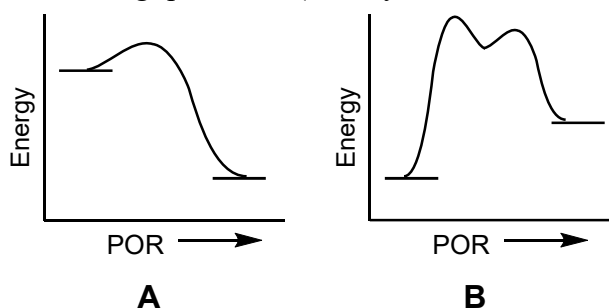


2A) (6 pts) Use the given Energy vs. Progress of Reaction diagrams for reactions A and B to answer the following questions. (Place your answers, **A** or **B**, in the boxes provided.)

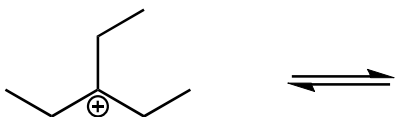
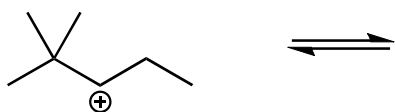
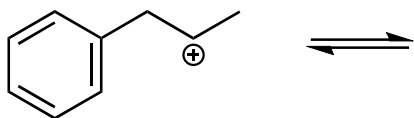


Which reaction has exactly one transition state?

Which reaction has a negative ΔH ($\Delta H < 0$)?

Which reaction has exactly one intermediate?

2B) (8 pts) Which of the following carbocations are expected to undergo a rearrangement? Write N.R. if no rearrangement. If one is expected, show the mechanism and draw the result of the rearrangement.



2C) (8 pts) For each reaction, predict what mechanism will account for the major product(s) formed (S_N1 , S_N2 , $E1$, $E2$ or N.R.). No explanation or drawing of the product(s) is needed.

