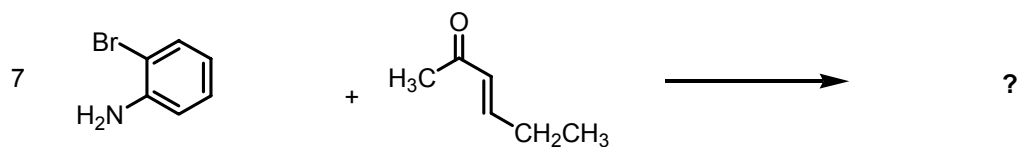
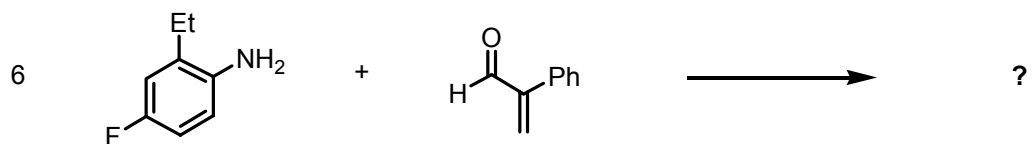
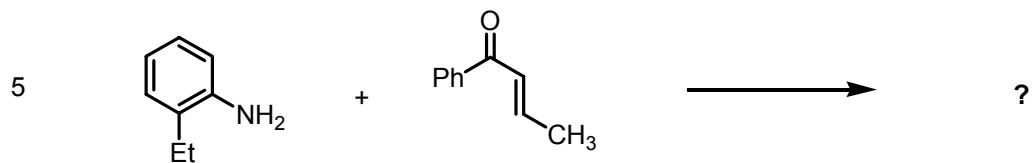
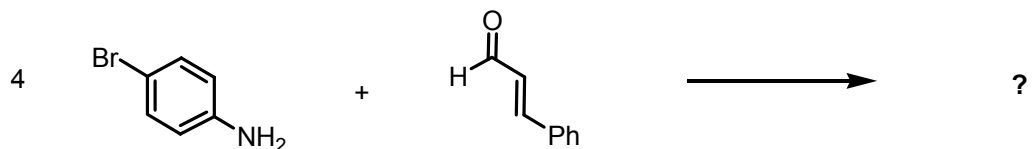
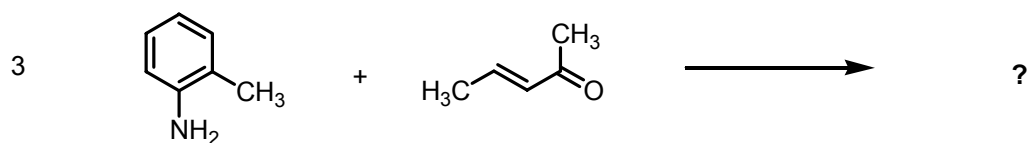
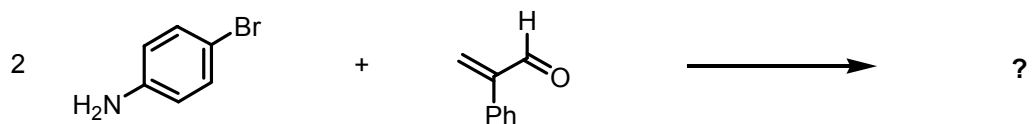
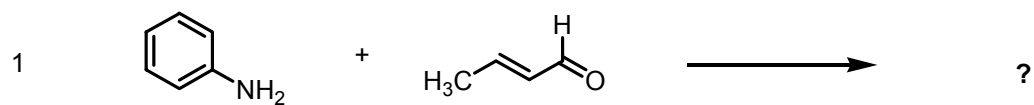
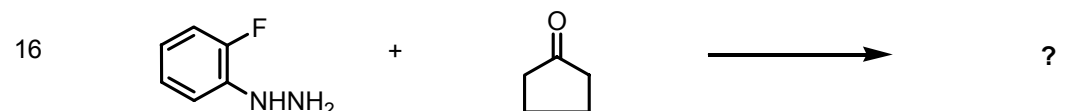
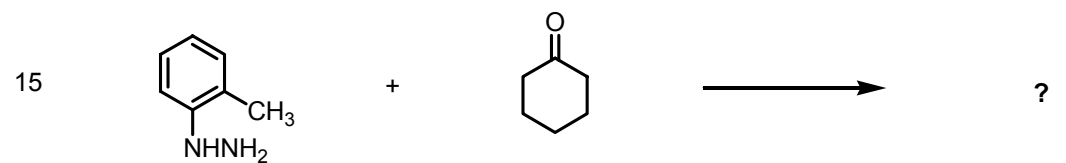
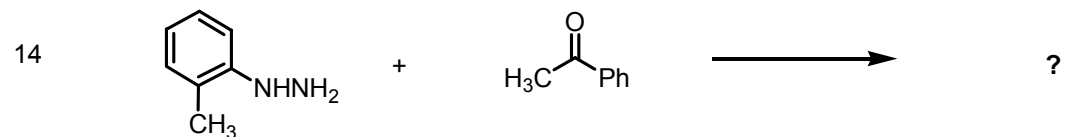
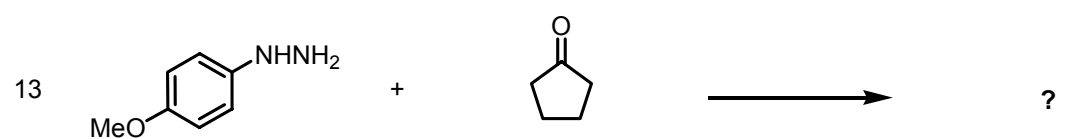
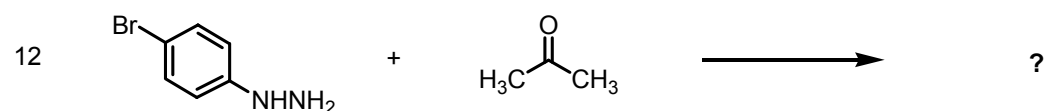
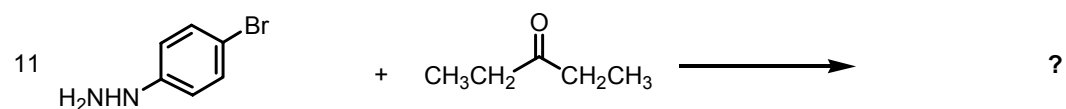
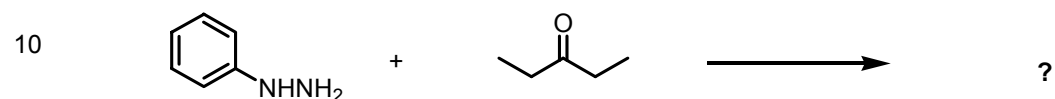
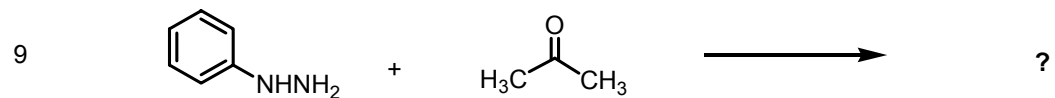
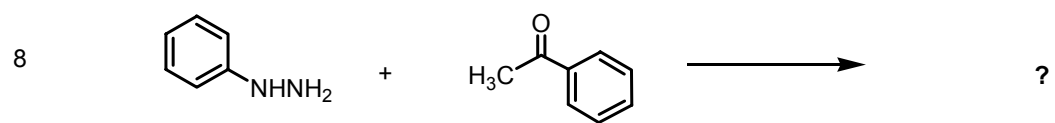


HETEROCYCLE PROBLEM SHEET

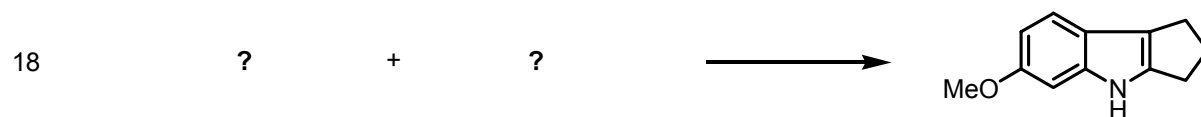
Formulate the products from the following reactions, all of which are the Doebner-von Miller variation of the Skraup quinoline synthesis.



Formulate the products from the following reactions, all of which are Fischer indole syntheses.



From what starting materials could you make these two indoles? Will there be any problems with formation of isomeric products? If so what is (are) their structure(s)?



Given the information provided formulate the unknown products from the following reactions.

