

GW4: Due at 6pm EST on 4/26/23

RULES: Each team consists of 3 or 4 people (if less than 3, points will be deducted). You can pick your own teammates, and they can vary for all 4 GWs. **You are allowed** to use class notes, textbooks, and discuss answers with the members of **your team only**. **You are NOT allowed** to use web browsing (Internet, AI, etc.) to aid you in any shape or form (including GWs from other years), or to communicate results, answers, or anything related to the GWs with other teams, tutors, etc. (see Syllabus for additional details).

The only ways to use the Internet are to: video chat, e-message, or email your teammates. Again, no web browsing/postings to look for answers! You are expected to abide by the honor system. **One submission per team, signed & dated by all members.**

To submit, drop off the completed document in Luke's mailbox, located outside of the Chemistry Office in Havemeyer (room 340).

OR by email to ochemcampos@gmail.com

*Subject heading: **GW Submission**, followed by the message containing the **names of your team members**. Make sure that the file is attached to your email.*

If it can't be printed, it won't be graded! It is recommended that you print your answers or digitally annotate this PDF to make sure it's legible.

Be concise in your explanations. Adding wrong statements mixed with the correct explanations will lead to a deduction of points.

Team Name (feel free to be creative, but not offensive, we may call this name when returning the GW):

Points:

/25

Print the name of team member A (recorder): _____

Print the name of team member B: _____

Print the name of team member C: _____

Print the name of team member D: _____
(write N/A, if there are only 3 members of your team)

On our honor, we have not given or received help on this GW.

Signature, Team member A Date

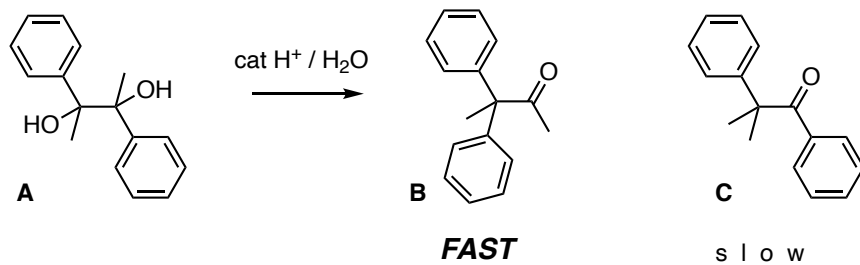
Signature, Team member B Date

Signature, Team member C Date

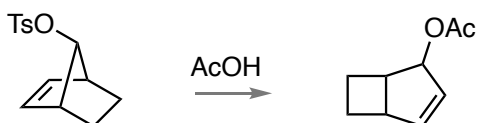
Signature, Team member D Date

10 pts. **3a.** When compound **A** is treated under the conditions below, the main ketone obtained is compound **B**. Provide a *mechanism* **AND** *explanation* that accounts for the fast formation of **B** over the slower reaction toward **C**.

Hint: think about electrophilic aromatic substitution and ask yourself, why is a 1,2-Ar shift faster than a 1,2-Me shift?



7 pts. **2a.** We learned that tosylates don't generally solvolyze to form carbocations. However, in the reaction below, the tosylate **solvolyzes to yield a resonance-stabilized carbocation** in the first step. Propose the mechanism that accounts for the formation of the product below.



3 pts. **2b.** The expected **carbocation** from an **S_N1-type of mechanism is not formed**. Draw the structure of the expected carbocation and provide a suitable explanation as to why this is less favored than the one in the mechanism above.