Academic Honesty Policy. Academic honesty is strictly enforced on quizzes, exams, and other aspects of this course. Academic dishonesty will result in a failing grade in the class and a letter in the student's file. Activities constituting academic dishonesty include:

Cheating
- Copying from others during an examination.
- Communicating exam answers with other students during an examination.
- Offering another person's work as one's own.
- Taking an examination for another student or having someone take an examination for oneself.
- Tampering with an examination after it has been corrected, then returning it for more credit.
- Using unauthorized materials, prepared answers, written notes, or concealed information during an examination.

Dishonest Conduct
- Stealing or attempting to steal an examination or answer key from the instructor.
- Allowing another student to copy off of one's own work during a test.

Collusion
- Any student who knowingly or intentionally helps another student perform any of the above acts is subject to discipline for academic dishonesty.

I understand and will abide by this academic honesty policy: ______________________________ (signature)

1. Consider the following two-step reaction: (Smith, 6.42 and Discussion Section problem 4, 10 pts)

\[
\begin{align*}
\text{[1]} & \quad \text{[2]} \\
\end{align*}
\]

a. Consider the number of bonds broken and formed in Step [1]. Would you predict $\Delta H^\circ$ of this step to be negative or positive? __________________

b. Consider the number of bonds broken and formed in Step [2]. Would you predict $\Delta H^\circ$ of this step to be negative or positive? __________________

c. Which step is rate-determining? __________________

d. Draw the structure of the transition state in both steps of the mechanism:

   Step 1: \\
   Step 2:

e. $\Delta H^\circ_{\text{overall}}$ is negative for this two-step reaction. Draw an energy diagram for the reaction. Properly label the axes, reactants, intermediates, products, and transition states.