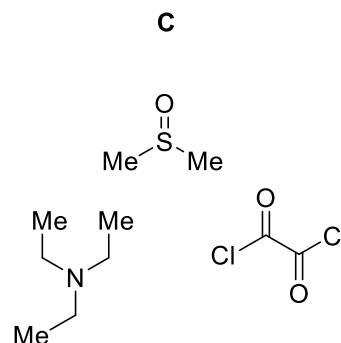
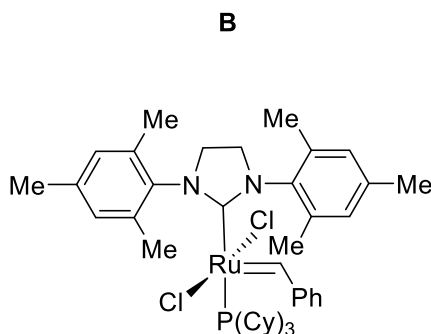
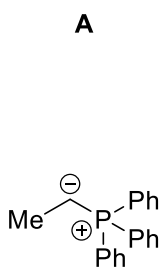


Organic Chemistry Cumulative Exam

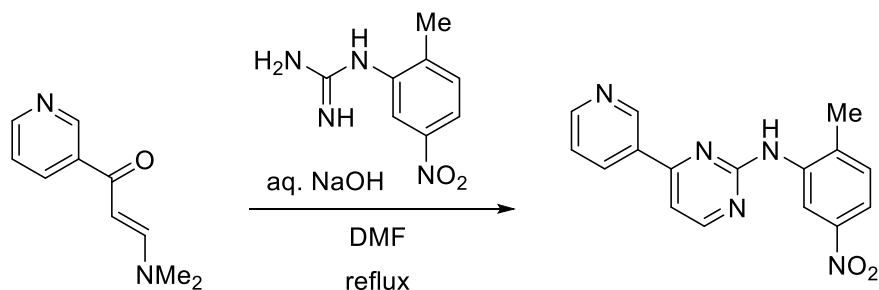
5 October 2017

Total: **100 points**

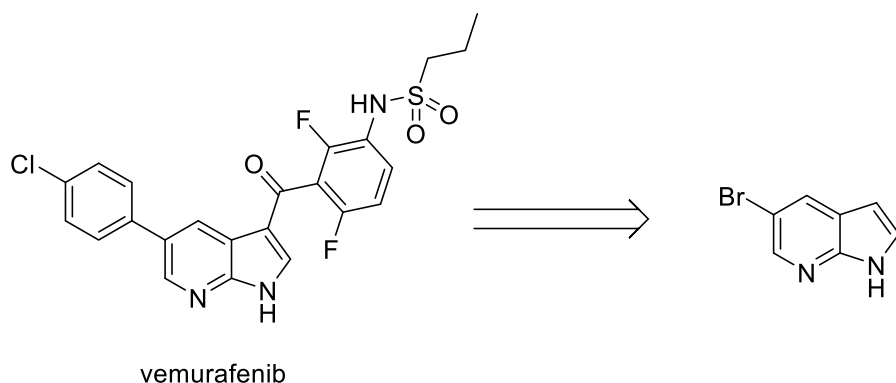
1) The following reagents are very useful for organic synthesis. **For each reagent or set of reagents, give the common name** (e.g. Wilkinson's catalyst, Luche reduction, IBX, etc.) **and an example of the reagents' use.** Select a substrate of your choice to best illustrate each transformation. (**20 points**)



2) The following reaction is used in the process route to access imatinib, a drug used to treat chronic myeloid leukemia in patients with a BCR-ABL mutation. **Provide a reasonable mechanism for the formation of the observed product.** (**15 points**)



3) **Propose an efficient synthesis of vemurafenib from 5-Bromo-7-azaindole.** Each incorporated unit must include 7 carbon atoms or less. (**20 points**)



4) In the following synthetic route, provide the missing reagents, intermediates, and mechanisms as indicated. (45 points)

