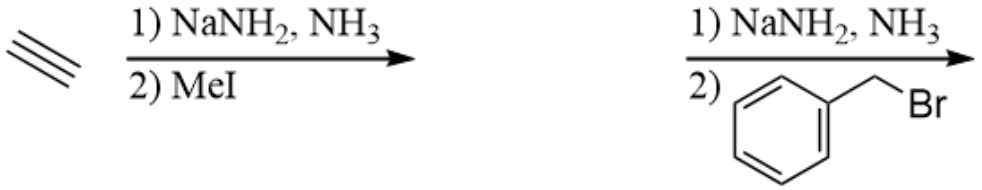
Predict the products, provide a mechanism and determine direction of equilibrium. **A R I O**

1

carbide lamp: $CaC_2 + H_2O \rightleftharpoons$

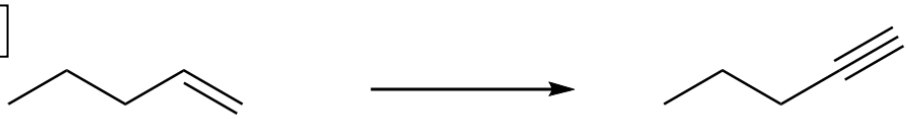
2

Predict the major product formed after each set of reagents.



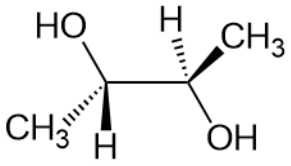
Which reagents would be best to achieve the following synthesis?

3



4

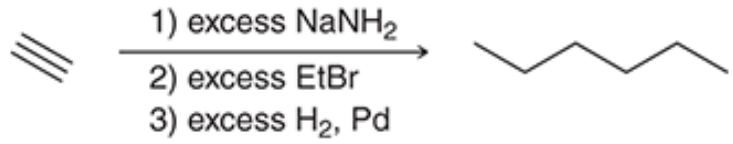
propyne →



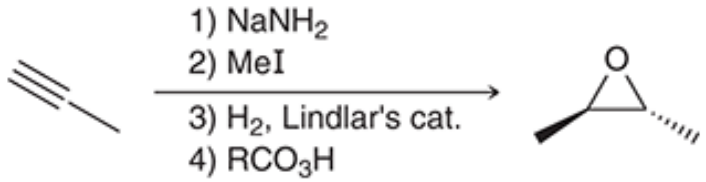
5 9.57 Each of the following synthetic transformations has a fatal flaw and the desired target molecule would not be produced. Identify the error in each synthesis and explain why the synthesis fails.

(Klein 4th ed.)

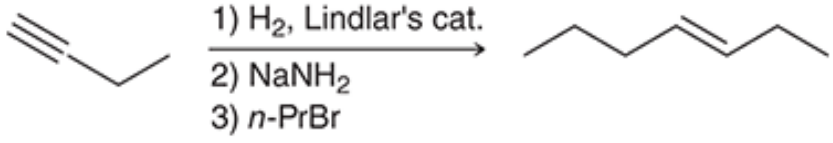
a.



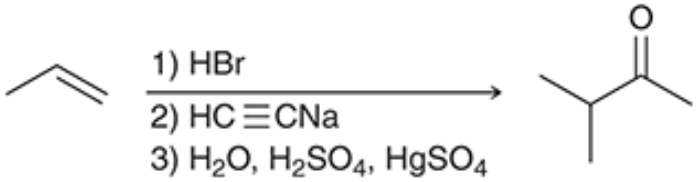
b.



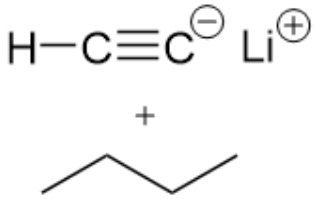
c.

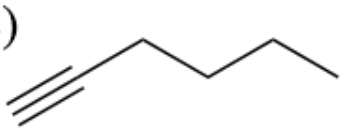


d.



1 Predict the major product(s) and determine direction of equilibrium.

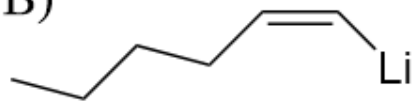
A) 

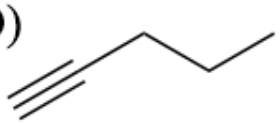
C) 

A) Forward

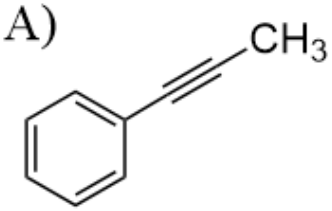
B) Reverse

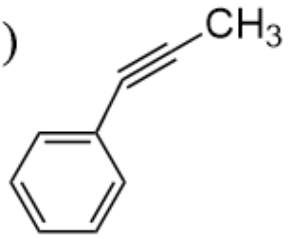
C) Neither

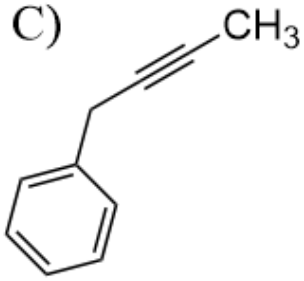
B) 

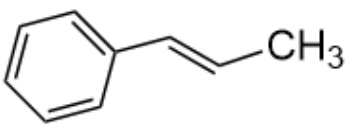
D) 

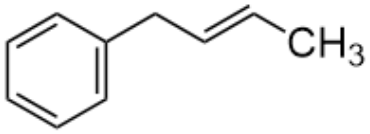
2 Predict the major product formed after each set of reagents.

A) 

B) 

C) 

D) 

E) 

3 Which reagents would be best to achieve the following synthesis?

A) 1) HBr
2) HC≡CNa

C) 1) HBr, ROOR
2) HC≡CNa

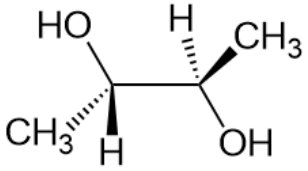
B) 1) Br_2
2) xs $NaNH_2$
3) H_2O

D) 1) $KMnO_4$
2) xs $NaNH_2$
3) H_2O

Which reagents would be best to achieve the following synthesis?

4

propyne



A) 1) Na, NH_3
2) $KMnO_4$

C) 1) H_2, Lindlar's cat.
2) $KMnO_4$

B) 1) $NaNH_2$
2) MeI
3) Na, NH_3
4) $KMnO_4$

D) 1) $NaNH_2$
2) MeI
3) H_2, Lindlar's cat.
4) $KMnO_4$