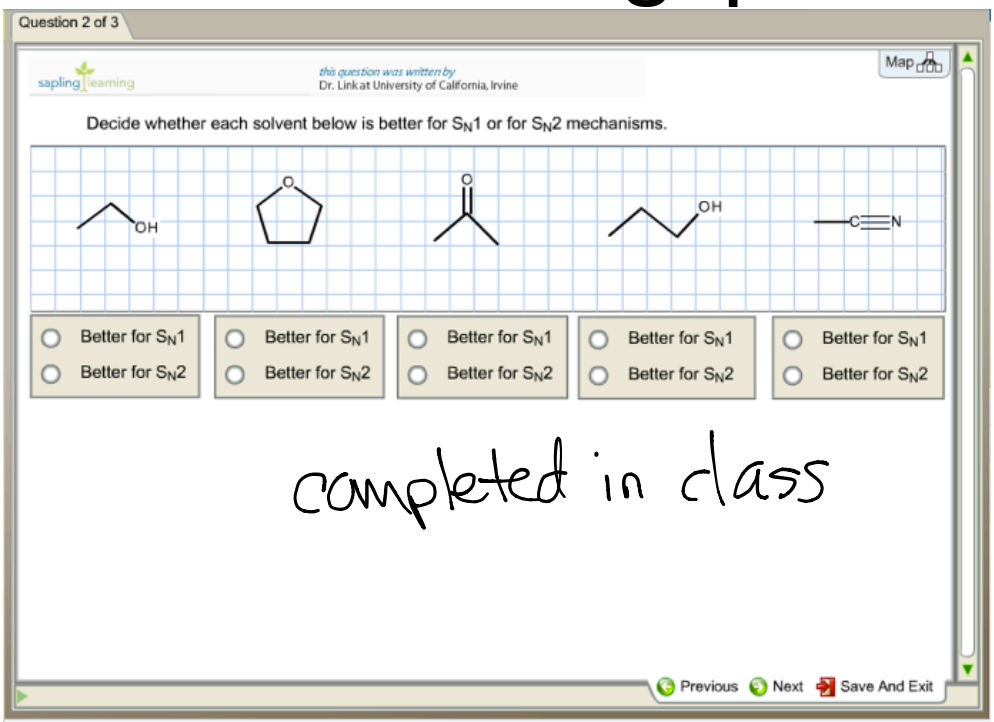
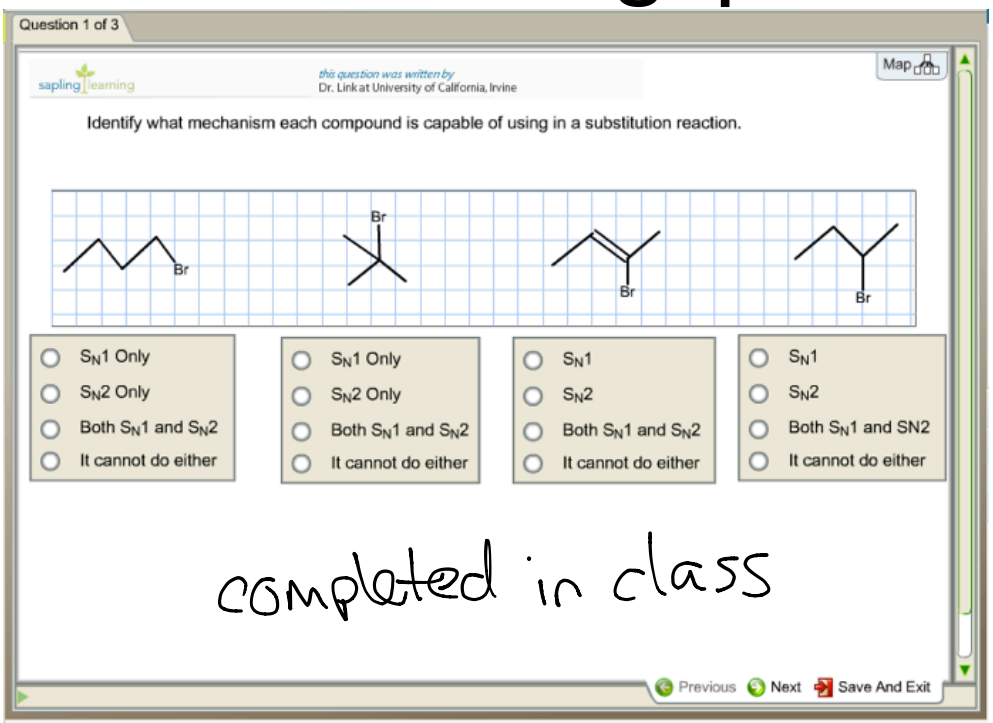
From the reading quizzes...

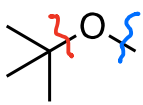


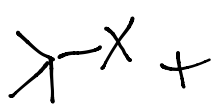
From the reading quizzes...



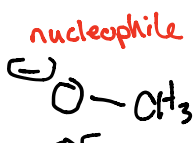
How can we make this?

Two ways to consider

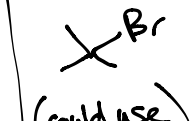




electrophile
3°, so only S_N1

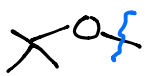


$HO-CH_3$
weak nu for S_N1



(could use Cl or I)

+ CH_3OH



or

+ $X-CH_3$

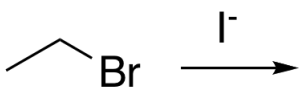
nucleophile?

electrophile
1°, S_N2 only

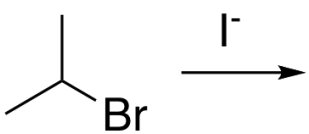
* t-butoxide is a bulky, non-nucleophilic base!

This synthesis will not work because t-butoxide is non-nucleophilic! To make the desired product, the S_N1 synthesis above would be required.

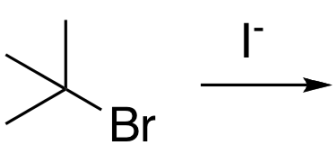
What is possible? Why?



only S_N2

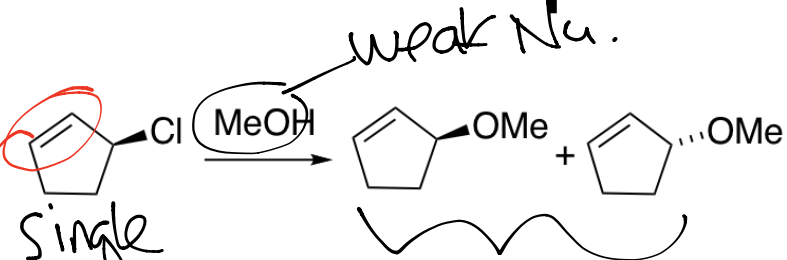


S_N1 or S_N2. Will depend on conditions, but likely S_N2 because of strong Nu.

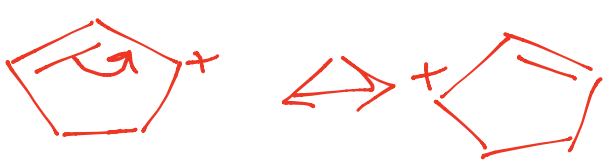


only S_N1

From the podcasts...



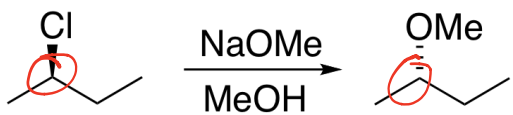
Important!



Factors
- 1°, allylic
- weak Nu
- polar protic solvent

} Nu = solvent!

Another from the podcasts...



S_N2, so stereocenter inverted.
Still single enantiomer

Factors

- 2° alkyl halide ⇒ S_N1 or S_N2
- Strong Nu ⇒ S_N2
- polar protic solvent ⇒ better for S_N1 but S_N2 possible.

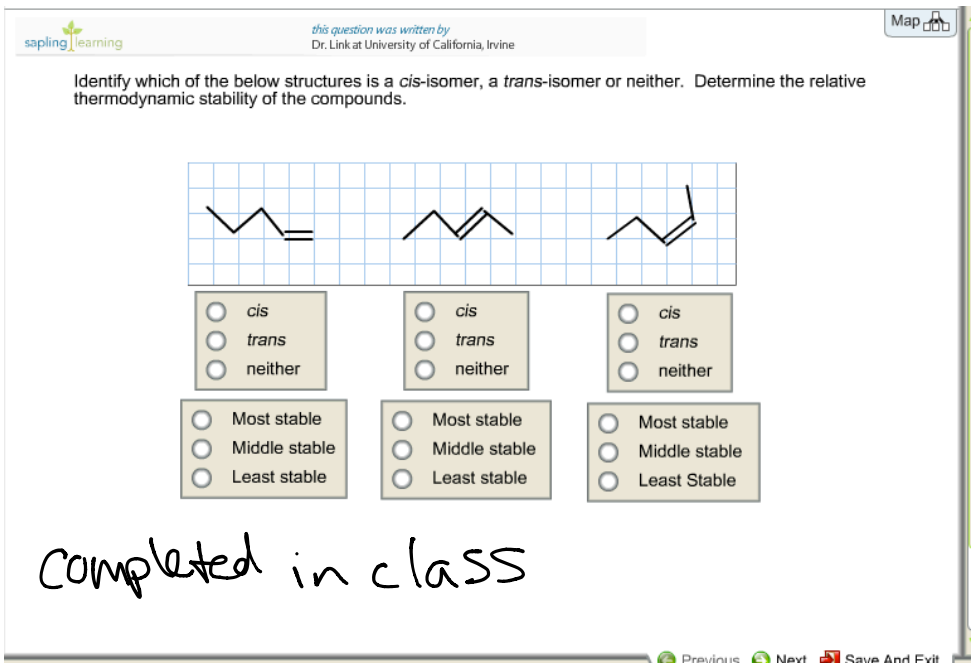
} result → S_N2

Make a flow chart!

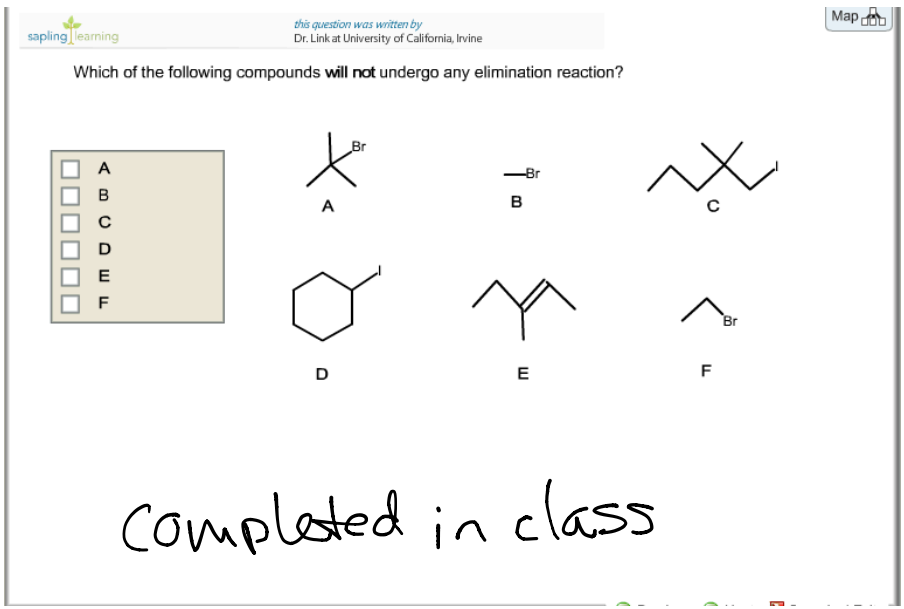
How do you decide if it's S_N1 or S_N2?
What should you ask yourself first?
Then what?

Make sure you do this yourself!

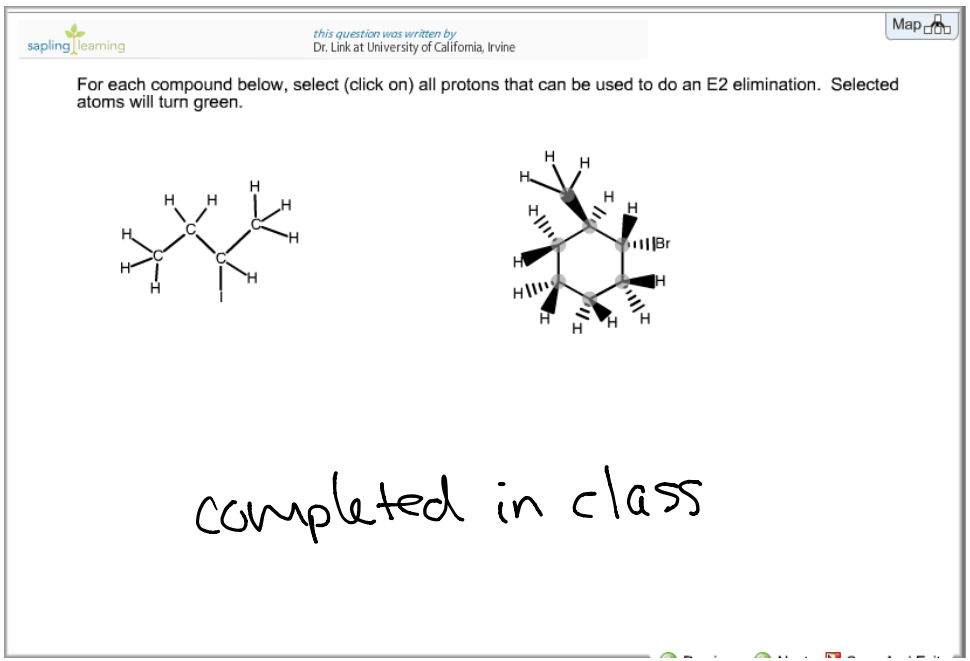
Alkene Stability



Less than half of the class got this right!



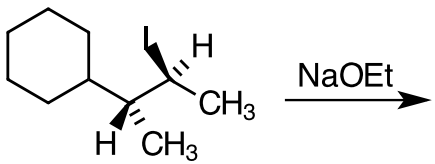
Reading Quiz Question



Draw elimination product(s), mechanism, and transition state

completed in class

Draw elimination mechanism and product(s)



completed in class

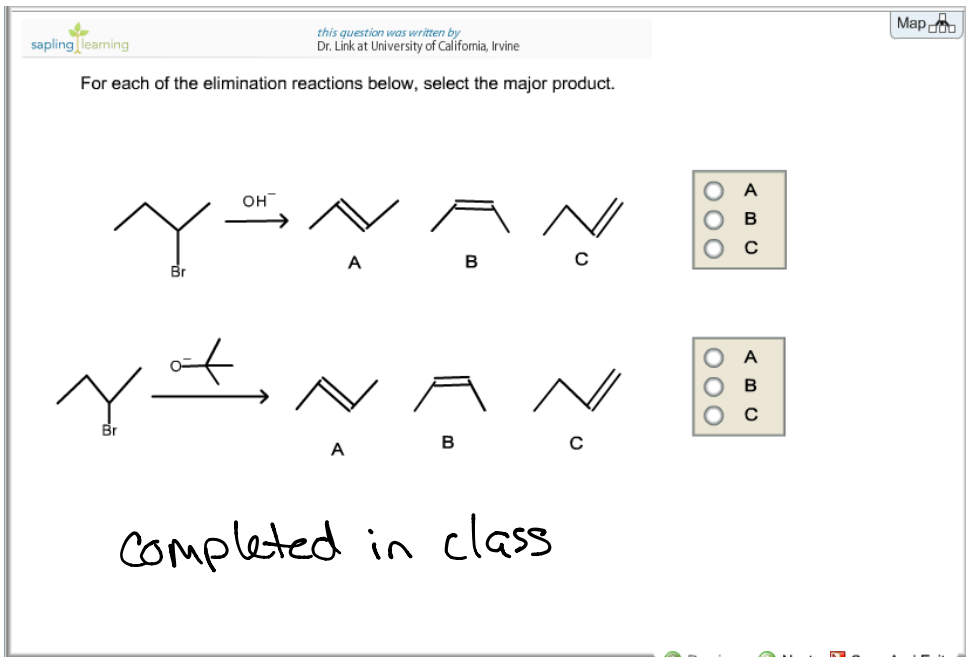
Hint: Newman projection useful!

Draw elimination product(s)

(1R,2R)-1-bromo-2-methylcyclohexane
with potassium hydroxide

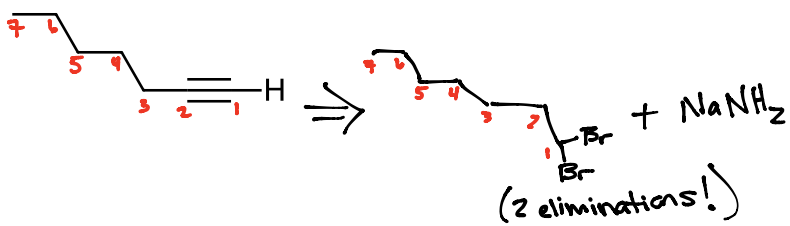
completed in class

Base Matters!



Synthesis questions

How would you synthesize this compound using elimination?



why not

or

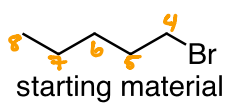
?

Show a synthesis route for this compound from the given starting material. Can you use elimination?

desired product

8 C

nucleophile



starting material

5C

electrophile

Product has more carbons than starting material. Can't use elimination. Must use substitution.