

CHEM 302 Exam 2

Dr. Hanna

July 7, 2008

Honor Pledge:

In Part V of the Winthrop University Student Conduct Code, it is stated that "A fundamental tenet of all institutions of higher learning is academic honesty. ... Misrepresentation of someone else's work as one's own is a most serious offense in any academic setting. ... Academic misconduct includes but is not limited to providing or receiving assistance in a manner not authorized by the professor in the creation of work to be submitted for academic evaluation including papers, projects, and examinations ..."

By my signature below, I pledge that I did not commit academic misconduct (cheat) on this examination.

Key

Printed Name

Signature

Part 1 _____/10

Part 2 _____/10

Part 3 _____/20

Part 4 _____/20

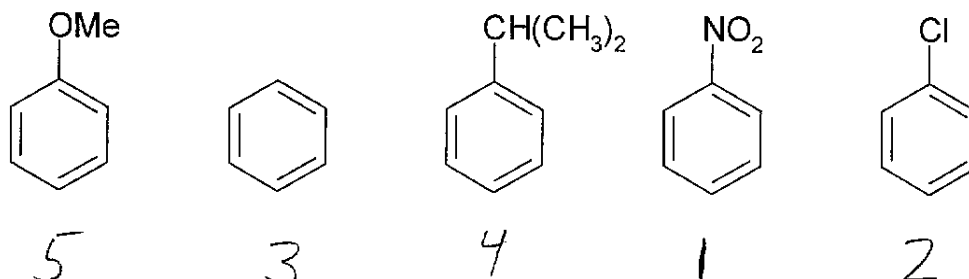
Part 5 _____/20

Part 6 _____/20

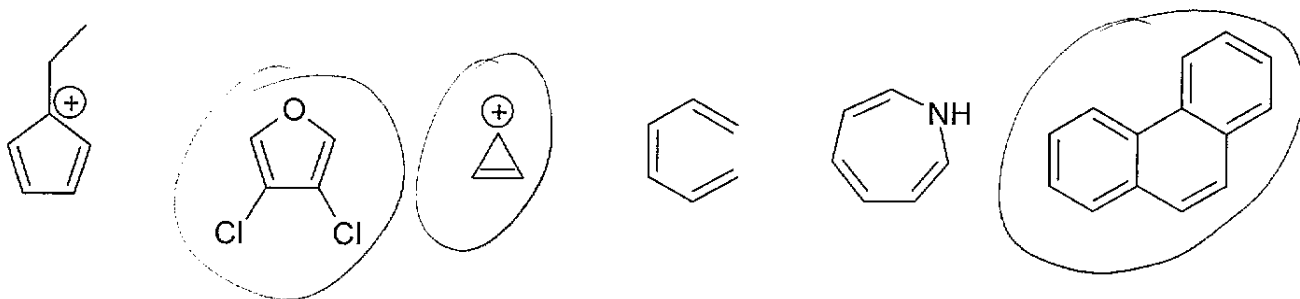
Total _____/100

1. Concepts (10 pts)

(a) Number the following compounds in order of increasing reaction rate toward EAS (1 = slowest, 5 = fastest):

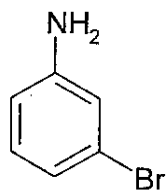


(b) Of the following compounds, which are aromatic? (Circle the aromatic compounds)

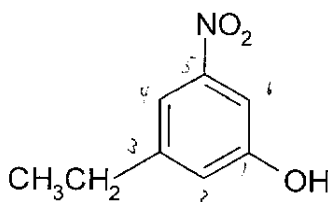


2. Nomenclature (10 pts)

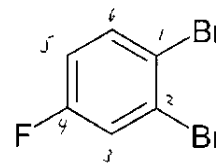
Give systematic names for the following compounds:



m-BROMOANILINE



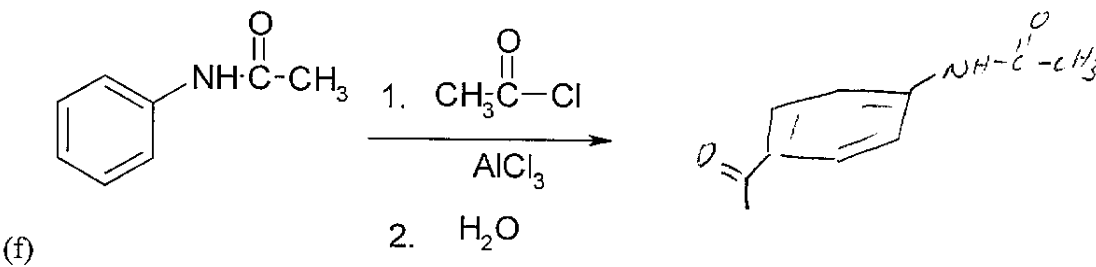
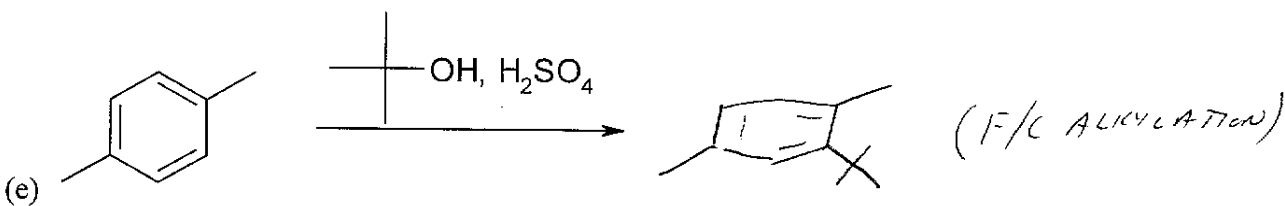
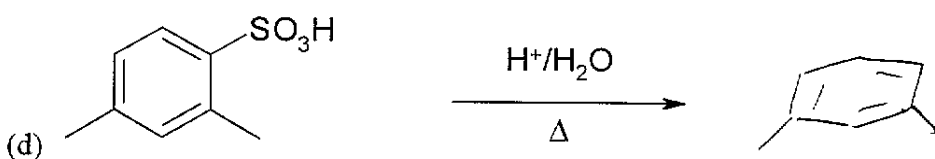
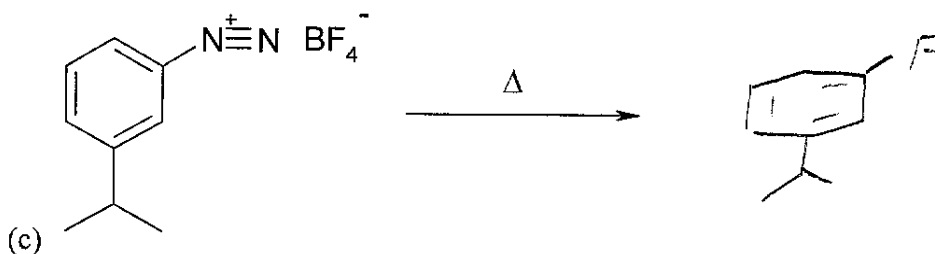
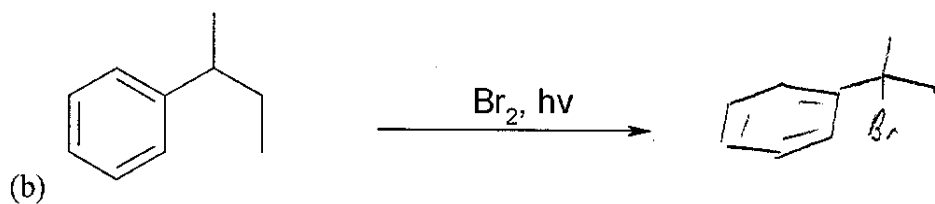
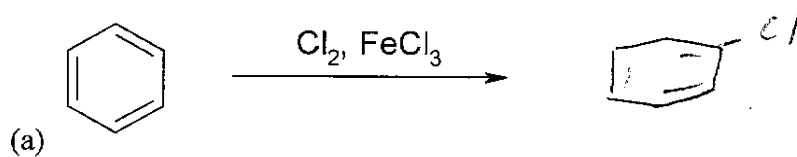
3-ETHYL-5-NITROPHENOL

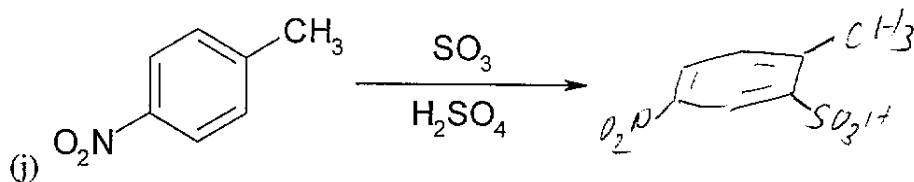
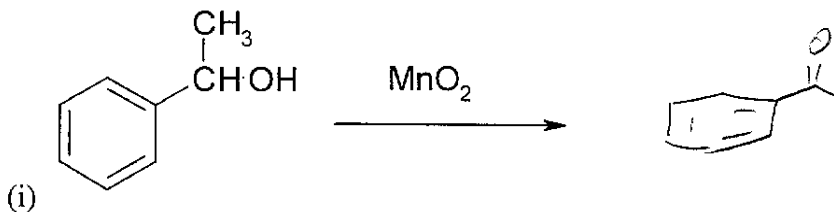
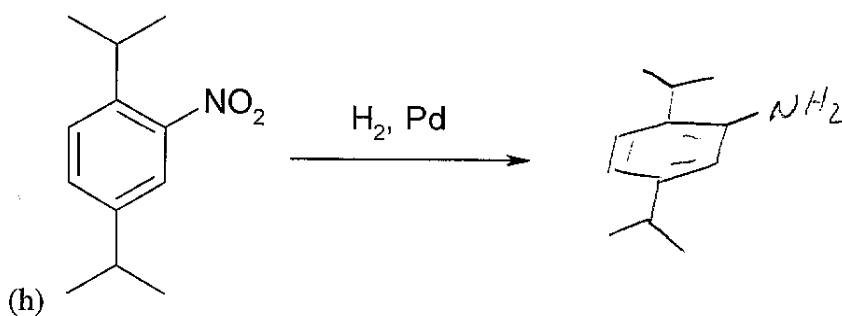
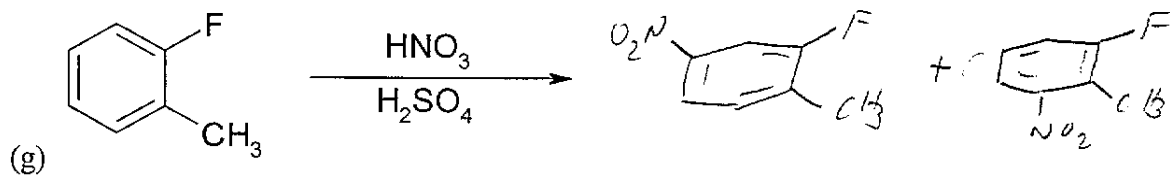


1,2-DIBROMO-4-FLUOROBENZENE

3. Reaction Products (20 pts)

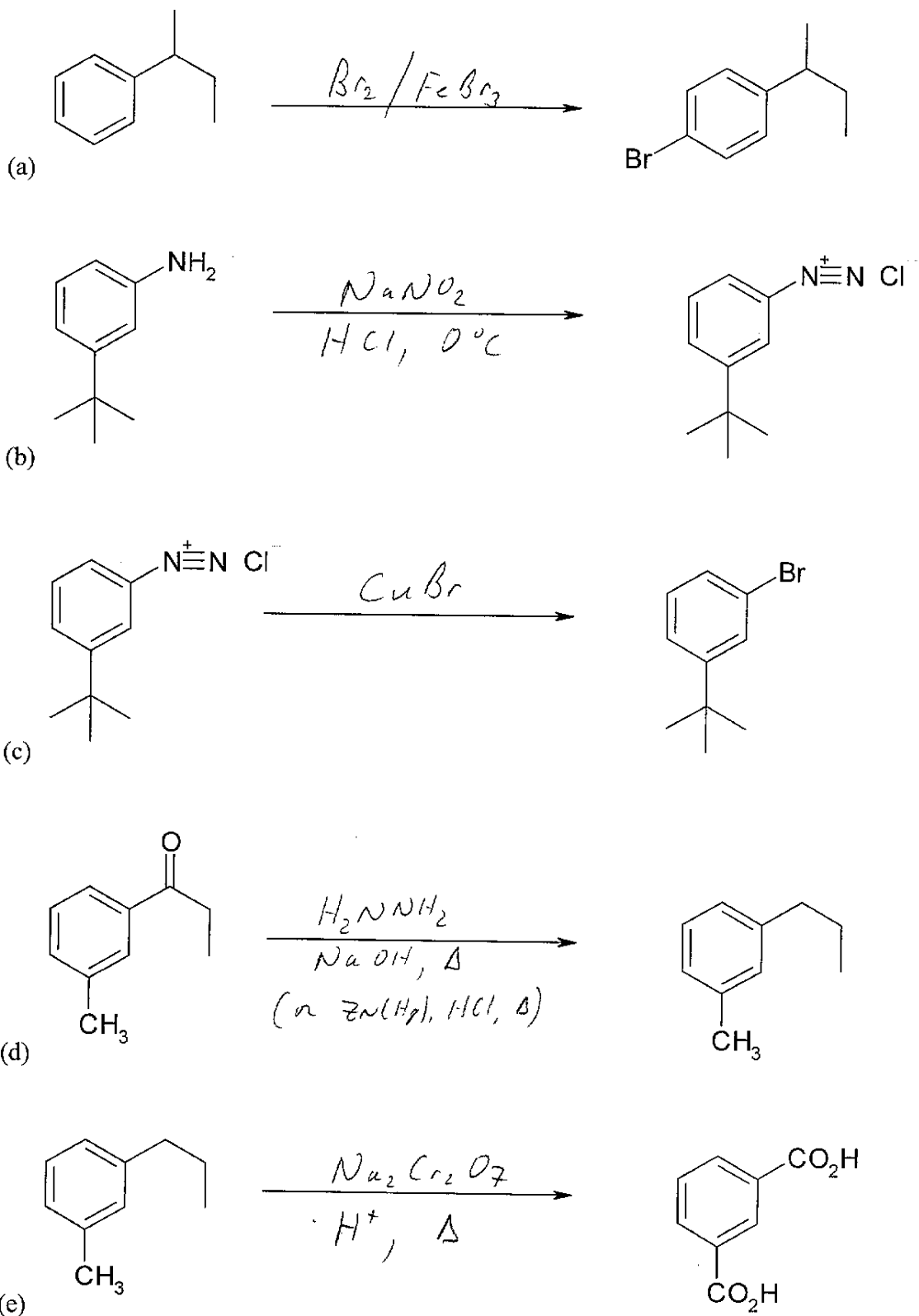
Give the major product(s) of the following reactions:

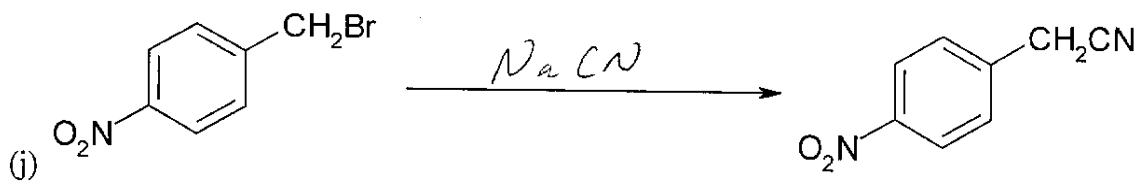
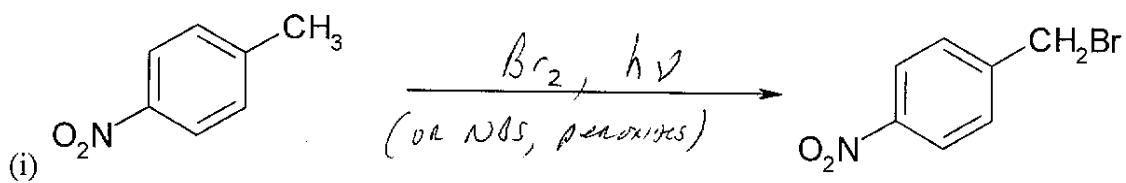
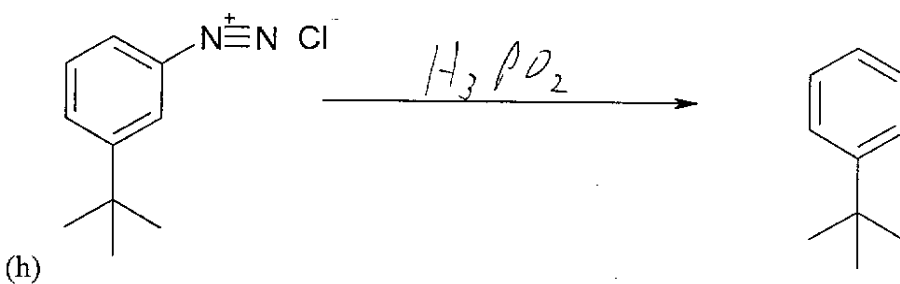
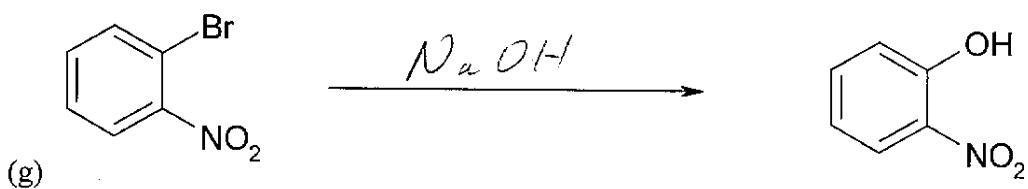
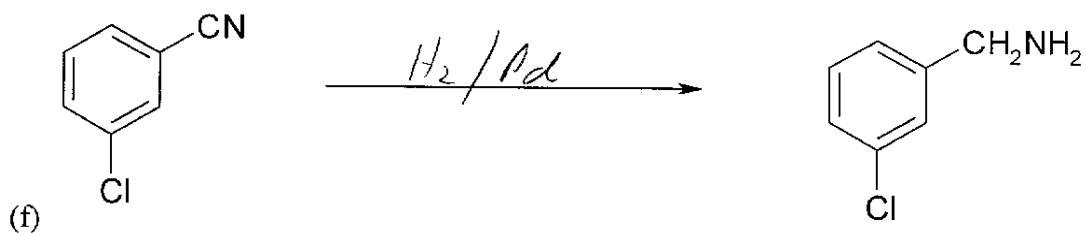




4. Reagents (20 pts)

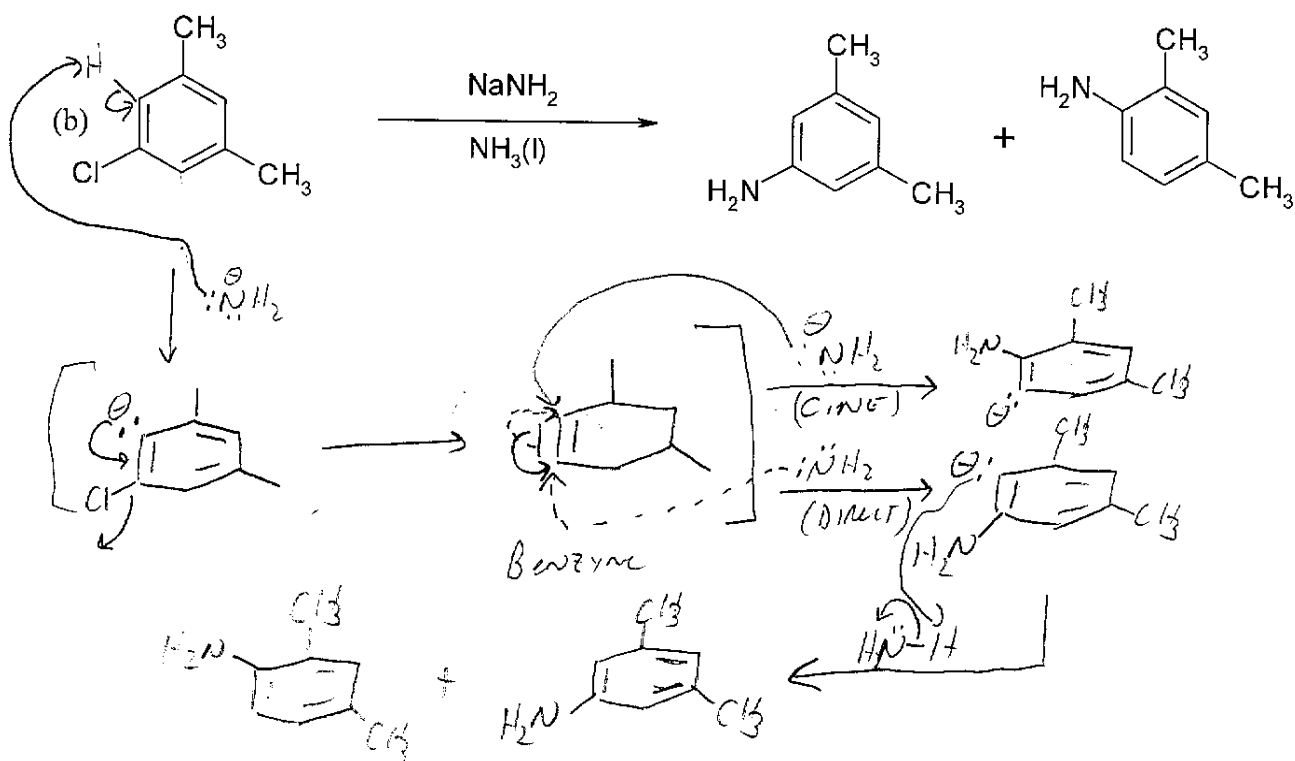
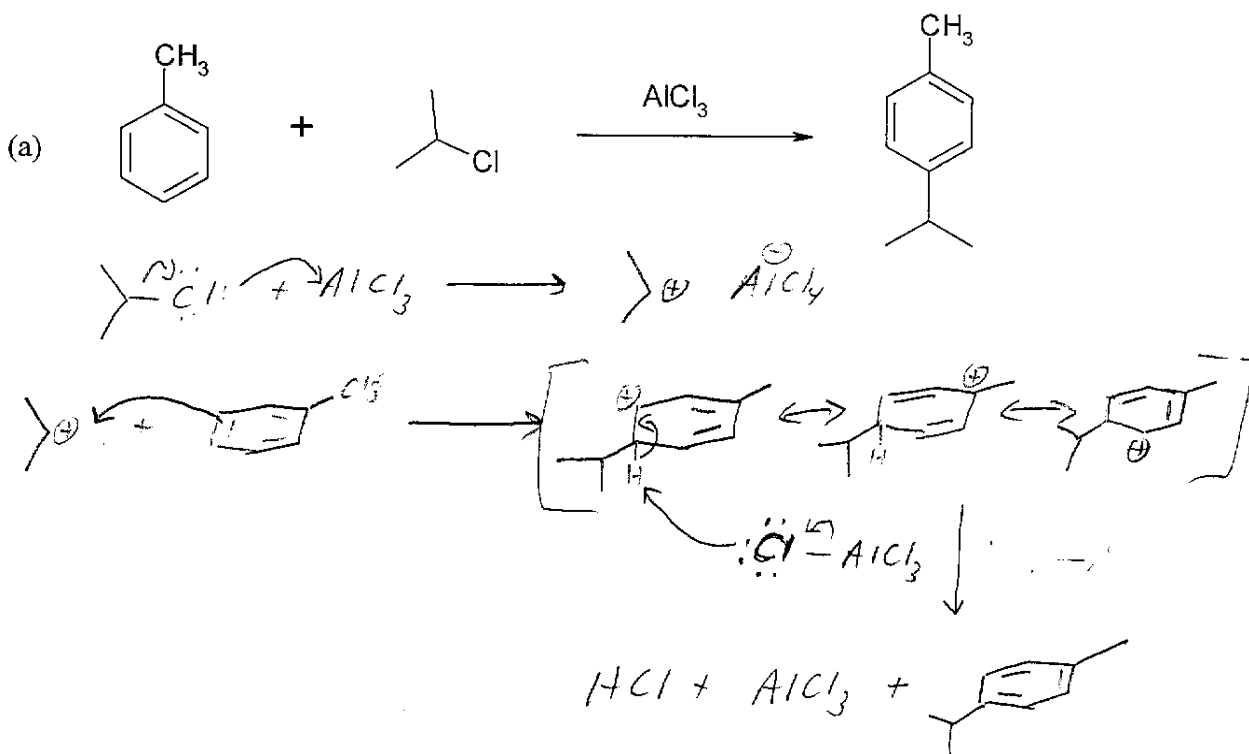
Give the reagents needed to accomplish the following transformations:





5. Mechanisms (20 pts)

Give complete arrow-pushing mechanisms for the following transformations. **Draw all resonance forms for the intermediates.**



6. Synthesis (20 pts)

Provide reasonable syntheses of the following compounds from benzene and any other reagents you need:

