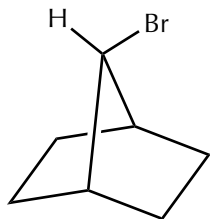
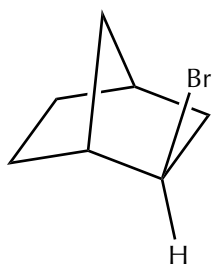


There are three other unique positions where the bromine atom can be located. Draw these three structures and predict whether it is possible or not to see the four types of reactions listed.

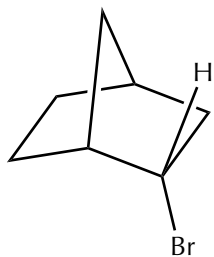
S_N2 E2 S_N1 E1



yes no slow no (angle is bad for forming pi bonds)



yes yes slow slow



yes yes slow slow

The carbocation reactions might not be predicted to take place at the 2° centers, depending on the reaction conditions. High temps and/or additives (Ag^+ or $AlBr_3$) can be used to ionize the unstabilized 2° atoms.