Exam 3 Common Mistakes

This is a WRONG answer:

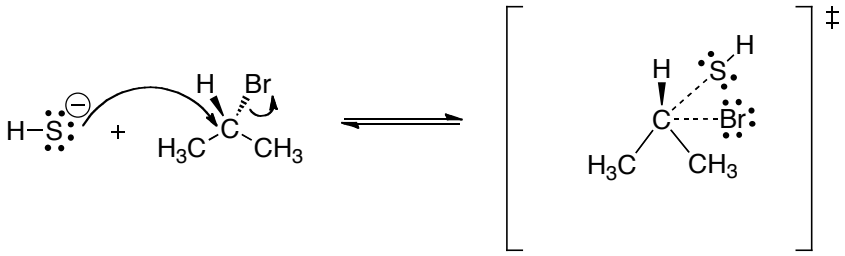
	Mechanisms
4C. When reaction occurs at a chiral center on a pure sample of a single enantiomer, a mixture of product enantiomers will be created.	S_N1

In S_N1, if a chiral center is formed, a *mixture of product enantiomers* will be created, (not racemic).
In a radical chain reaction, if a chiral center is formed, a *racemic* mixture will be created:
Racemic: a 1:1 *mixture* of *enantiomers.*

This is the CORRECT answer

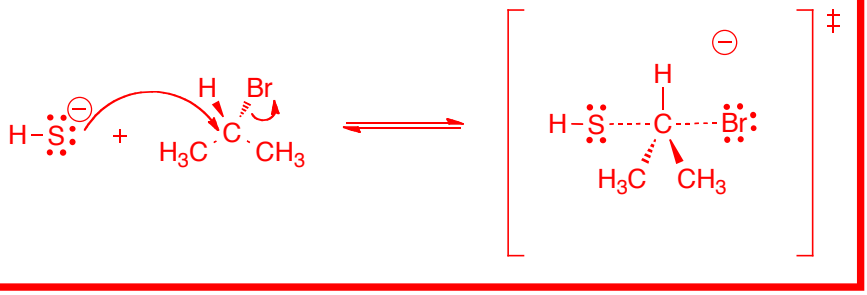
	Mechanisms
4C. When reaction occurs at a chiral center on a pure sample of a single enantiomer, a mixture of product enantiomers will be created.	S_N1 , Radical Chain Reaction

This is a WRONG answer:



For the S_N2 mechanism, there needs to be a *backside* attack of the nucleophile (HS^-) to the leaving group (Br). Notice that the carbon stereochemistry is not sp^2 here (trigonal planar). Also, you need to conserve the negative charge. See answer below.

This is the CORRECT answer



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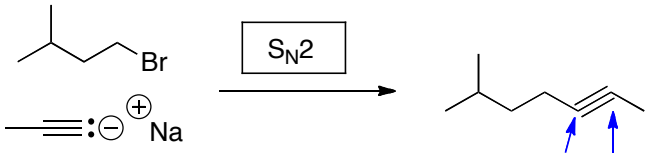
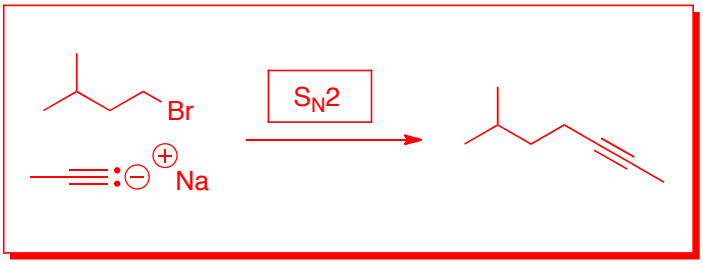


Carbons that are sp hybridized are *linear*.

This is the CORRECT answer



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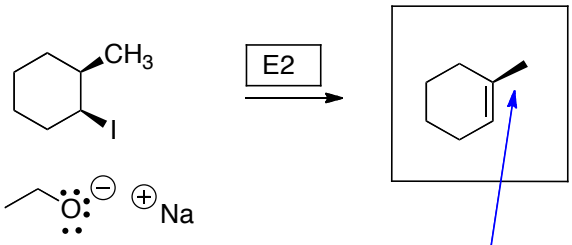
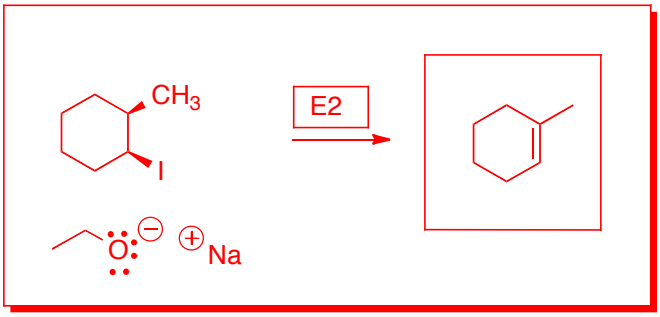


The geometry around an sp^2 hybridized carbon is trigonal *planar* so all three atoms attached have to be in the same plane. This answer should NOT have a wedge.

This is the CORRECT answer



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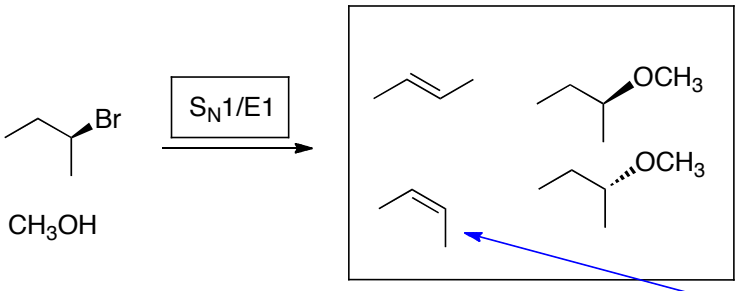
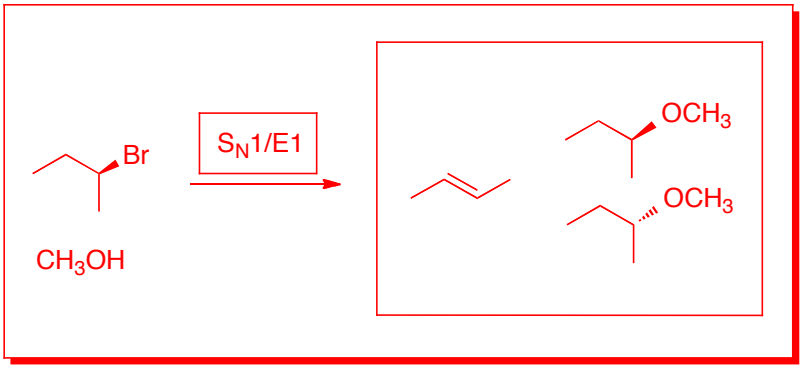


The *only* E1 product, should be the Zaitsev product (not the cis product)

This is the CORRECT answer



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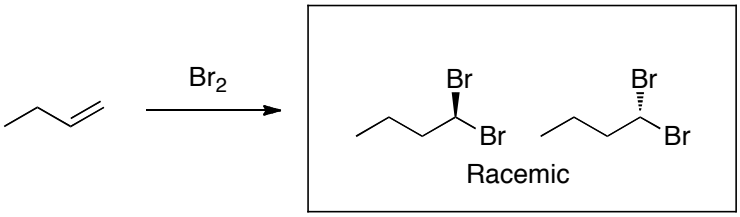
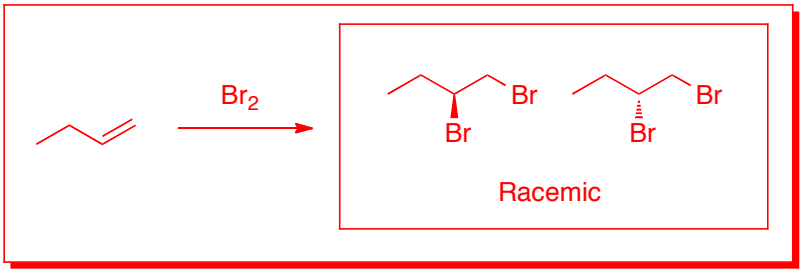


This has been a common mistake: accidentally placing the bromines on the same carbon. Remember Br_2 addition creates *vicinal* dihalides (adds bromines across the double bond).

This is the CORRECT answer



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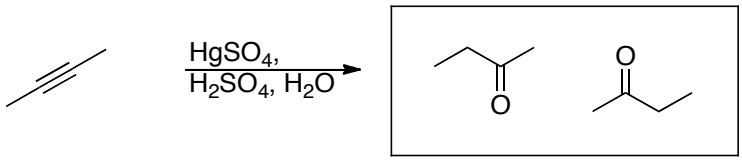
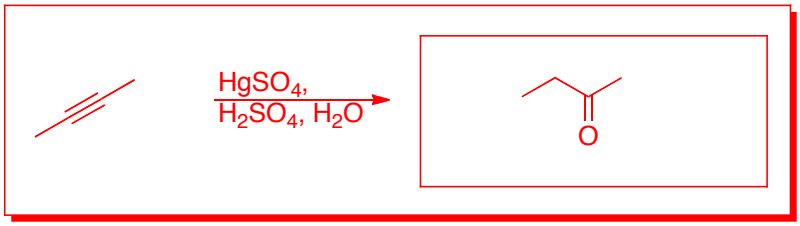


These two products that are drawn are the same molecule so you only draw one of these two drawn.

This is the CORRECT answer



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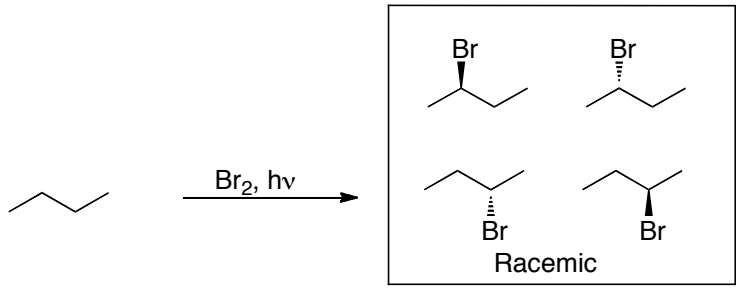

Of these four products drawn, there are only two unique molecules, so only two should be drawn.

This is the CORRECT answer