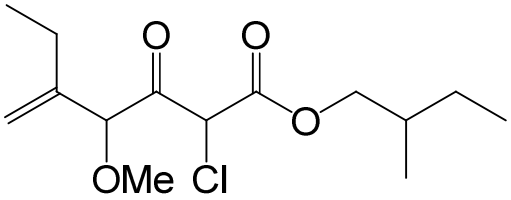
Spring 2017 - Homework 2 (Due on December 1, 2017 at the beginning of the class, no late return, no exam under my office door allowed)

NAME_____

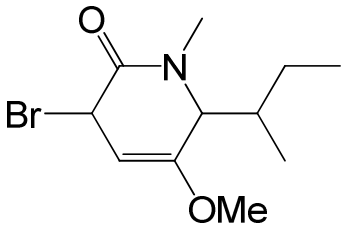
1. Name the following compounds (6 x 2 = 12 pts)

(a)



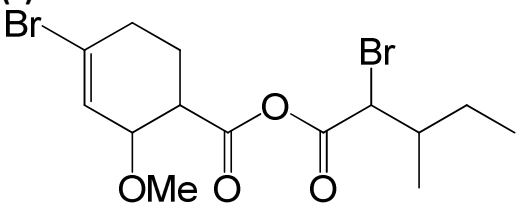
(2-methylbutyl) 2-chloro-5-ethyl-4-methoxy-3-oxohex-5-enoate
Or
***Sec*-pentyl 2-chloro-5-ethyl-4-methoxy-3-oxohex-5-enoate**

(b)



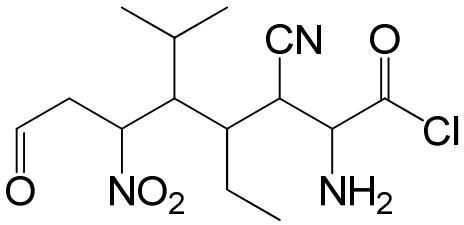
5-amino-2-bromo-4-methoxy-6,*N*-dimethyloct-3-enoic acid lactam

(c)



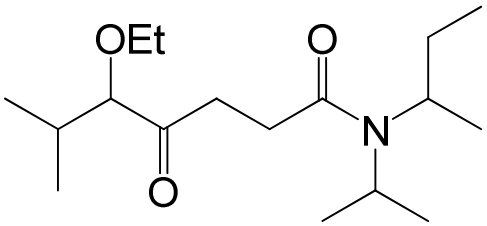
4-bromo-2-methoxycyclohex-3-enecarboxylic 2-bromo-3-methylpentanoic anhydride

(d)



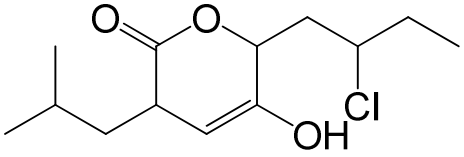
2-amino-3-cyano-4-ethyl-5-isopropyl-6-nitro-8-oxooctanoyl chloride

(e)



***N*-sec-butyl-5-ethoxy-*N*-isopropyl-6-methyl-4-oxoheptanamide**

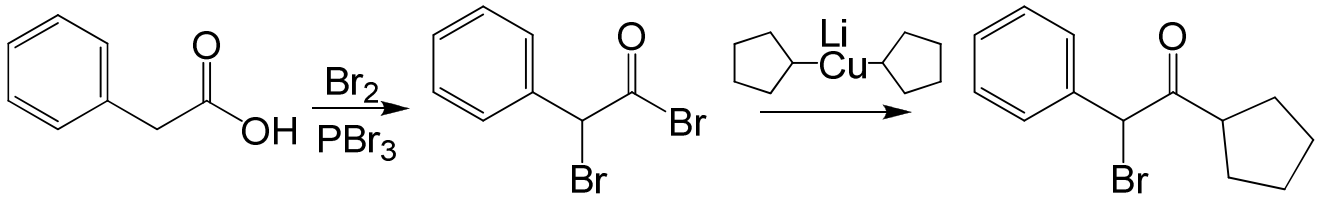
(f)



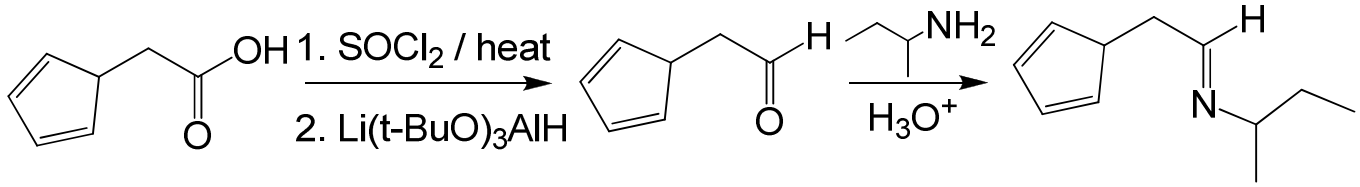
7-chloro-4,5-dihydroxy-2-isobutylnon-3-enoic acid lactone

2. Predict the product(s) obtained from the following reactions (2 x 12 = 24 pts)

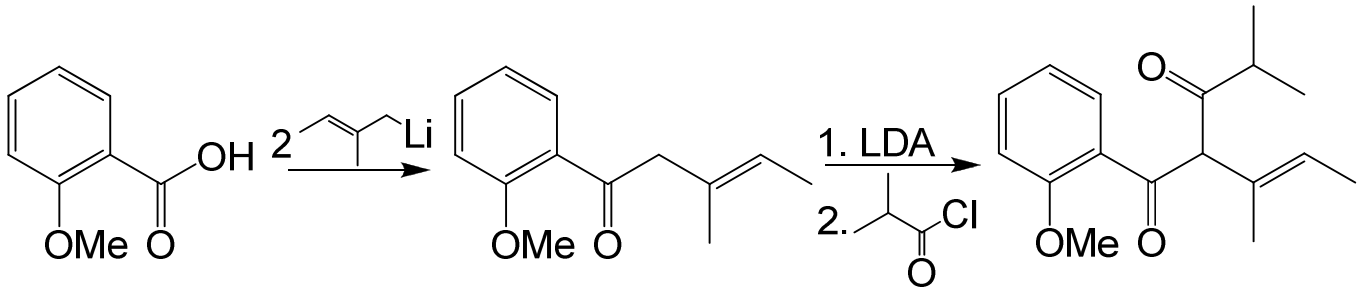
(a)



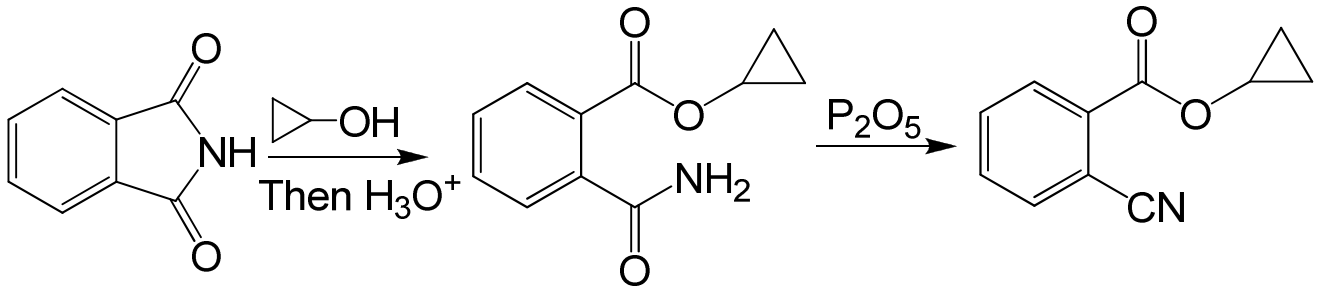
(b)



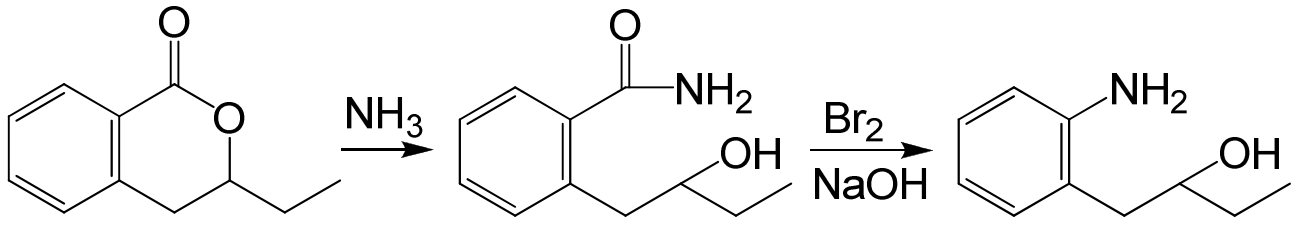
(c)



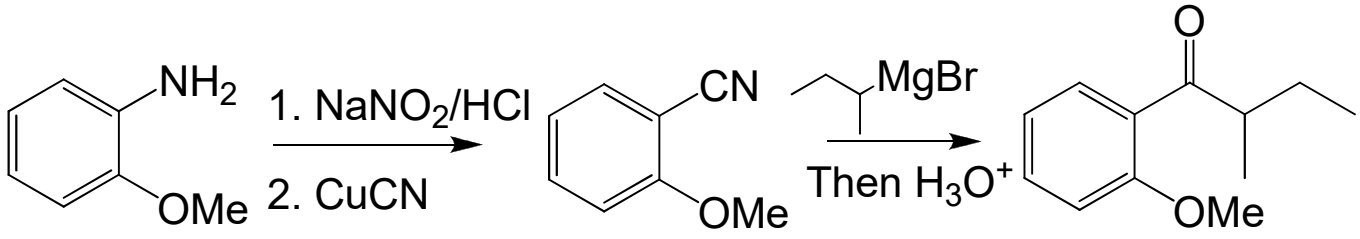
(d)



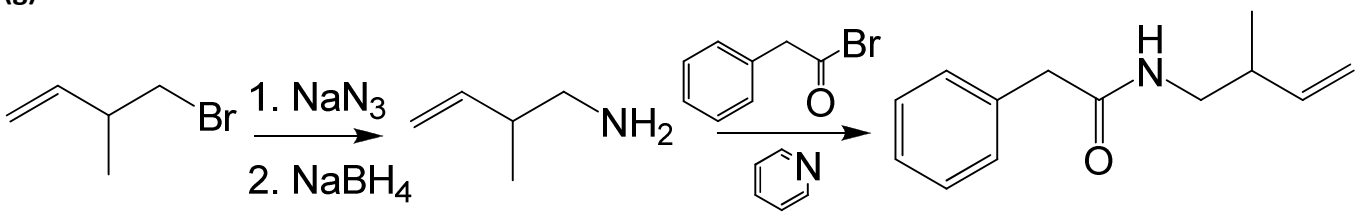
(e)



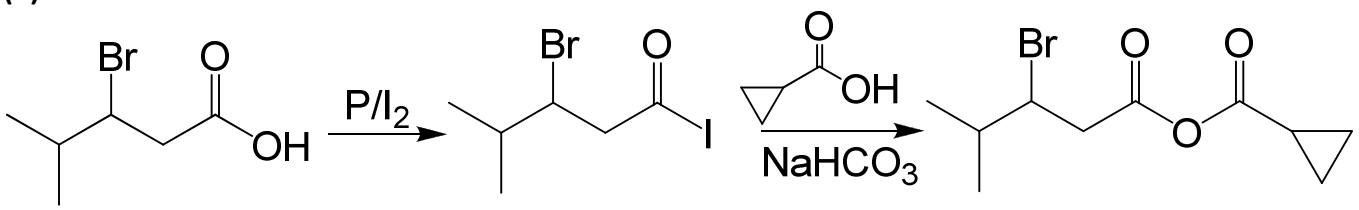
(f)



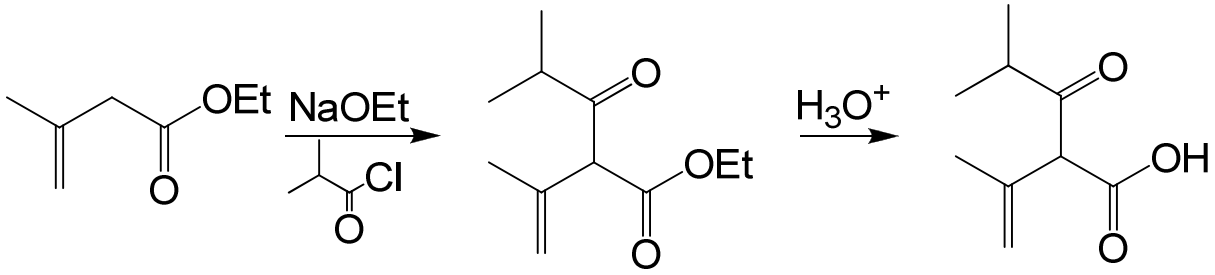
(g)


Br
1. NaN3
2. NaBH4
NH2
Br
O
N
H
N
O

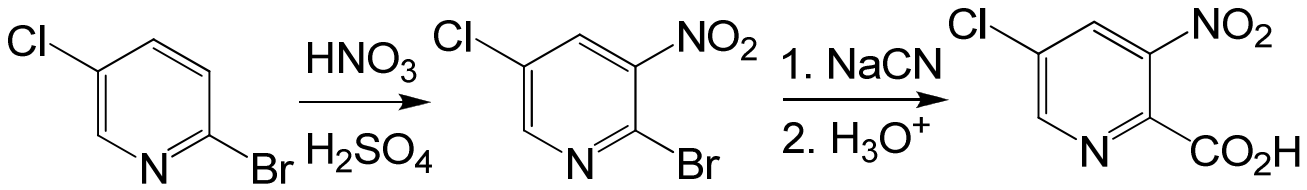
(h)


Br
O
OH
P/I2
Br
O
I
O
OH
NaHCO3
Br
O
O
O

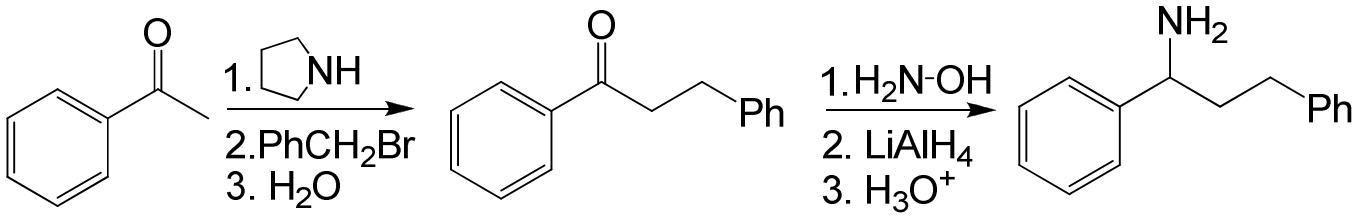
(i)


OEt
O
NaOEt
Cl
O
O
OEt
O
H3O+
O
OH
O

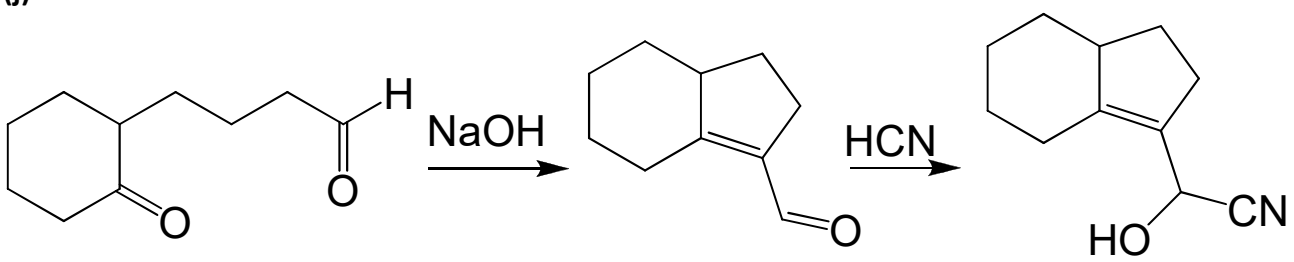
(j)


Cl
N
Br
HNO3
H2SO4
Cl
NO2
N
Br
1. NaCN
2. H3O+
Cl
NO2
N
CO2H

(k)

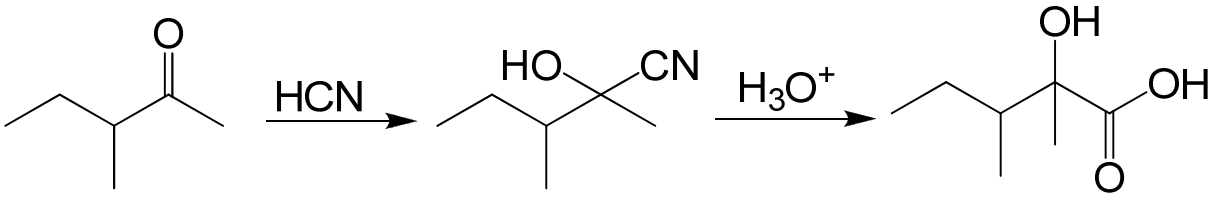

O
1.
NH
2.PhCH2Br
3. H2O
O
Ph
1.H2N-OH
2. LiAlH4
3. H3O+
NH2
Ph

(j)

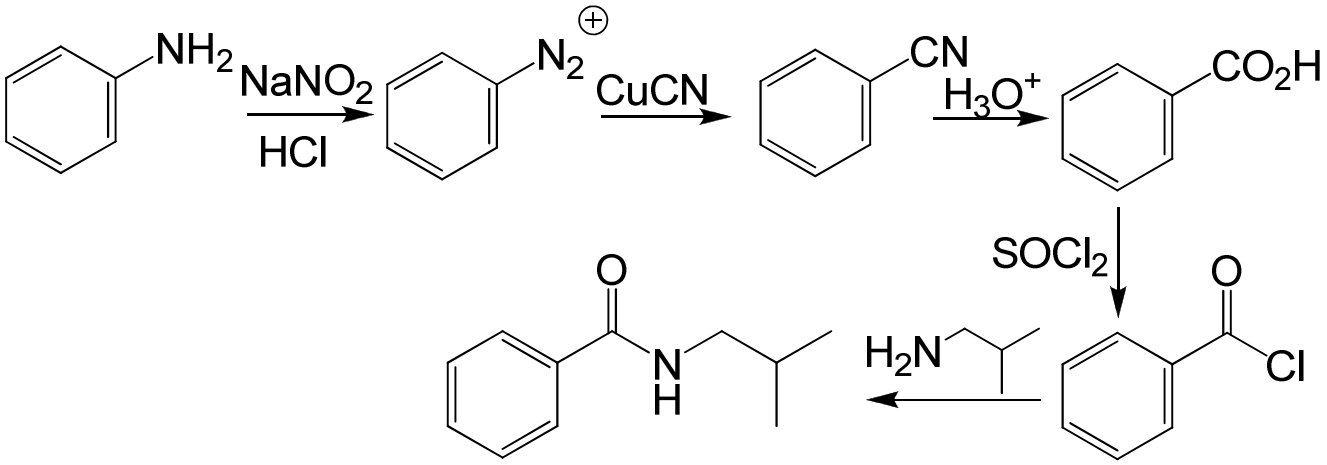

H
O
O
NaOH
O
HCN
HO
CN

3 Show how you would synthesize each of the following compounds from the given starting materials (you must show all the intermediates to receive full credit) (4 x 2 = 8 pts)

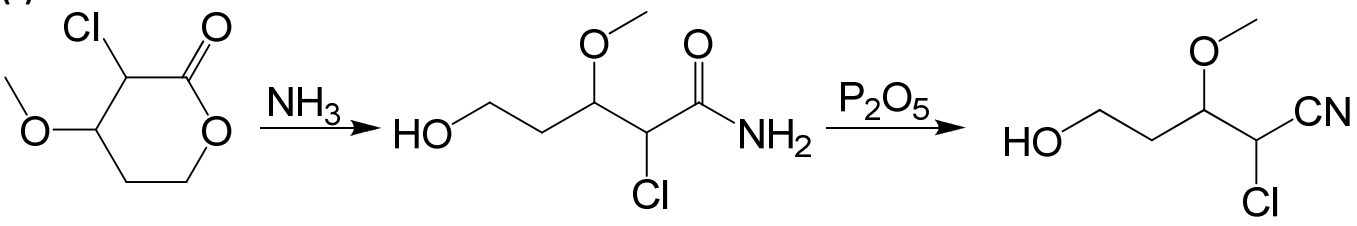
(a)



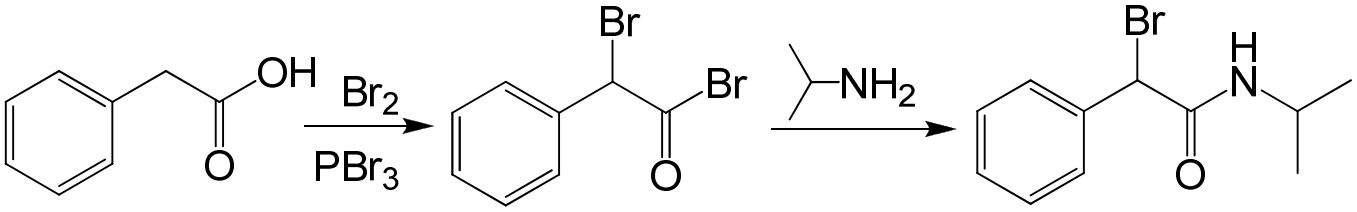
(b)



(c)

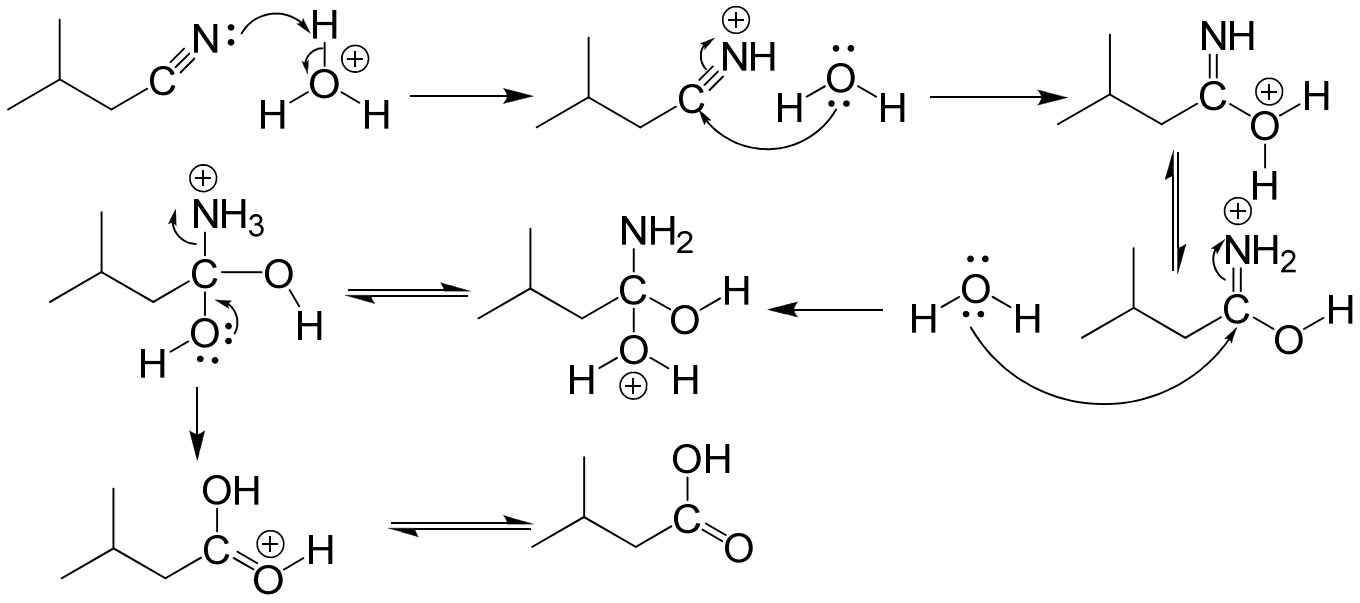


(d)

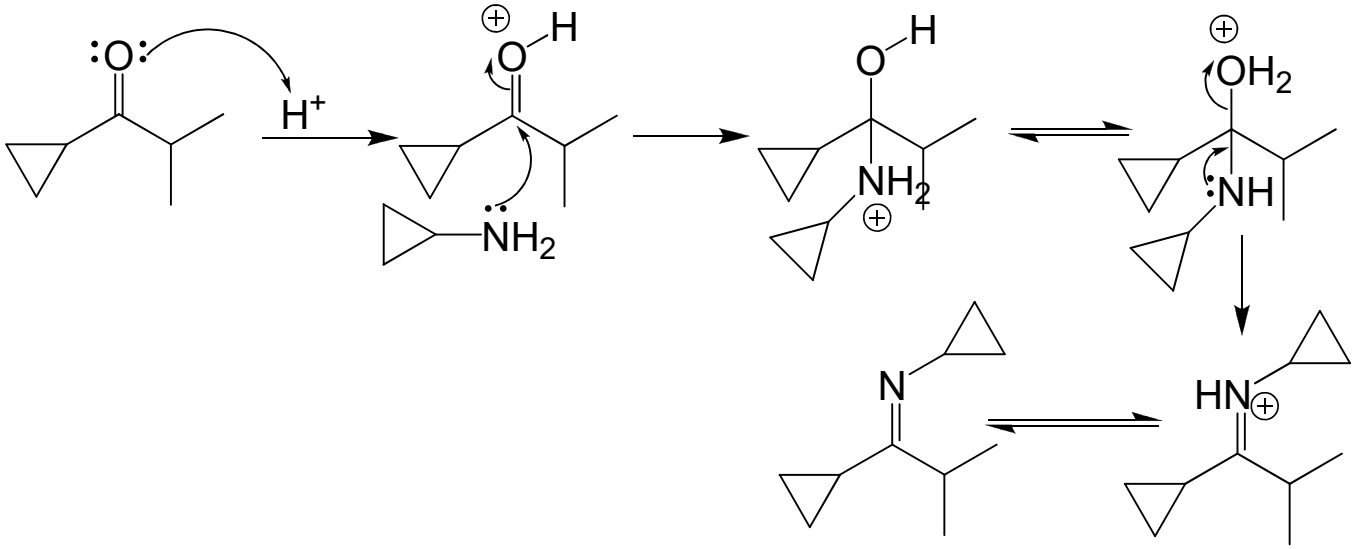


4. Propose a mechanism consistent with the following reactions (you must show all the intermediates and arrows indicating the electron flow to receive full credit) (3 x 2 = 6 pts)

(a)



(b)



(c)