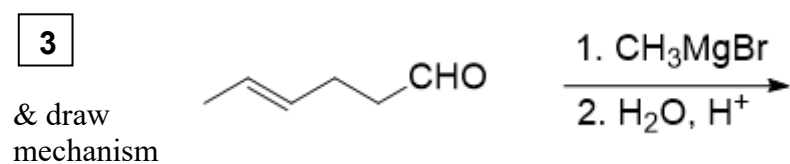
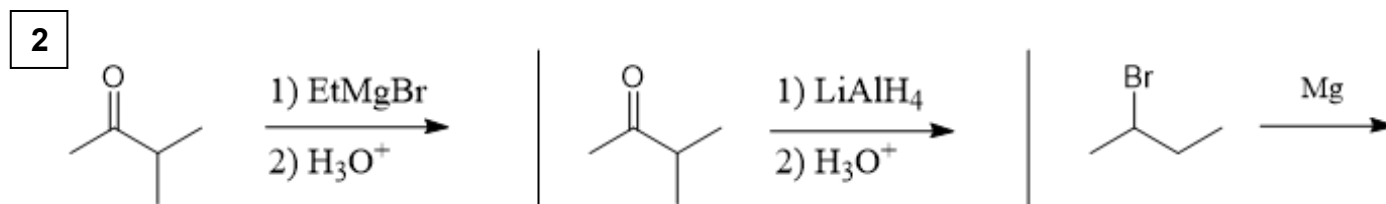
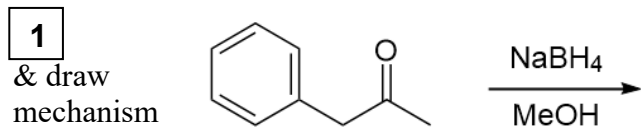
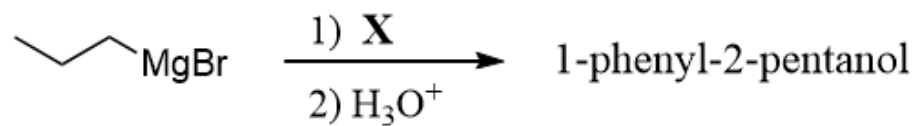




Predict the major product for the following reactions (or write N/R for No Reaction):

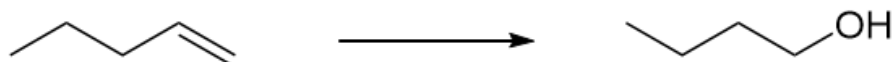


4 Identify compound **X**, to complete the following synthesis.



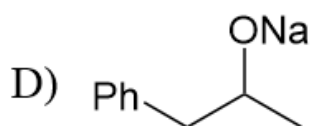
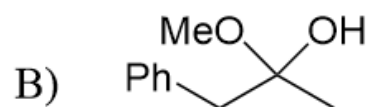
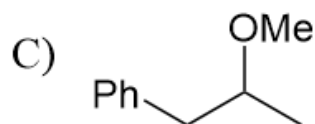
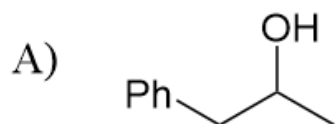
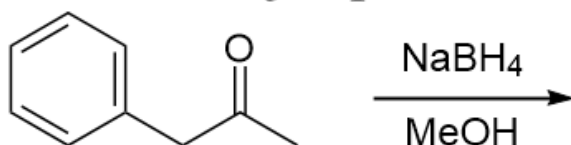
5

Which reagents would be best to achieve the following synthesis?



Predict the major product.

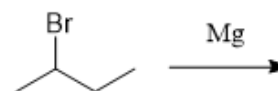
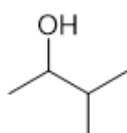
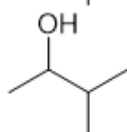
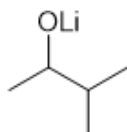
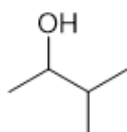
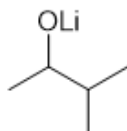
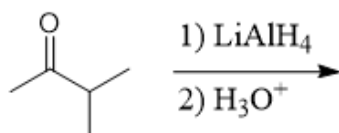
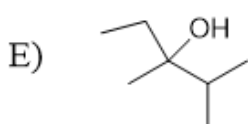
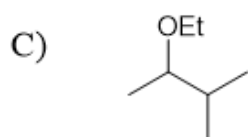
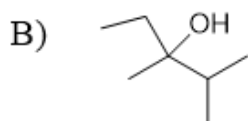
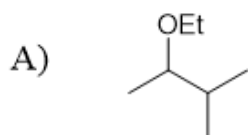
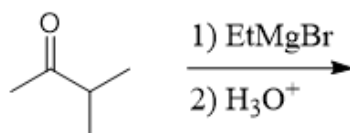
1



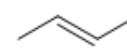
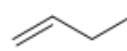
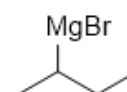
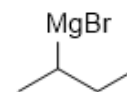
E) No Reaction

2

Predict the major products for the following reactions.

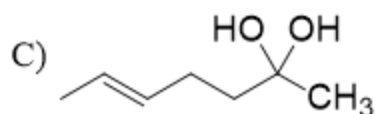
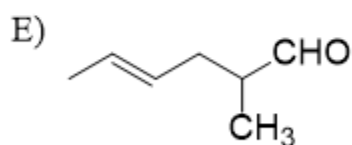
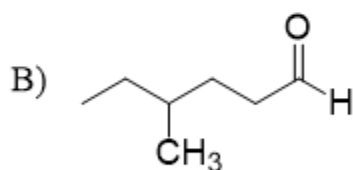
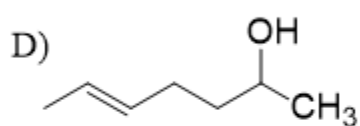
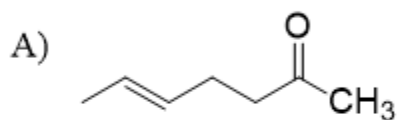
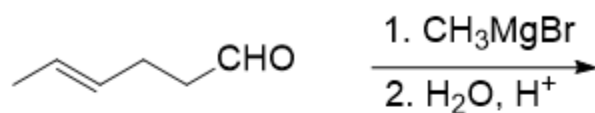


No Reaction

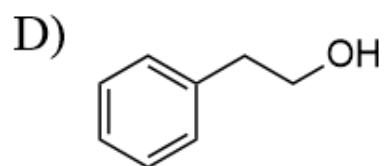
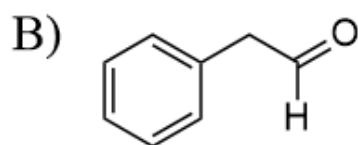
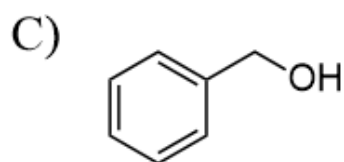
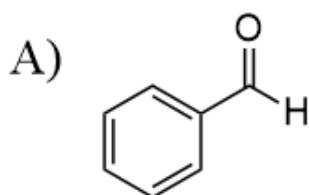
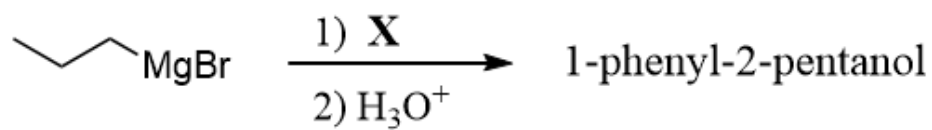


3

Predict the major product.

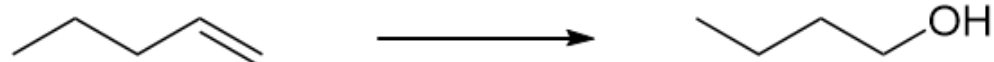


4

Identify compound **X**, to complete the following synthesis.

5

Which reagents would be best to achieve the following synthesis?



- A) 1)  $\text{O}_3$   
2)  $\text{Zn}, \text{H}_2\text{O}$   
3)  $\text{NaBH}_4, \text{CH}_3\text{OH}$
- B) 1)  $\text{HBr}$   
2)  $\text{NaOH}$
- C) 1)  $\text{Hg}(\text{OAc})_2, \text{H}_2\text{O}$   
2)  $\text{NaBH}_4$
- D) 1)  $\text{BH}_3\text{-THF}$   
2)  $\text{H}_2\text{O}_2, \text{NaOH}$