In-Class Exercise: Proton-Mediated S_N1 Mechanisms

Each of the S_N1 reactions below involves both substitution and proton transfer. "Push electrons," using curved arrows, to illustrate the reaction mechanism. Make sure to draw each step explicitly; don't cheat by, say, combining acid-base exchange and S_N1 steps into one.

$$CH_3$$
 H_2SO_4
 Br
 CH_3
 CH_3