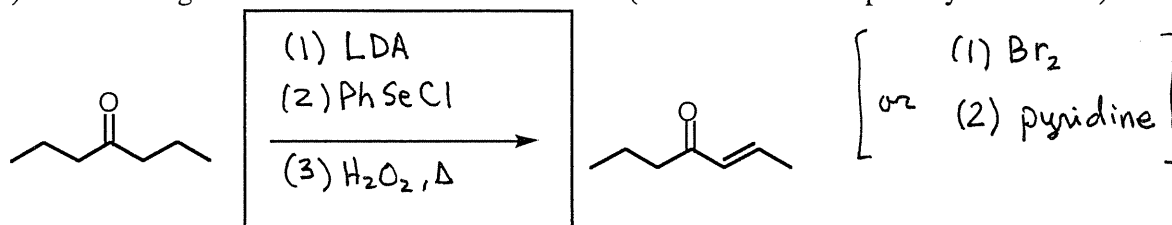
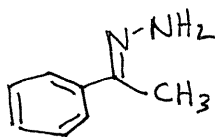


(1) (1 pt) Provide reagents for the transformation below (more than one step many be needed).

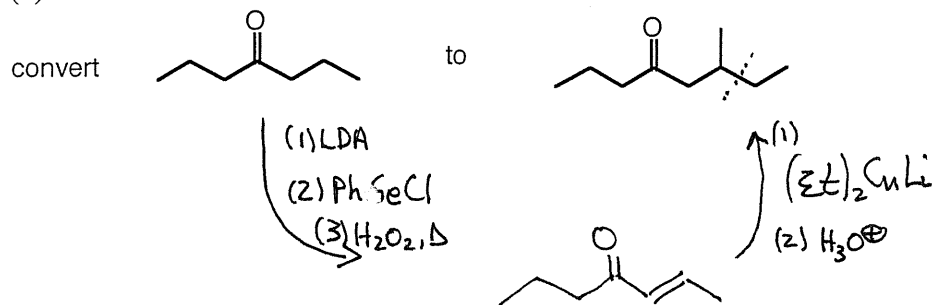


(2) (1 pt) Write the hydrazone intermediate formed in the Wolff-Kishner reduction of acetophenone.

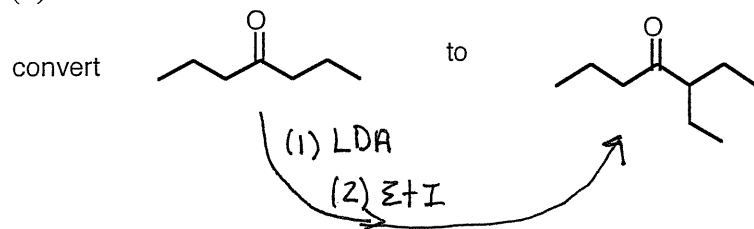


(3) (5 pts) Provide a reaction sequence to accomplish the following syntheses.

(a)



(b)



(c)

starting with malonic ester, prepare:

