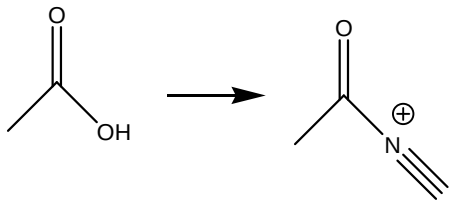
f.



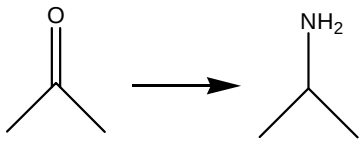
g.



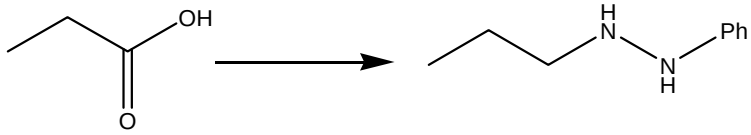
h.



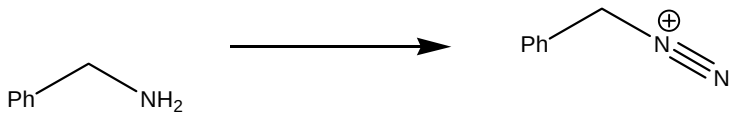
i.



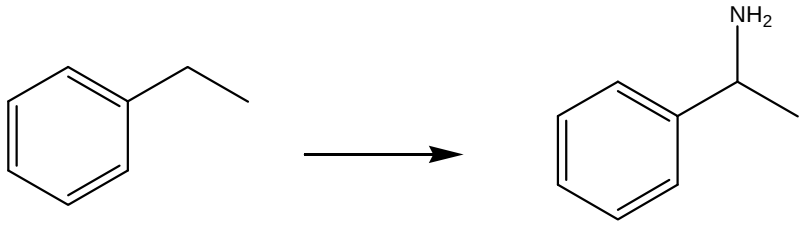
j.



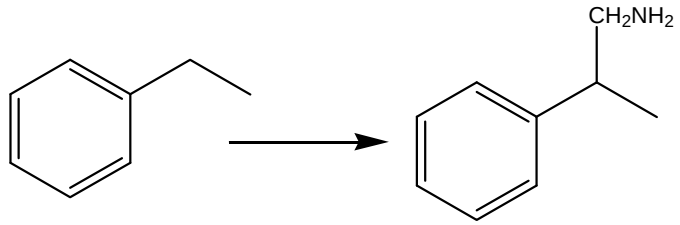
k.



l.

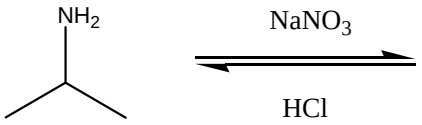


m.

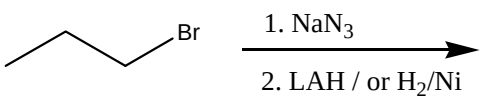


3. Predict the products of the following reactions.

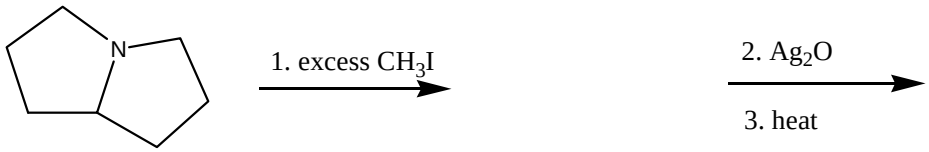
a.



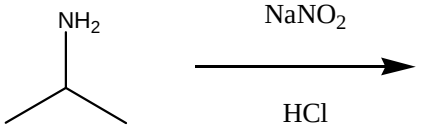
b.



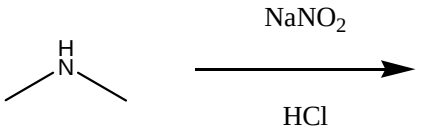
c.



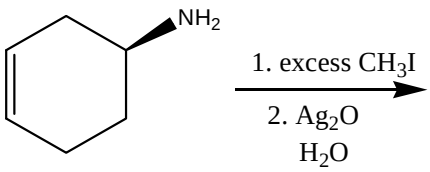
d.



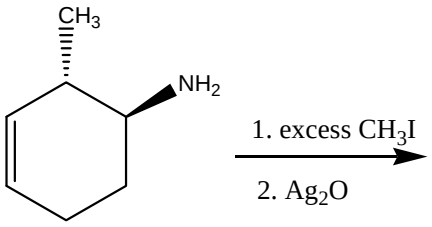
e.



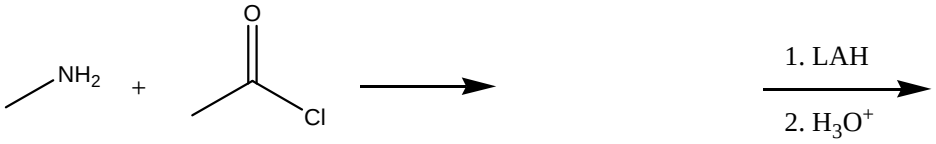
f.



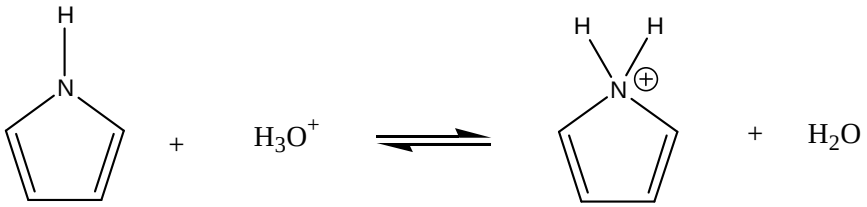
g.



h.



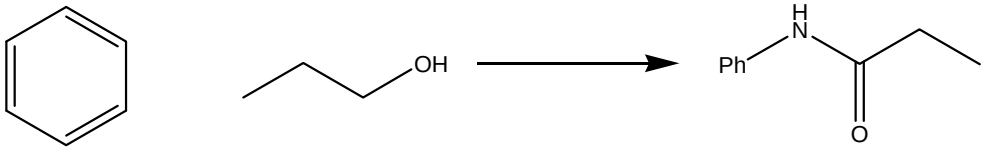
4. Why does pyrrole have a low basicity?



pKa ~ 10.9

5. Propose a series of reactions that produce the product in high yields.

a.



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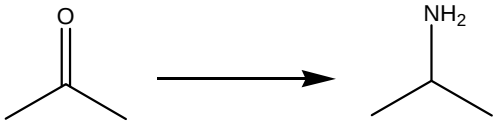

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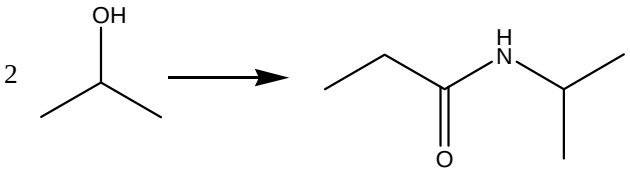

d.