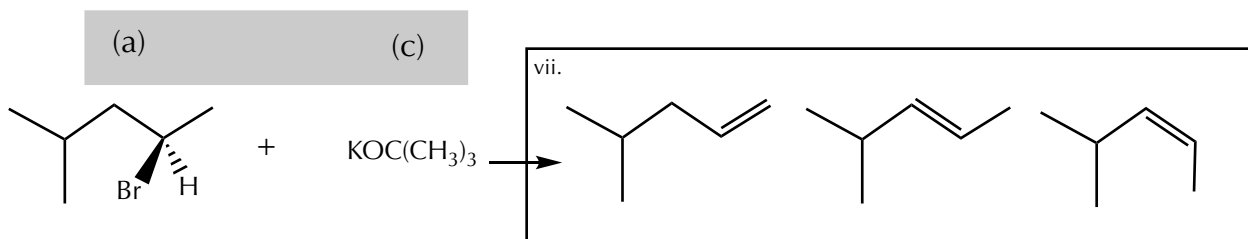


Problem of the Day 28

Section 7.3

Question 7.12 (a)–(c)

Select one of the examples and put it under the reaction conditions for one of the other two. What is the predicted outcome now?



i. Is there (or is there the potential for) an sp^3 carbon-leaving group?

yes	yes, potential	no
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ii. If so, what is the structural category for the carbon atom?

1°	2°	3°	heteroatom-substituted
allylic		benzylic	propargylic

iii. If there is a Lewis base, what is its classification?

anion, conj. acid $\text{pK}_a < 15$ uncharged sp^3 N, S, or P	anion, conj. acid pK_a 15-30	conj. acid $\text{pK}_a > 30$, hindered base conj. acid $\text{pK}_a > 10$	poor electron donor (not in the other categories)
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iv. Is a bimolecular reaction predicted? If so, which one?

$\text{S}_{\text{N}}2$	E2	no bimolecular
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v. If no bimolecular, then is there:

good carbocation possible	polar solvent
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vi. Is $\text{S}_{\text{N}}1/\text{E}1$ predicted?

yes	no
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obviously, there are other combinations!

work things out through comparisons and conversation with other students