NAME (Print): _____

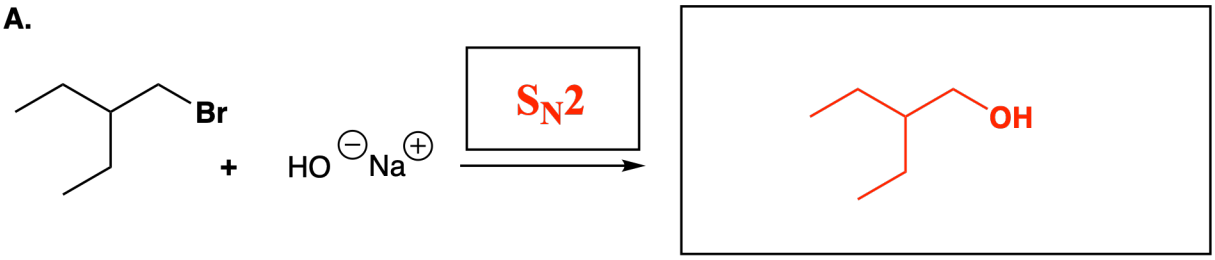
SIGNATURE: _____

Chemistry 320M/328M
Dr. Brent Iverson
9th Homework
November 4, 2026

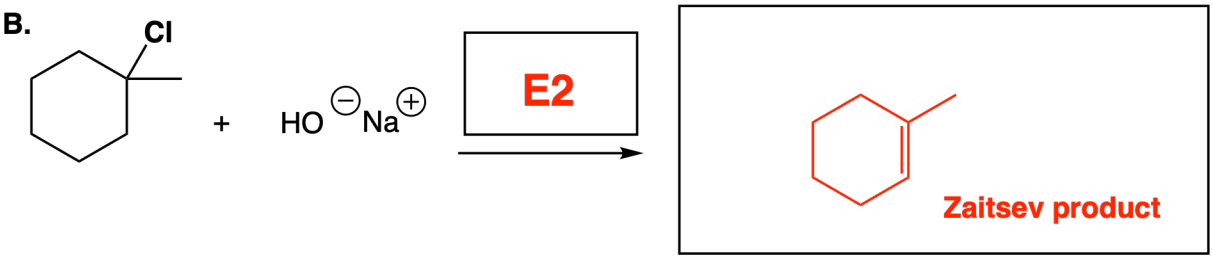
Please print the first three letters of your last name in the three boxes

1. (5 or 6 pts) The following reactions all involve chemistry of haloalkanes. **Fill in the box above the arrow with the mechanism that will be followed (S_N2, E2, etc.). Then draw only the predominant product or products** and please remember that **you must draw the correct stereoisomers**. For S_N1/E1 reactions you must draw all significant products (including all stereoisomers).

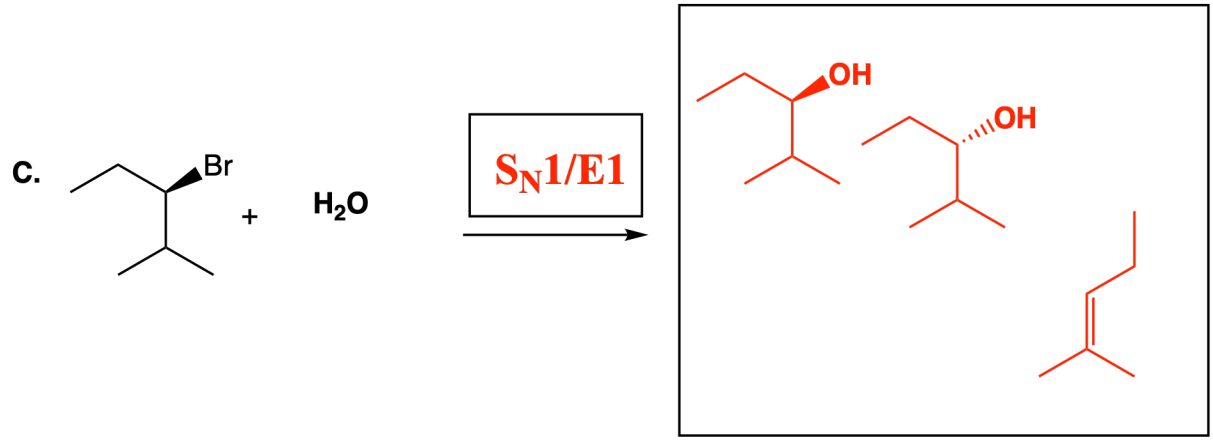
A.



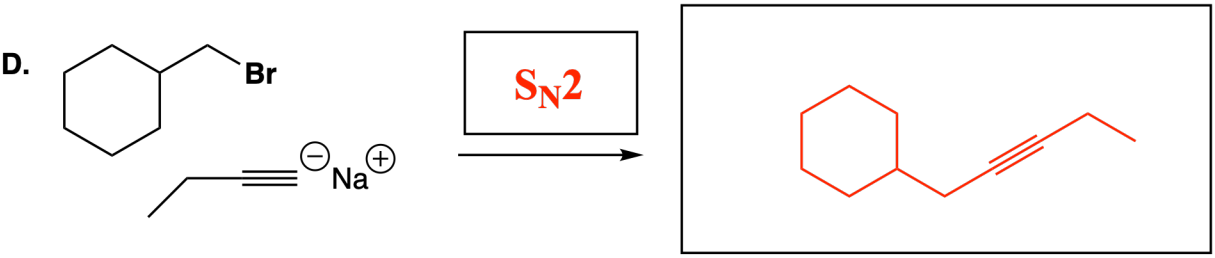
B.



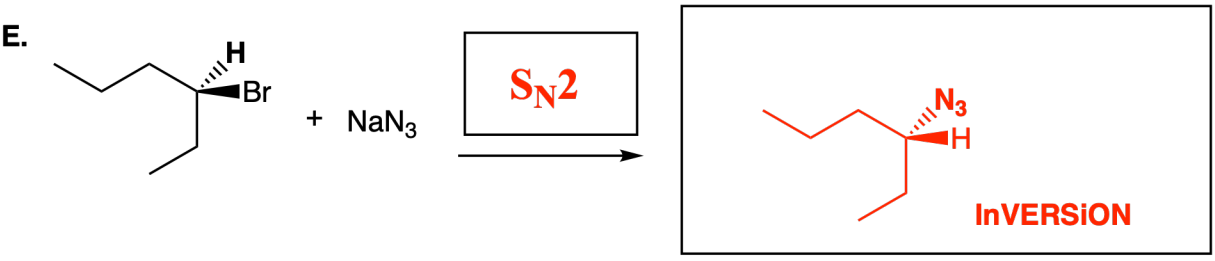
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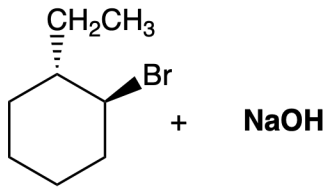
D.



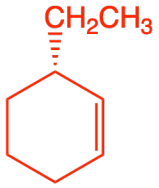
E.



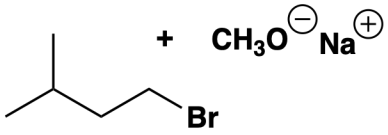
F.



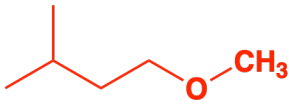
E2



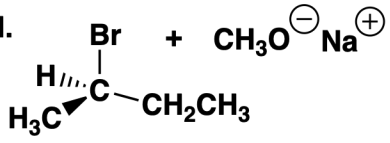
G.



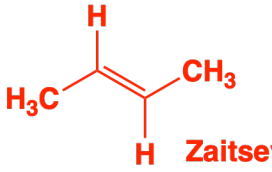
S_N2



H.

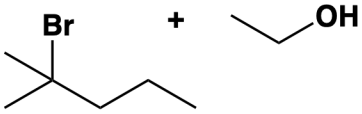


E2

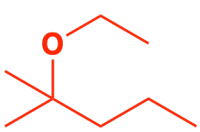


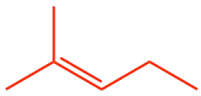
Zaitsev product

I.



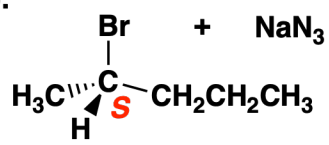
$S_N1/E1$





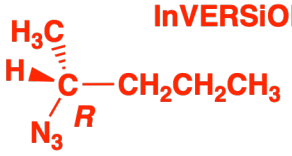
Zaitsev product

J.

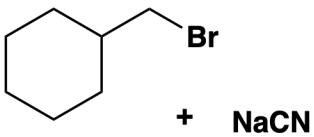


S_N2

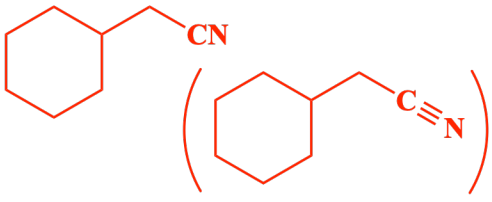
InVERSiON



K.



S_N2



2. (20 pts) Consider the following statements that refer **S_N1, S_N2, E1, E2**, or a **radical chain reaction** mechanism. Fill in the circles to indicate to which mechanism(s) each statement applies.

A. A reaction in which the predominant product is predicted by Zaitsev's rule.	○ S_N2 ○ S_N1	● E2 ● E1	○ Radical chain reaction
B. A reaction observed when tertiary haloalkanes react with any nucleophile that is not a very weak base.	○ S_N2 ○ S_N1	● E2 ○ E1	○ Radical chain reaction
C. A reaction that involves an anti-periplanar transition state.	○ S_N2 ○ S_N1	● E2 ○ E1	○ Radical chain reaction
D. A reaction that involves initiation, propagation and termination steps.	○ S_N2 ○ S_N1	○ E2 ○ E1	● Radical chain reaction
E. A reaction that is favored for secondary haloalkanes when a nucleophile that is NOT a strong base and is also NOT a very weak base is used	● S_N2 ○ S_N1	○ E2 ○ E1	○ Radical chain reaction
F. A reaction mechanism that involves a carbocation intermediate.	○ S_N2 ● S_N1	○ E2 ● E1	○ Radical chain reaction
G. A reaction mechanism that involves only a transition state, no intermediate.	● S_N2 ○ S_N1	● E2 ○ E1	○ Radical chain reaction
H. A reaction that causes InVERSiON of sterechemistry at the site of reaction.	● S_N2 ○ S_N1	○ E2 ○ E1	○ Radical chain reaction
I. A reaction that will occur when Br_2 and light are used with an alkane.	○ S_N2 ○ S_N1	○ E2 ○ E1	● Radical chain reaction
J. A reaction that involves initiation, propagation and termination steps. Yep, this one is here twice because it is important!	○ S_N2 ○ S_N1	○ E2 ○ E1	● Radical chain reaction
K. A reaction obeserved when secondary haloalkanes react with a nucleophile that is a very weak base (as solvent).	○ S_N2 ● S_N1	○ E2 ● E1	○ Radical chain reaction