

5. Show the two-step mechanism for the polar reaction between $\text{H}_2\text{C}=\text{CH}_2$ and HCl . Use complete Lewis structures. Include all curved arrows. Identify all nucleophiles and electrophiles. Also, depict the energy diagram. Include the locations of the activation energy (ΔG^\ddagger) for both steps, as well as both transition states and the intermediate cation, in your diagram. See chapter notes, as well as Figures 6.3 and 6.7 in McMurry. (3 pts)

6. Show the mechanism for the radical reaction between ethane (C_2H_6) and bromine (Br_2) to form bromoethane ($\text{C}_2\text{H}_5\text{Br}$). Use curved half-headed arrows for each step. Also, show complete Lewis structures for each molecule and radical. Identify all three types of steps. See chapter notes, as well as section 6.3 in McMurry. (3 pts)