

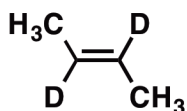
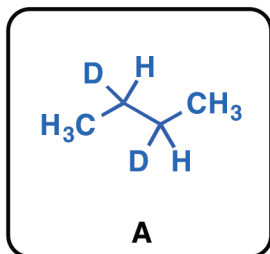
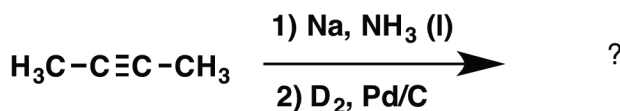
# Alkyne Exam Preparation Pack

## Answer Key

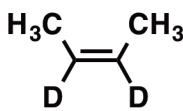
note - all problems can also be found [here](#) (link)

Multiple-Choice #1: What is the major product of this reaction?

Link to answer video  
<https://bit.ly/2XUYeYP>



**B**



**C**

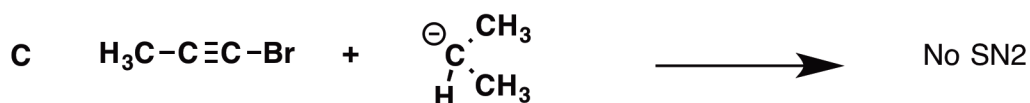
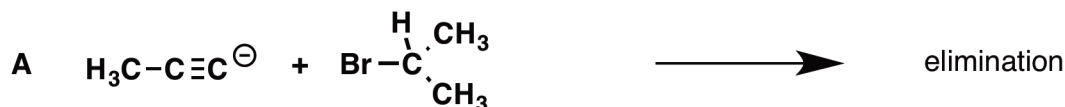
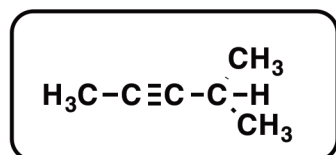


**D**



Multiple-Choice #2: Pick the best reaction conditions that will synthesize this alkyne

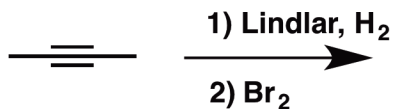
<https://bit.ly/2WoM9L0>



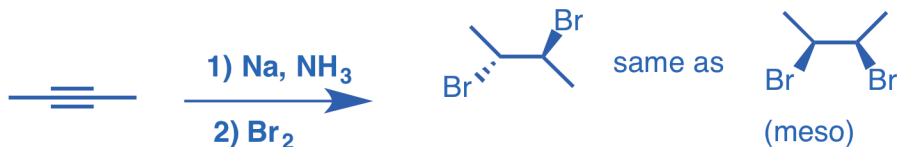
**Multiple-Choice #3: Which set(s) of conditions produces a meso product from 2-butyne?**

<https://bit.ly/3odxPQP>

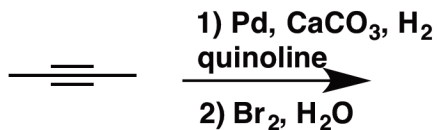
A



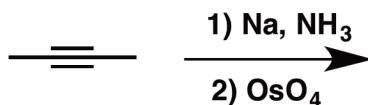
B



C



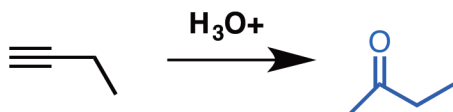
D



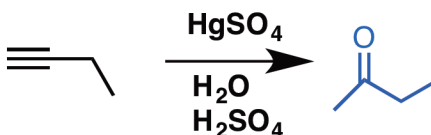
**Multiple-Choice #4: Which of the following reactions does NOT give a ketone as a product ?**

<https://bit.ly/3AREBPV>

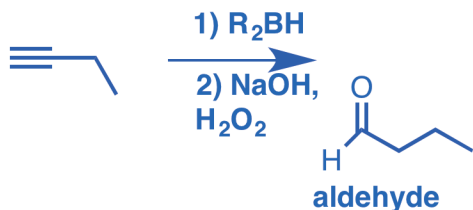
A



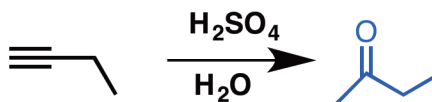
B



C

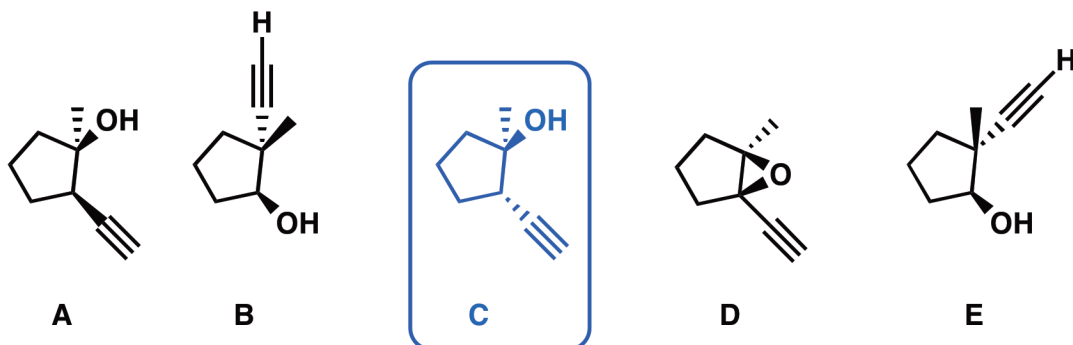
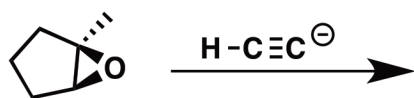


D



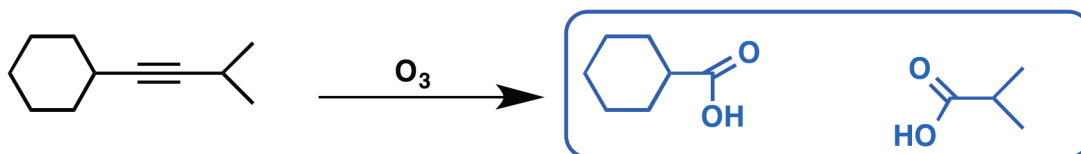
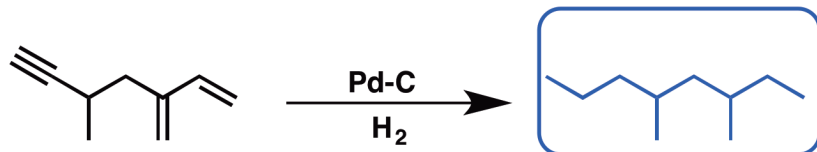
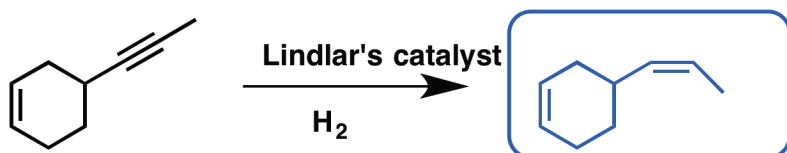
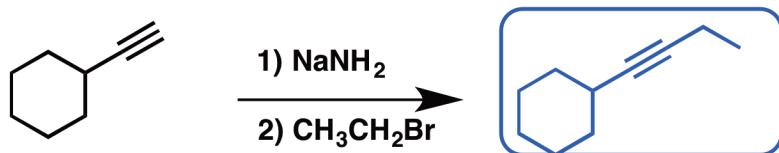
Multiple-Choice #5: [Assuming you have covered epoxides] ,  
choose the major product

<https://bit.ly/3okF4GL>



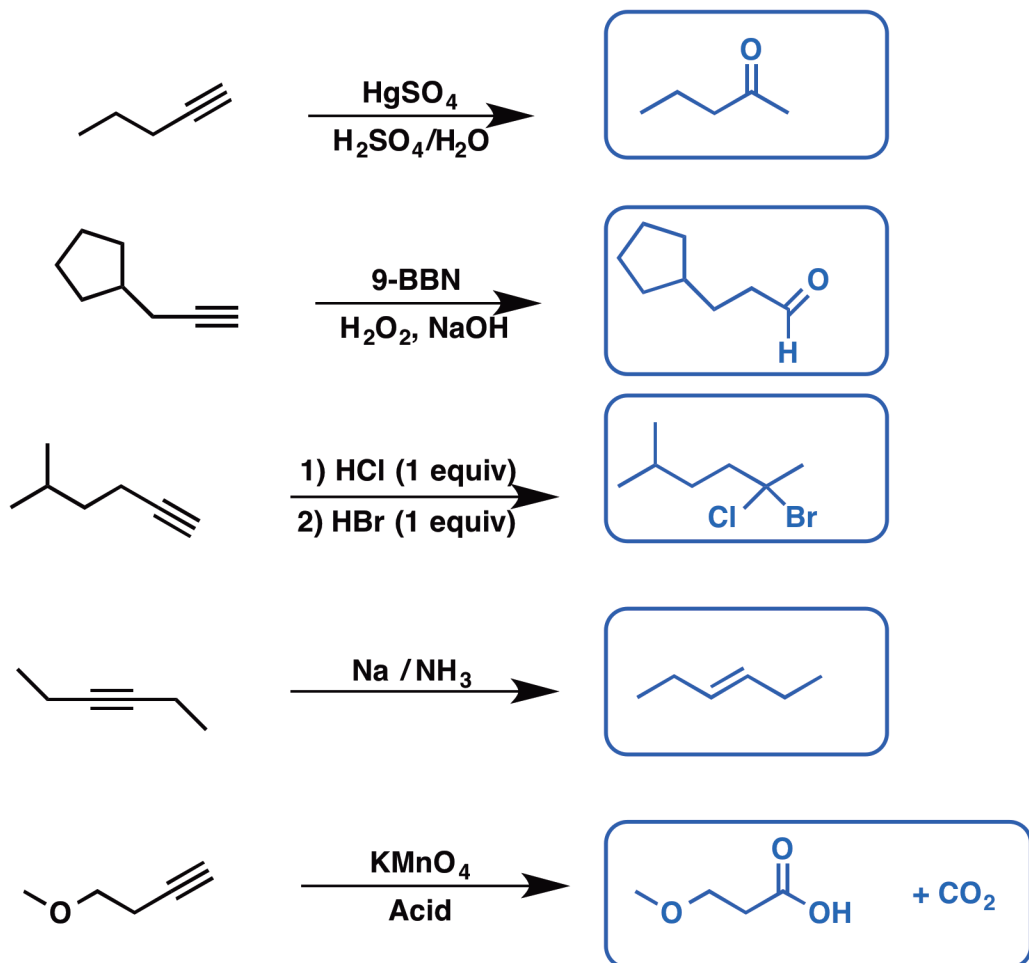
Fill In The Blanks #1:

<https://bit.ly/3um7CR2>



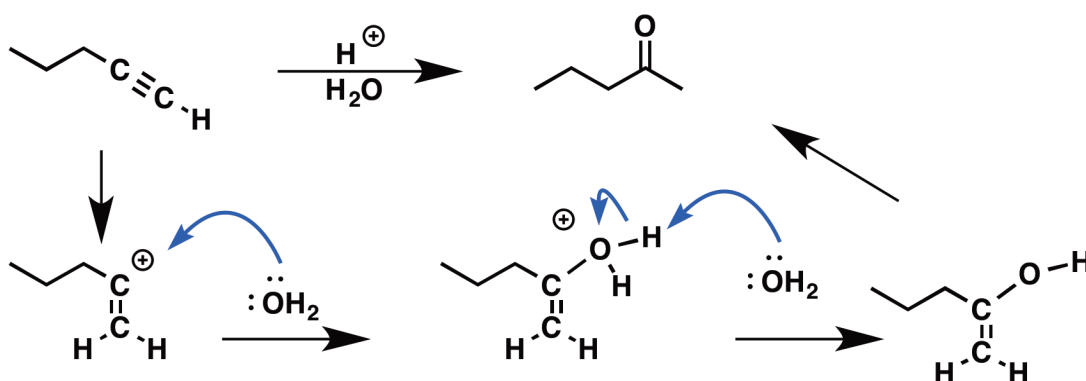
## Fill In The Blanks #2:

<https://bit.ly/3zRUVyJ>



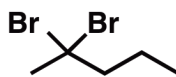
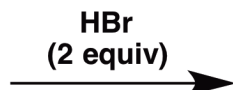
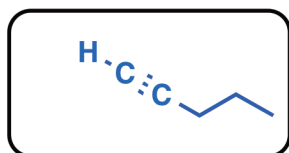
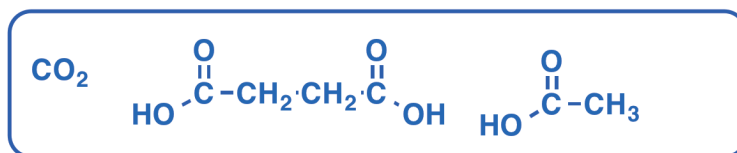
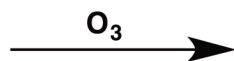
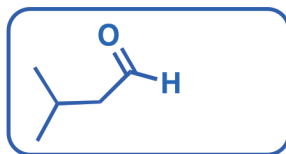
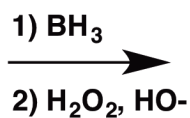
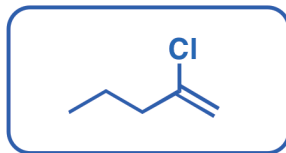
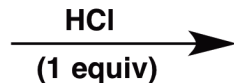
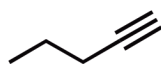
## Mechanism#1. Draw a mechanism for the following reaction

<https://bit.ly/3oh57i0>

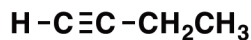
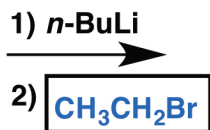


### Fill In The Blanks #3:

<https://bit.ly/2Y0uKJt>

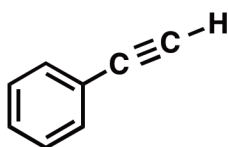
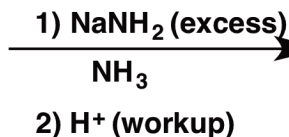
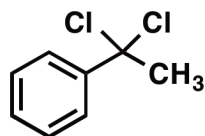


(only product)



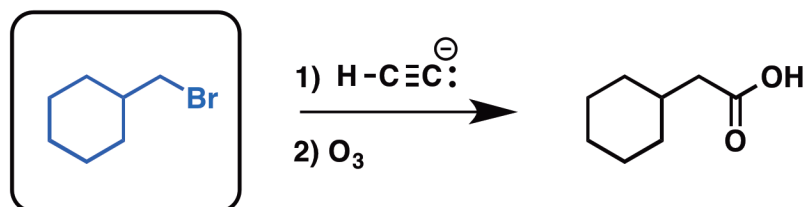
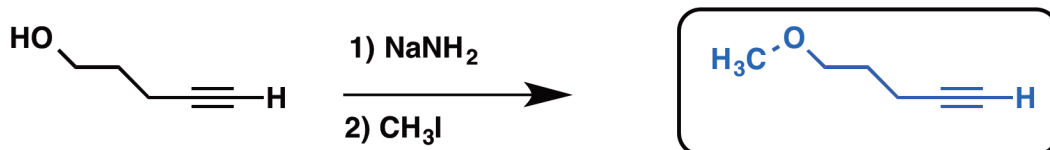
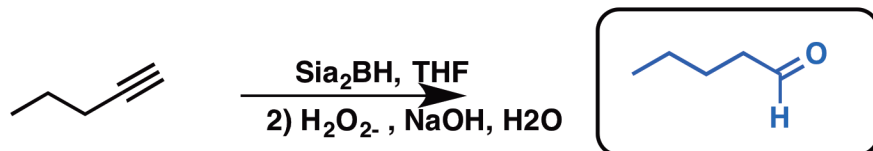
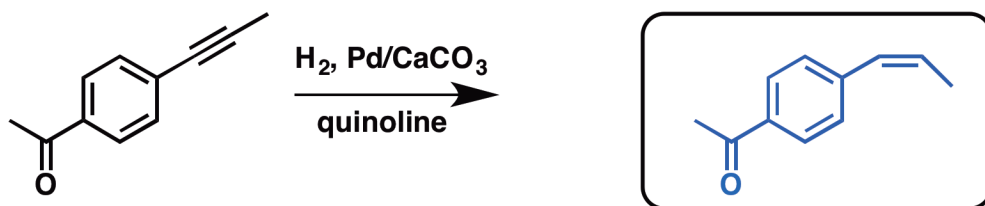
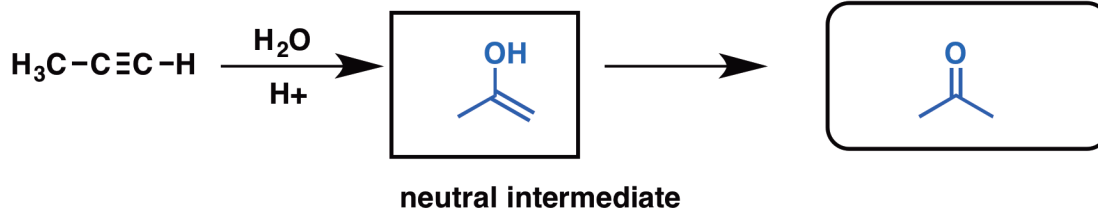
### Mechanism problem #2:

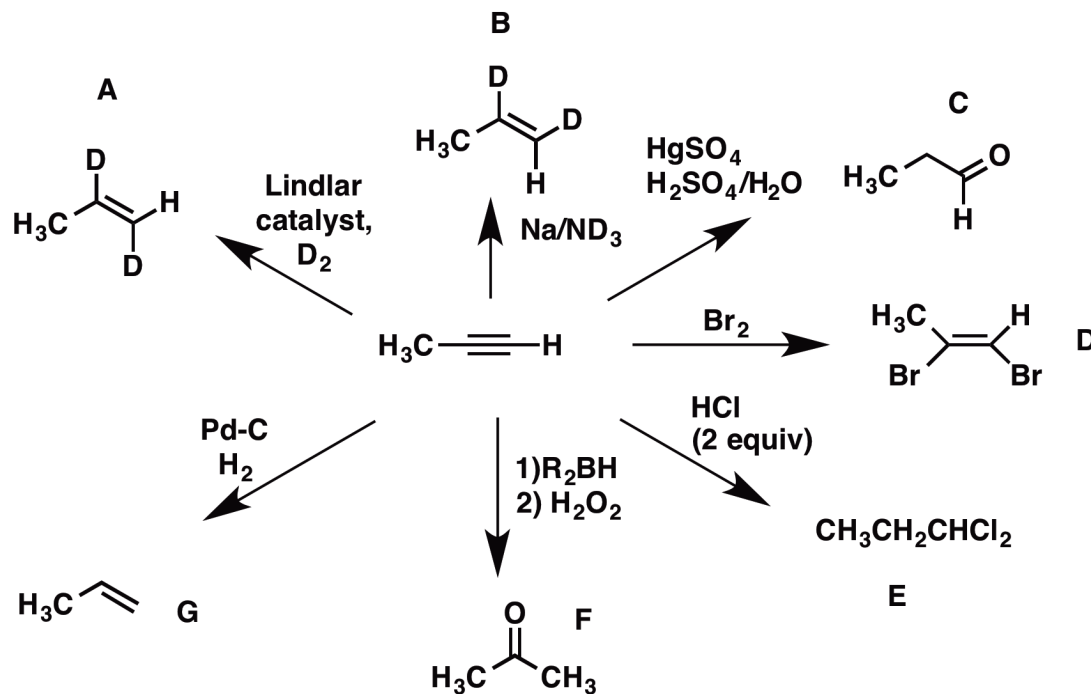
<https://bit.ly/3kOCu9X>



# Fill In The Blanks #4:

<https://bit.ly/3AS2cjd>



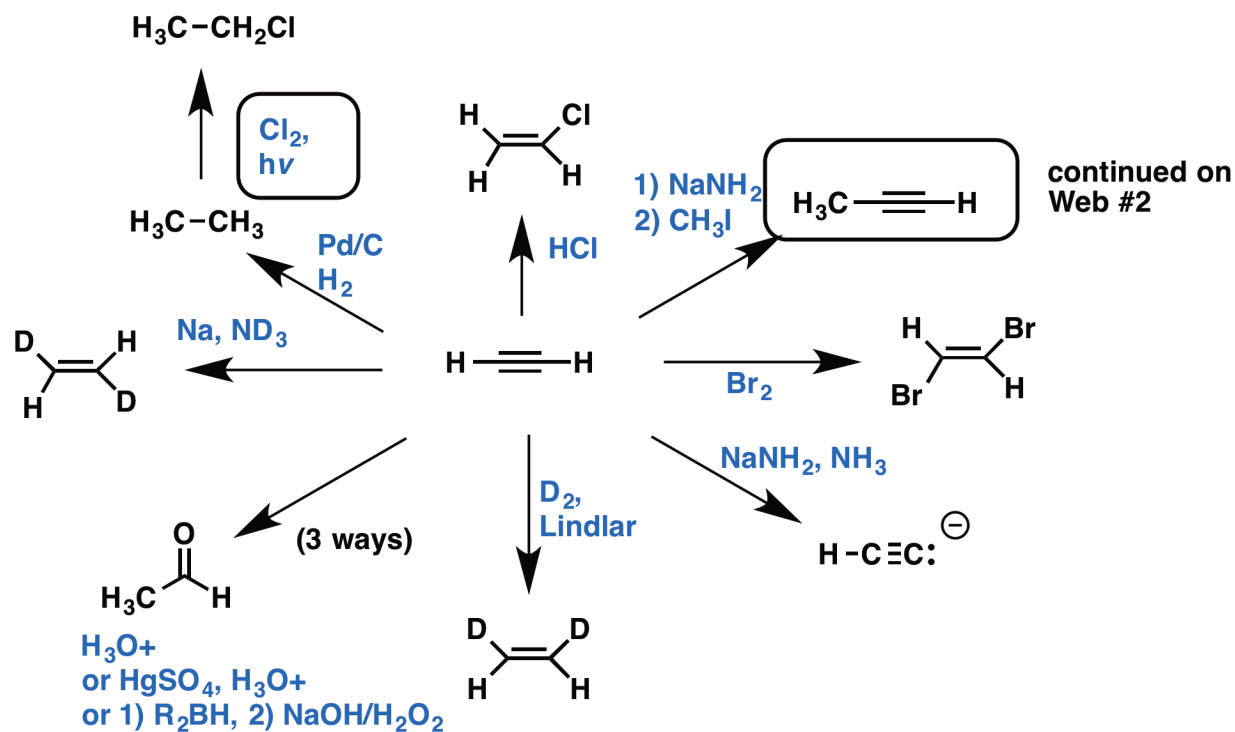


REACTION      1) Correct Product      2) Correct Reagent

A		Na, ND <sub>3</sub>
B		Lindlar catalyst, D <sub>2</sub>
C		1) R <sub>2</sub> BH 2) H <sub>2</sub> O <sub>2</sub>
D		No reagent exists!
E		No reagent exists!
F		HgSO <sub>4</sub> H <sub>2</sub> SO <sub>4</sub> /H <sub>2</sub> O
G		Lindlar catalyst, H <sub>2</sub>

## WEB OF REACTIONS: Question #1

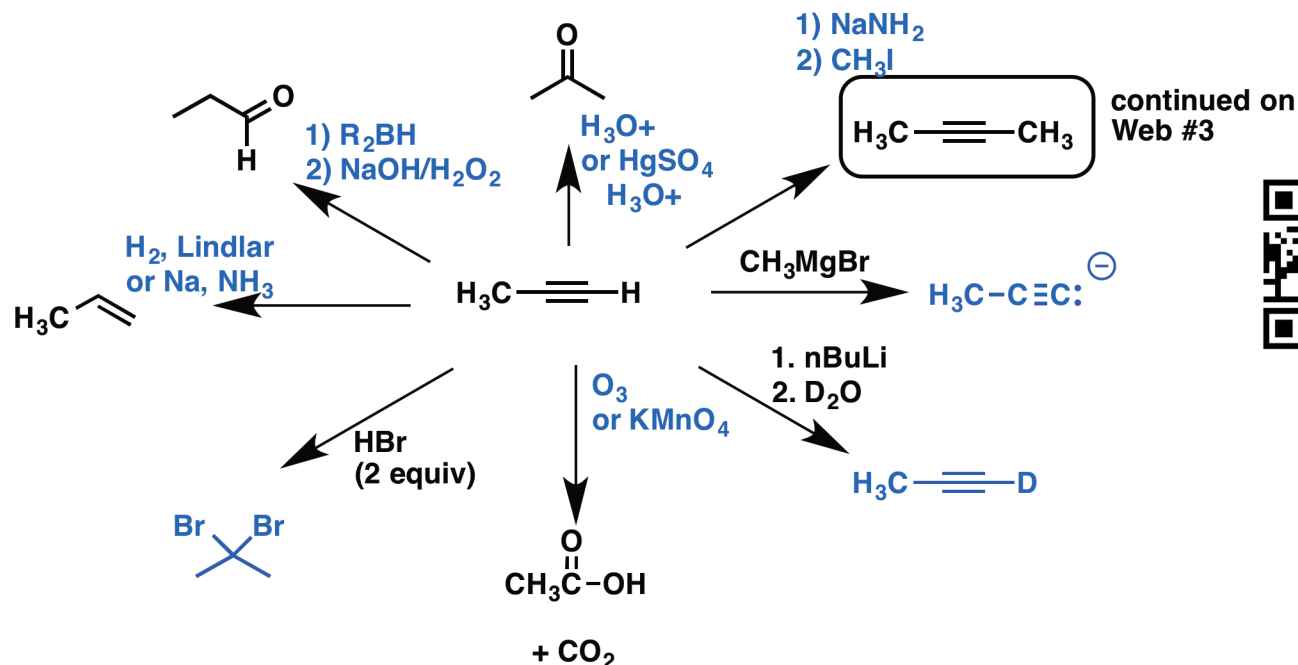
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continued on Web #2

## WEB OF REACTIONS: Question #2

<https://bit.ly/3ieWdxV>

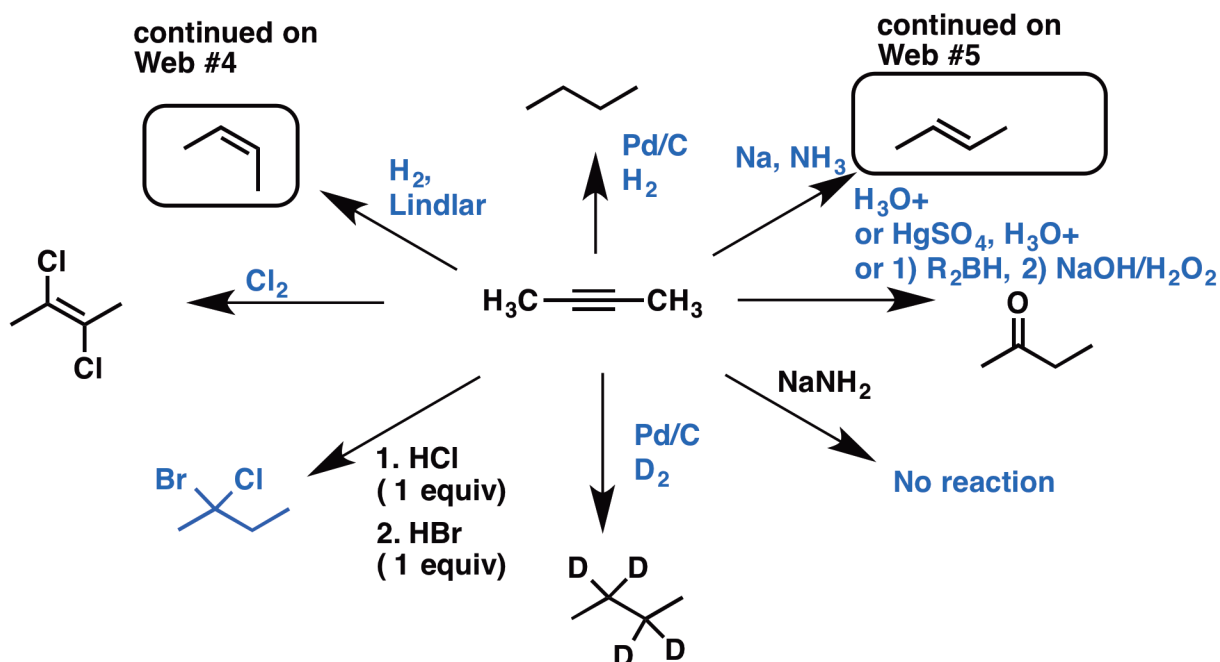


continued on Web #3



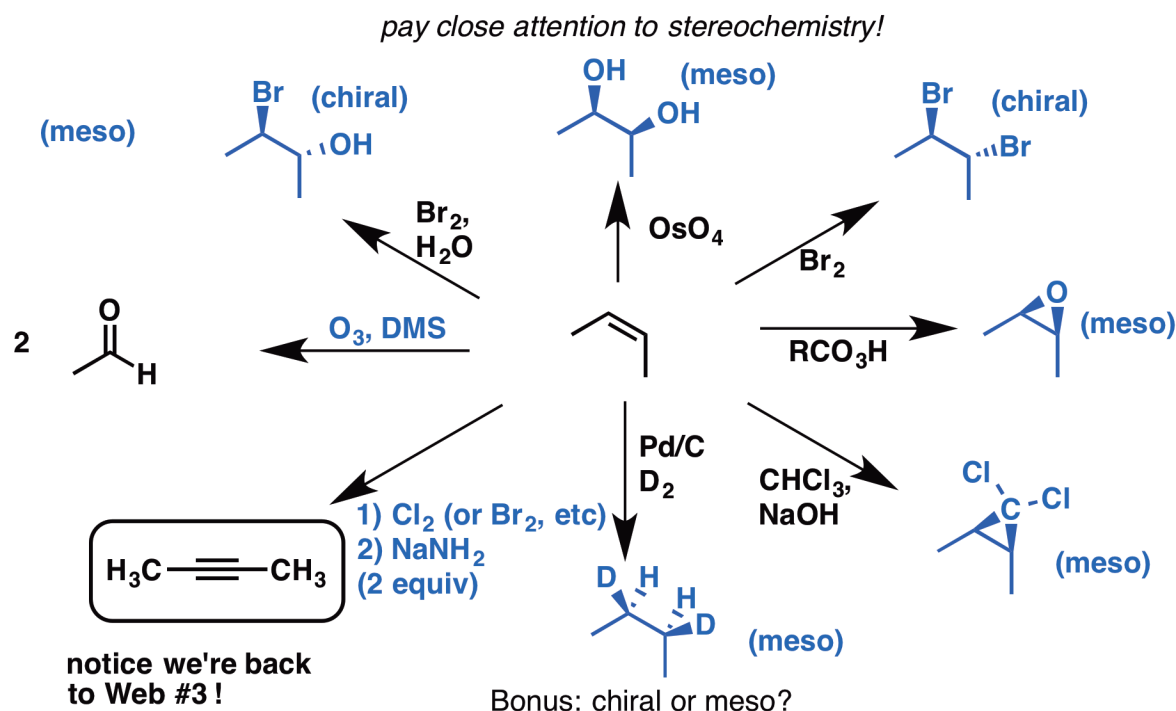
## WEB OF REACTIONS: Question #3

<https://bit.ly/3um8DZm>



## WEB OF REACTIONS: Question #4

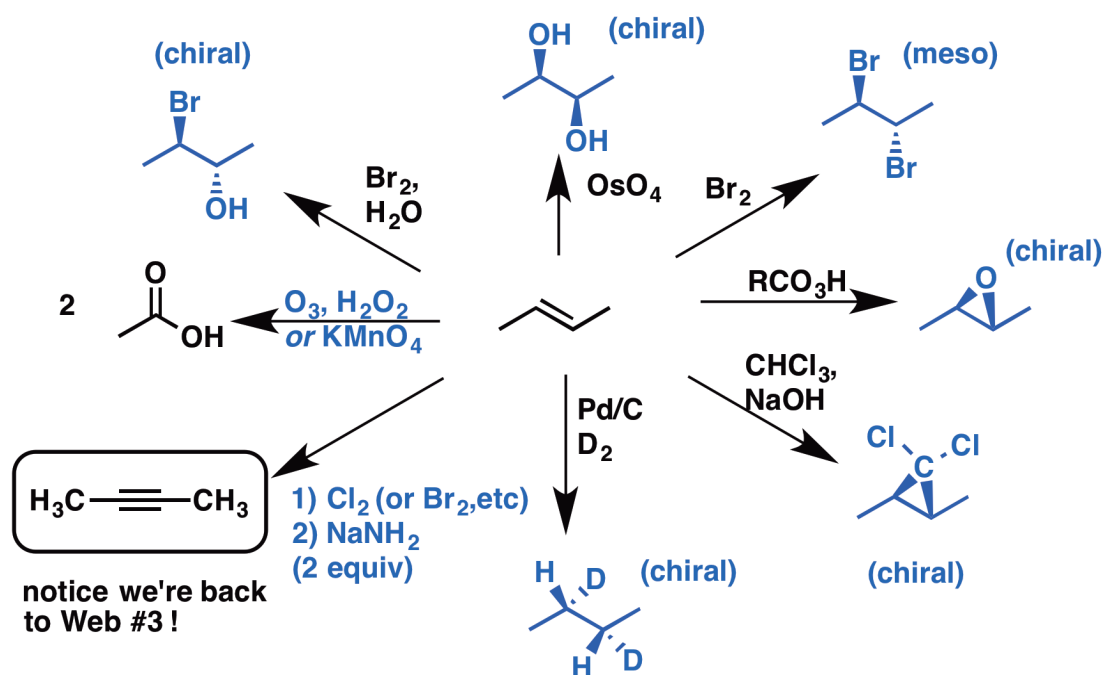
<https://bit.ly/3usmEol>



## WEB OF REACTIONS: Question #5

<https://bit.ly/3APbKLW>

pay close attention to stereochemistry!

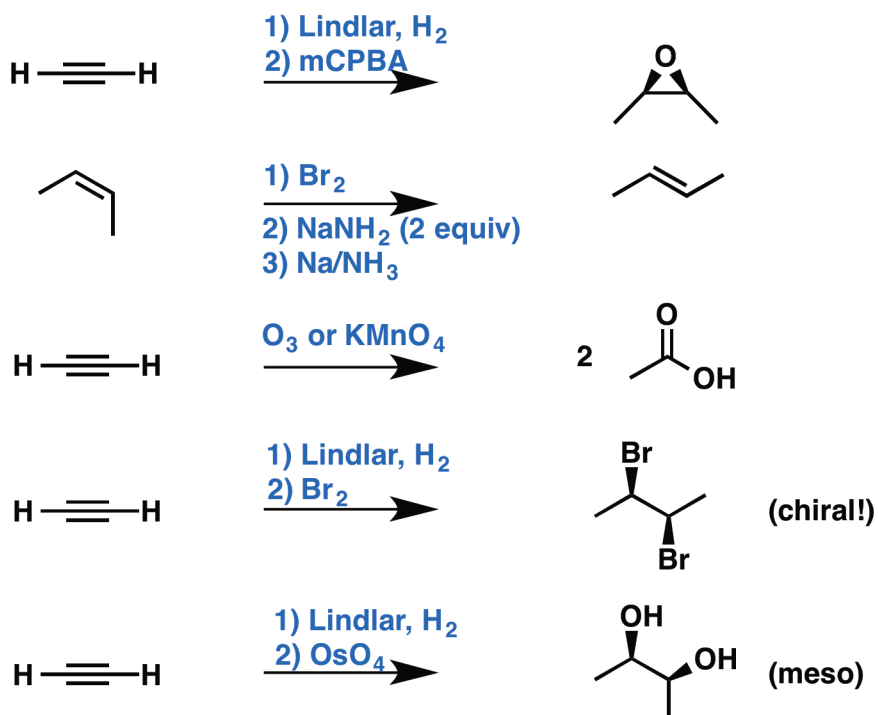


Bonus: chiral or meso?

Once you're done the Web Of Reactions...

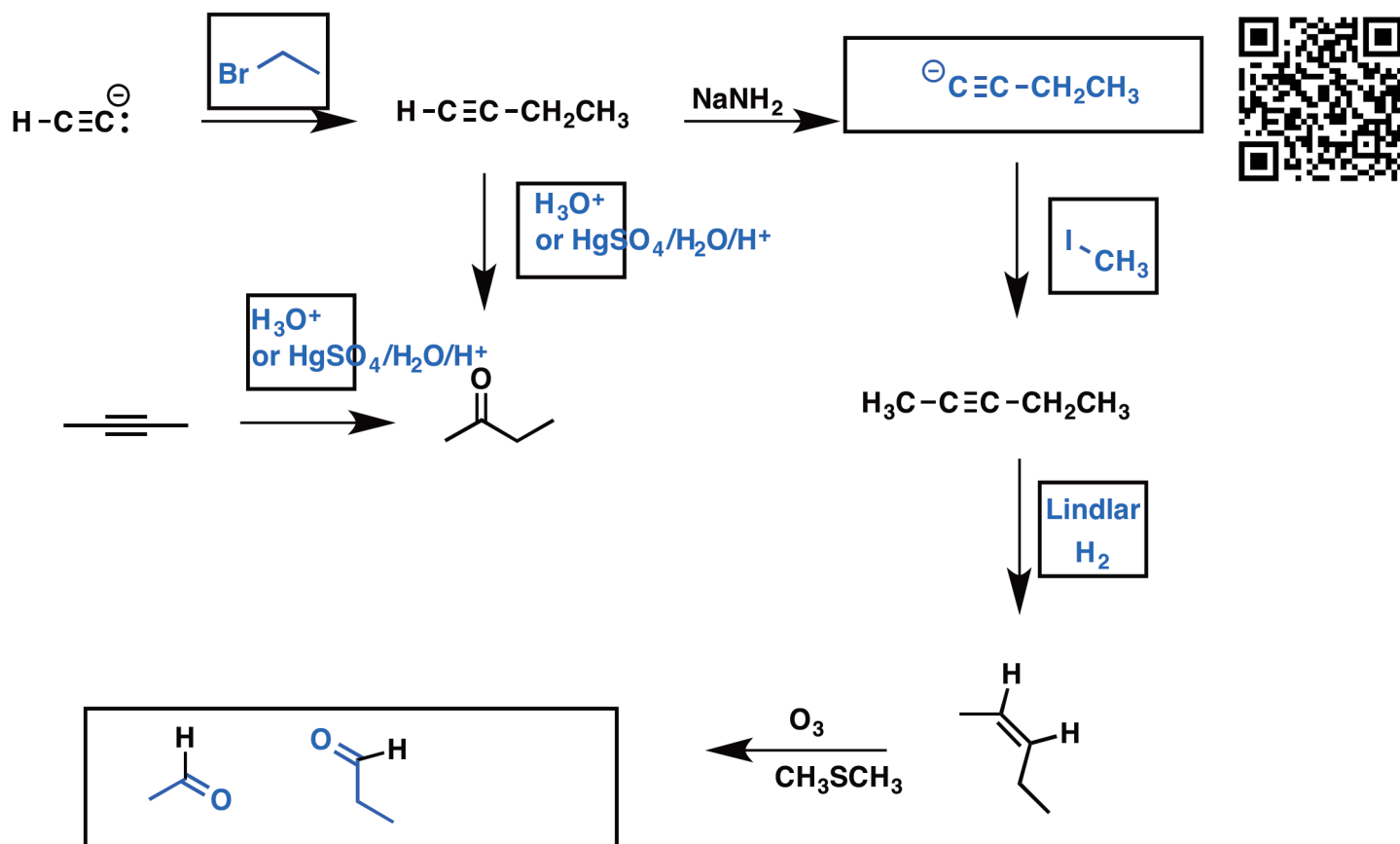
<https://bit.ly/39WOHD7>

Outline the following syntheses: if you are successful, you are ready for synthesis!



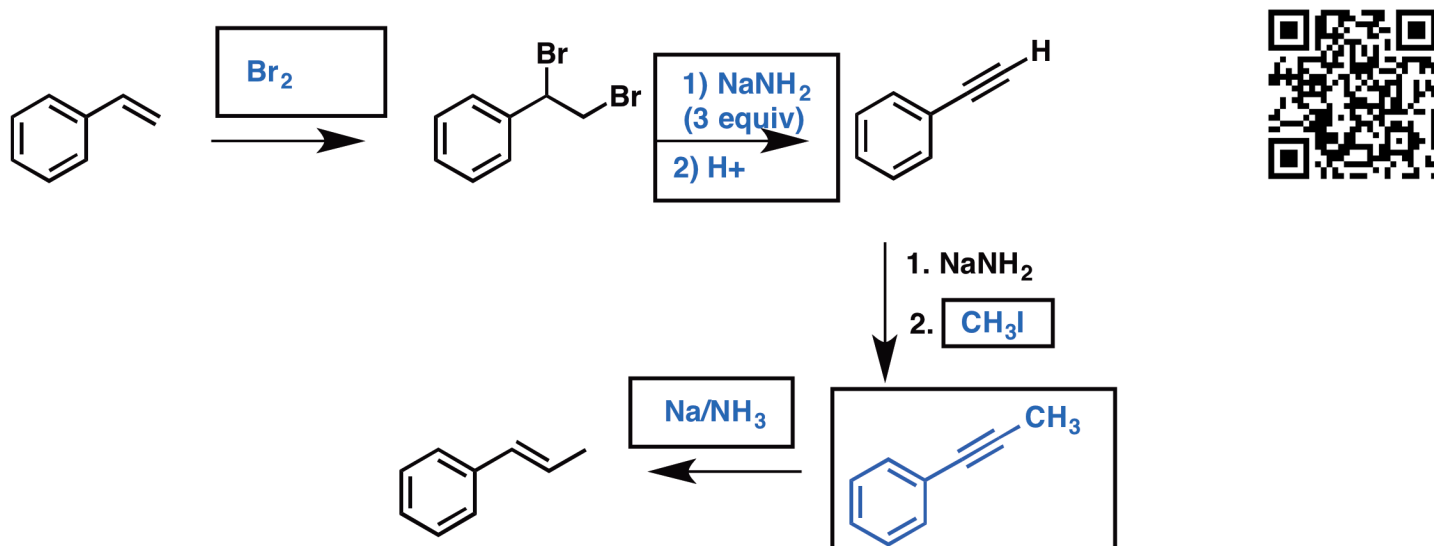
## Road Map #1

<https://bit.ly/3m0q8Le>



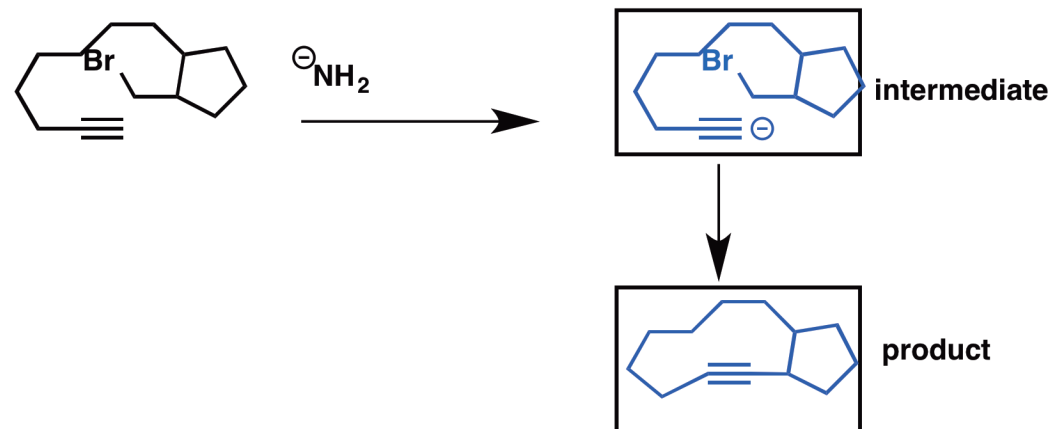
## Road Map #2

<https://bit.ly/3kRg3kx>



## Mini Roadmap #1

<https://bit.ly/39IZINV>



## Mini Roadmap #2

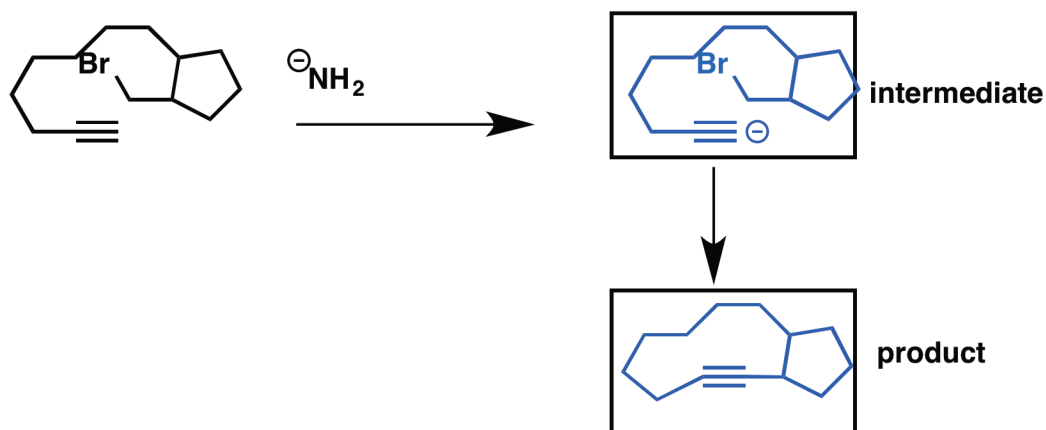


## Synthesis

Show how you would perform the following transformations:

<https://bit.ly/3ulcLci>

a)



b)

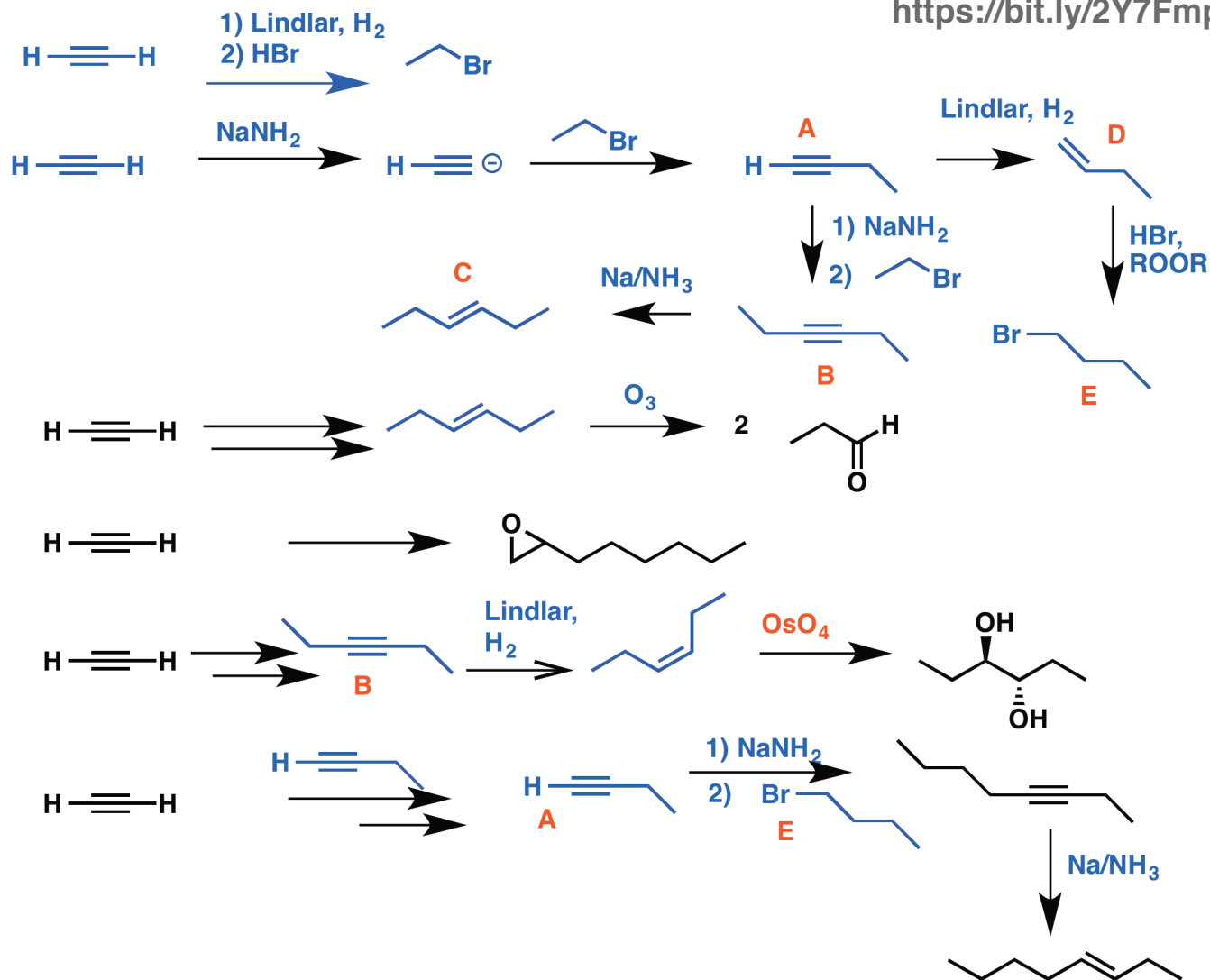
Show a reaction that would make this in one step from an acetylide and an alkyl halide

c)



**Starting from acetylene as the carbon source and any reagents of your choice, how would you make each of the following molecules?**

<https://bit.ly/2Y7FmpQ>



<https://bit.ly/3uklk5Q>



<https://bit.ly/3iecK50>



<https://bit.ly/3AQ7Gv9>



<https://bit.ly/3m6kfw0>

