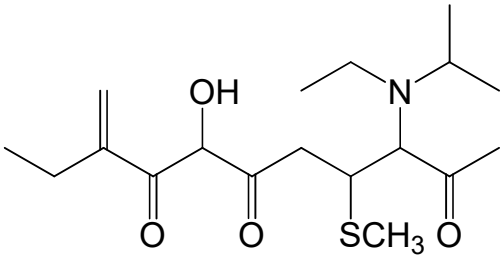
CHEM 266 – EXAM 3 (SPRING 2018) **NAME**_____

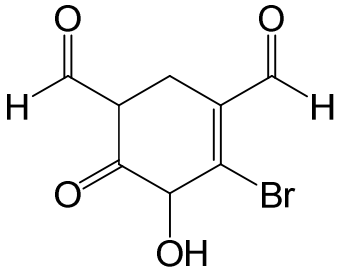
Wednesday April 25, 2018

1. Name the following compounds (3 x 8 = 24 pts)

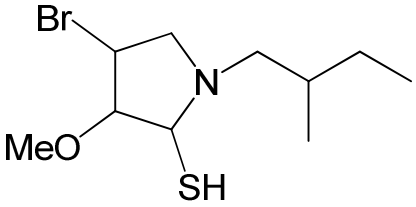
(a)



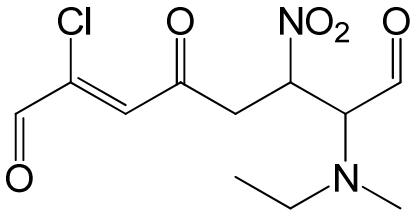
(b)



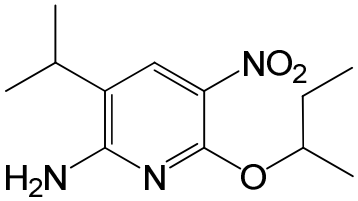
(c)



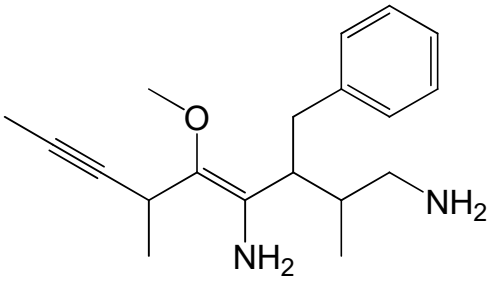
(d)



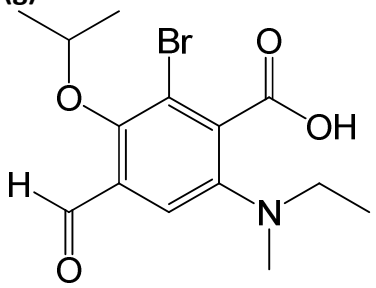
(e)



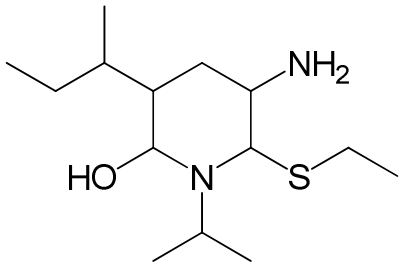
(f)



(g)

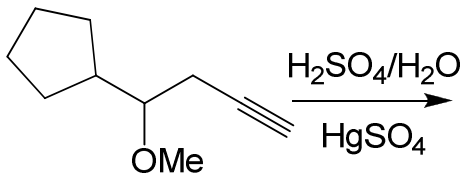


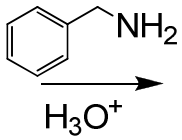
(h)



2. Predict the major product(s) expected from the following reactions (3 x 16 = 48 pts)

(a)





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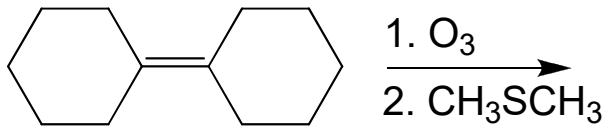
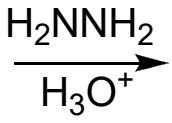
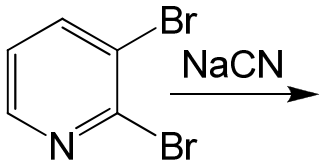
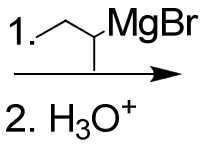


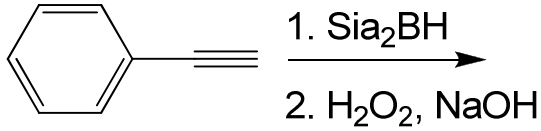


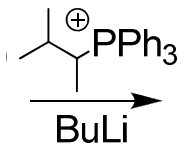
(c)





(d)





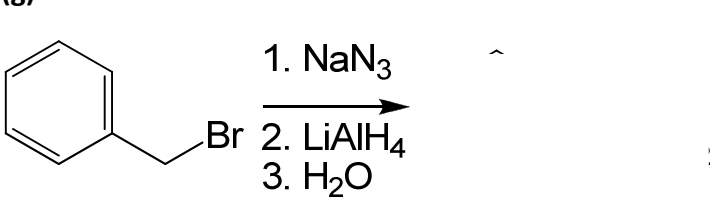
(e)


O
NH
1. KOH
2.
Br
O
H_2NNH_2
heat

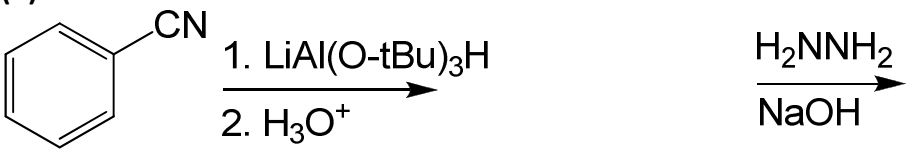
(f)


Cl
O
NH_3
Br_2, NaOH
Heat

(g)


Br
1. NaN_3
2. $LiAlH_4$
3. H_2O
O
Cl
$NaHCO_3$

(h)


CN
1. $LiAl(O\text{-}tBu)_3H$
2. H_3O^+
H_2NNH_2
NaOH

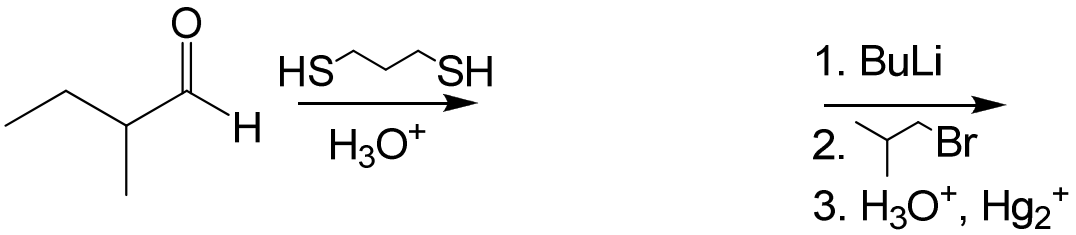
(i)


CN
1. $LiAlH_4$
2. H_3O^+
1. CH_3I
2. Ag_2O, H_2O
Heat

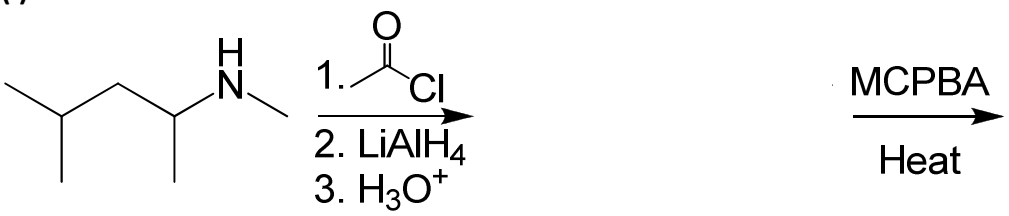
(j)


O
N
Br
HNO_3
H_2SO_4
H_2NOH
H_3O^+

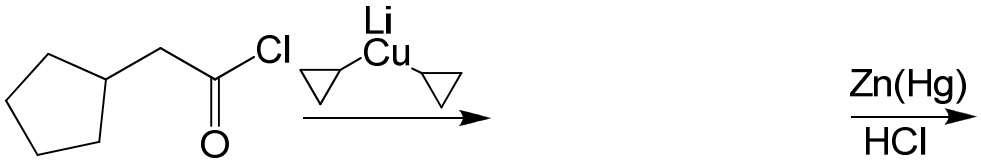
(k)


O
H
HS
SH
H_3O^+
1. BuLi
2.
Br
3. H_3O^+, Hg_2^+

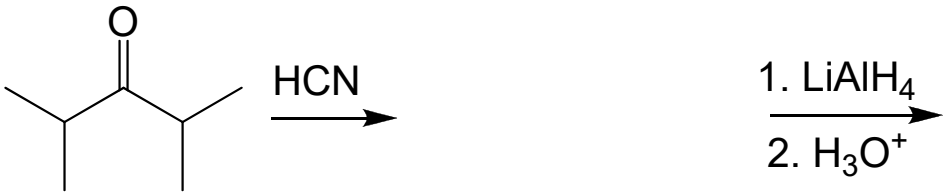
(l)



(m)



(n)

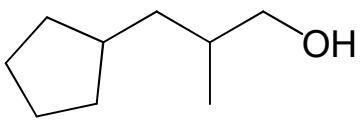


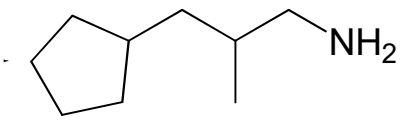
(p)

(q)

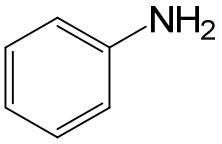
3. Show how you would synthesize each of the following compounds from the given starting material(s). You **must** show all the intermediates to receive full credit (3 x 6 = 18 pts)

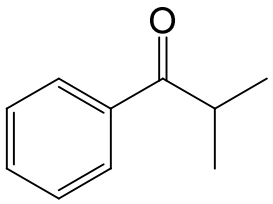
(a)



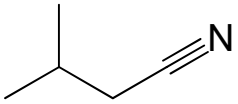


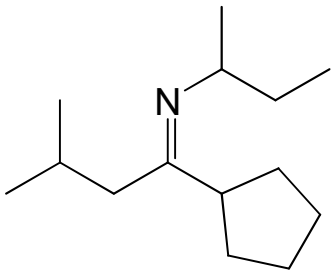
(b)



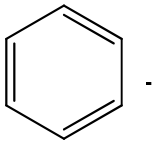


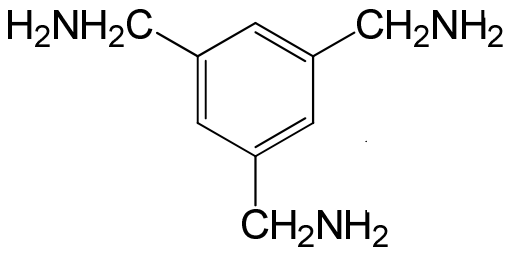
(c)



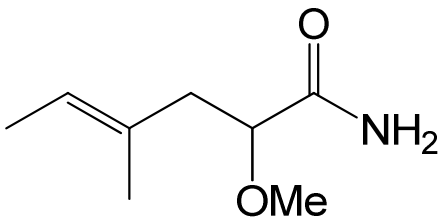


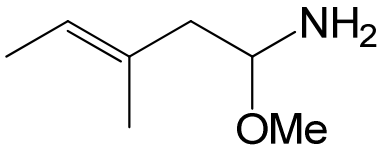
(d)



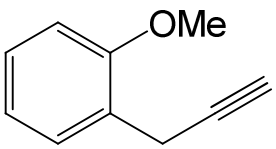


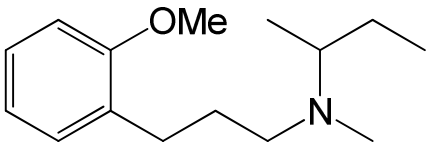
(e)





(f)





4. Propose a mechanism consistent with the following reactions (you must show all the intermediates to receive full credit) (3.5 x 3 = 10.5 pts)

(a)

(b)

(c)