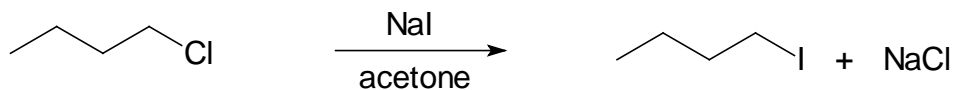
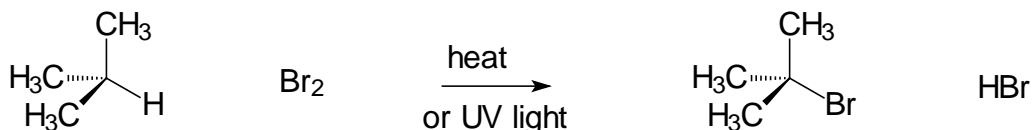


5 points. Treatment of 1-chlorobutane with sodium iodide in acetone results in formation of 1-iodobutane, along with sodium chloride as a precipitate. Propose a mechanism for the reaction, using arrows to show "pushing of electrons". Draw the structure of the Transition State (the high energy intermediate) that would be formed in the reaction.



5 points. Treatment of isobutane with bromine in the presence of heat or ultraviolet light produces *tert*-butyl bromide and HBr. Calculate the Heat of Reaction (ΔH°) for the reaction.



Bond Energy (kcal/mole)	X = H	X = Br
(CH ₃) ₃ C-X	91	65
H-X	104	88
X-X	104	46