Chem 332
Exam 2
March 5, 2003
Prof. Fox
50 minutes
250 points

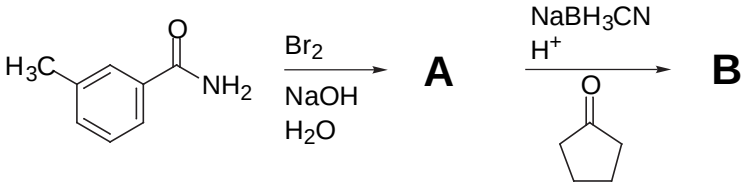
The exam is open book,
Open notes. Models are permitted
Show your work in detail

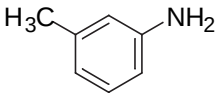
WRITE YOUR NAME ON EVERY PAGE

NAME _____

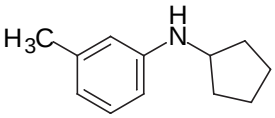
Chem 332, Exam 1. March 5, 2003 **NAME** _____

1. Provide Structures of **A**, **B**, **C** and **D**. Mechanisms are not needed. 10 points for each correct structure (total 40 pts)

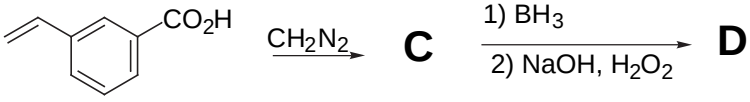


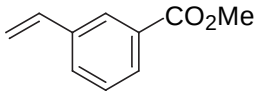


A

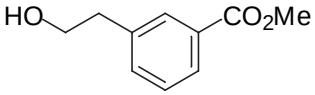


B





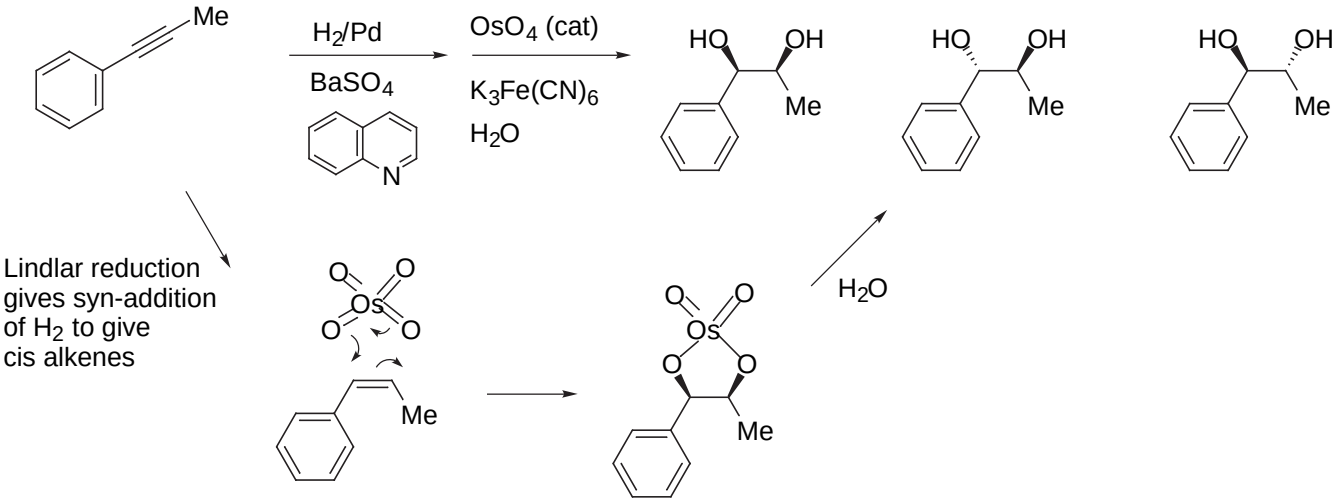
C



D

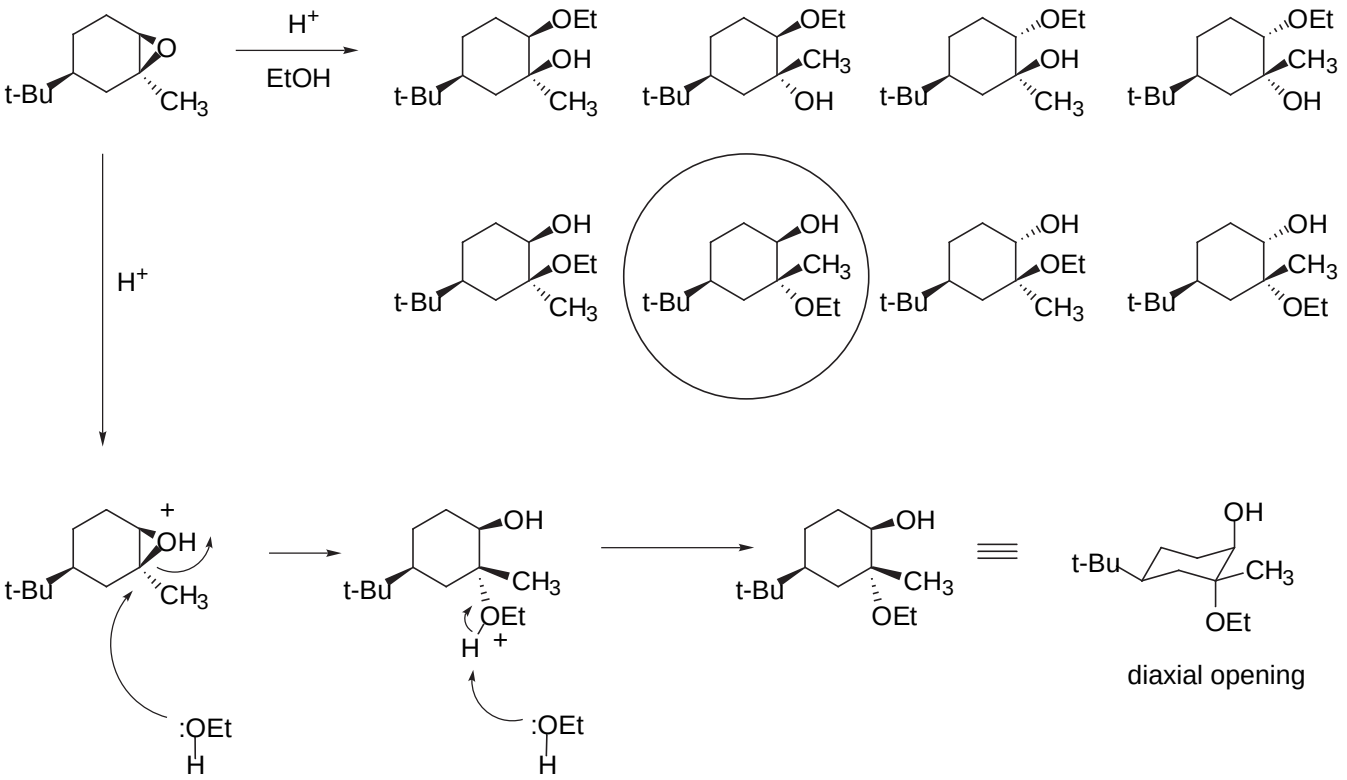
(30 pts)

2. Circle the correct product. Provide a clear and concise explanation.



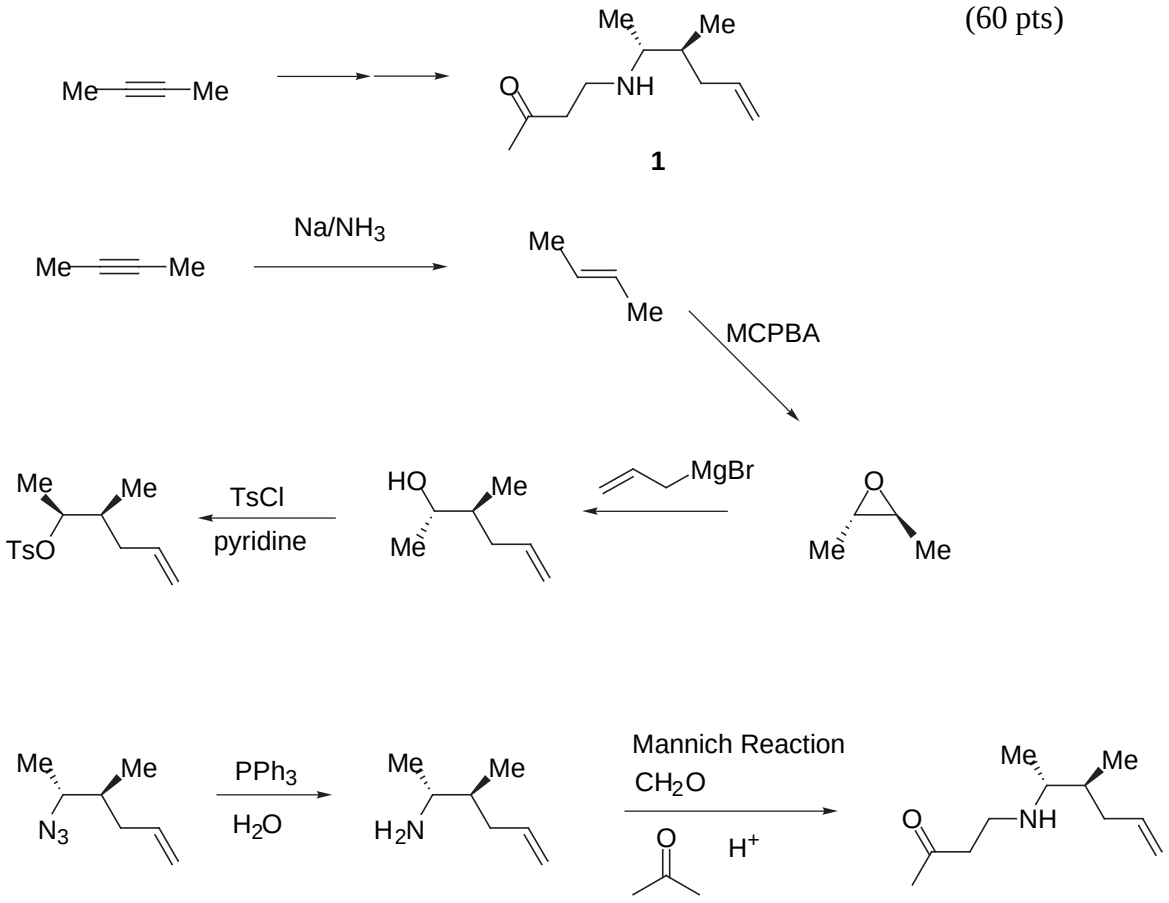
OsO_4 addition occurs by syn addition

3. Circle the correct product. Provide a clear and concise explanation. (30 pts)

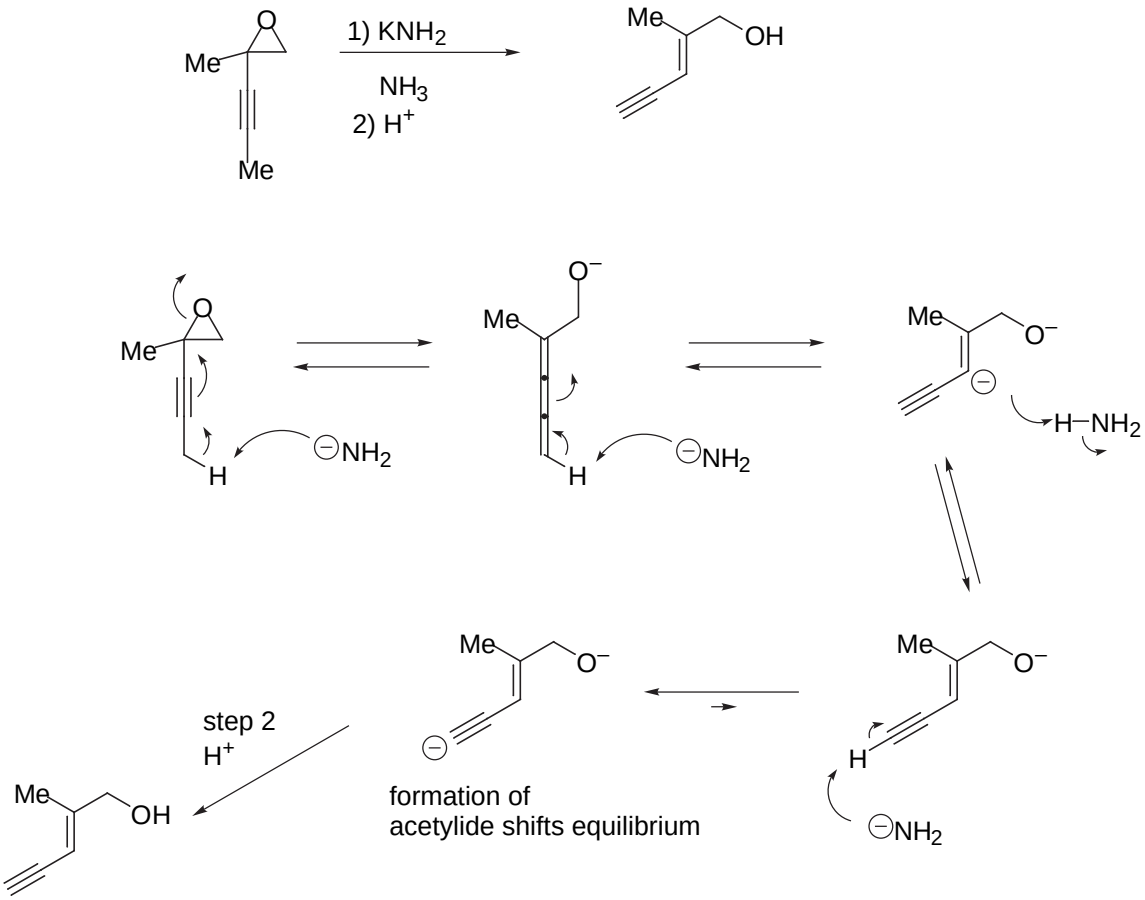


attack of ethanol on a protonated epoxide occurs at the more substituted carbon via a backside displacement. this is facile because the product is diaxial, which is favored kinetically over reactions that would give diequatorial products.

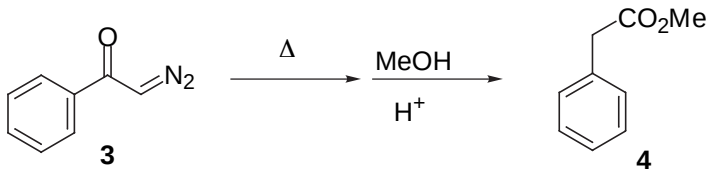
4. Provide a detailed multistep synthesis of **1** starting from 2-butyne and any materials that contain 3 carbons or less. Reagents that do not get incorporated into your product (such as BuLi, Ph_3P) may be used as well. (60 pts)



5. Provide a detailed arrow pushing mechanism (45 pts)



6. Provide a detailed arrow pushing mechanism for the formation of **4**. Hint: consider all of the resonance forms for **3**.



3 **4**

(45 pts)