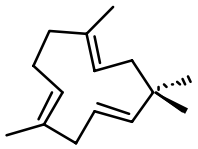
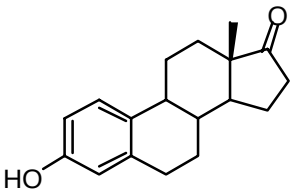
Answer Key for Problem Set 5

1.



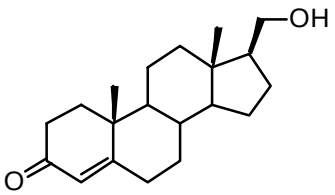
humulene

TERPENE



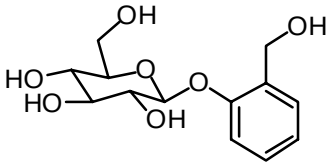
estrone

STEROID, ESTROGEN



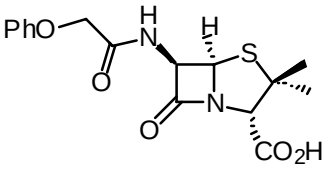
homotestosterone

STEROID, ANDROGEN



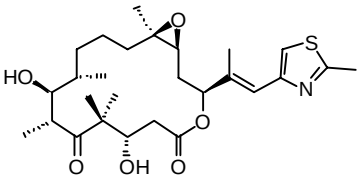
salicilin

CARBOHYDRATE



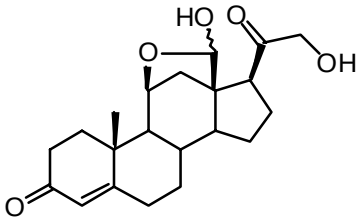
penicillin

β-LACTAM ANTIBIOTIC



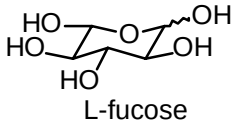
epothilone B

POLYKETIDE



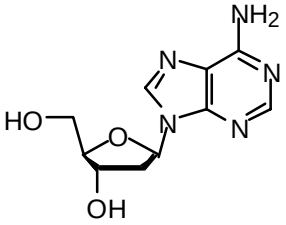
aldosterone

STEROID, CORTICOID



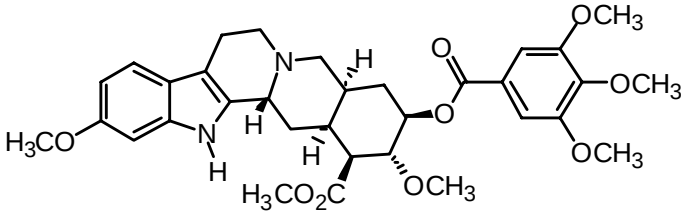
L-fucose

CARBOHYDRATE



deoxyadenosine

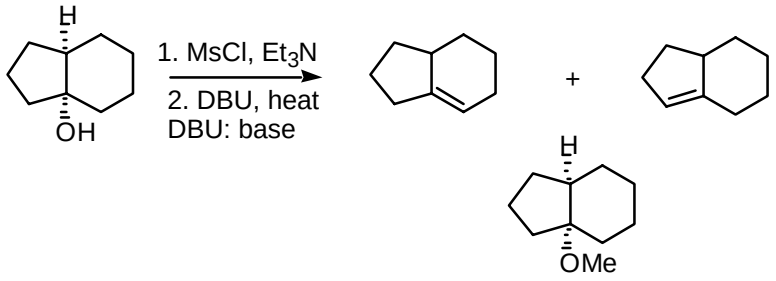
NUCLEOSIDE



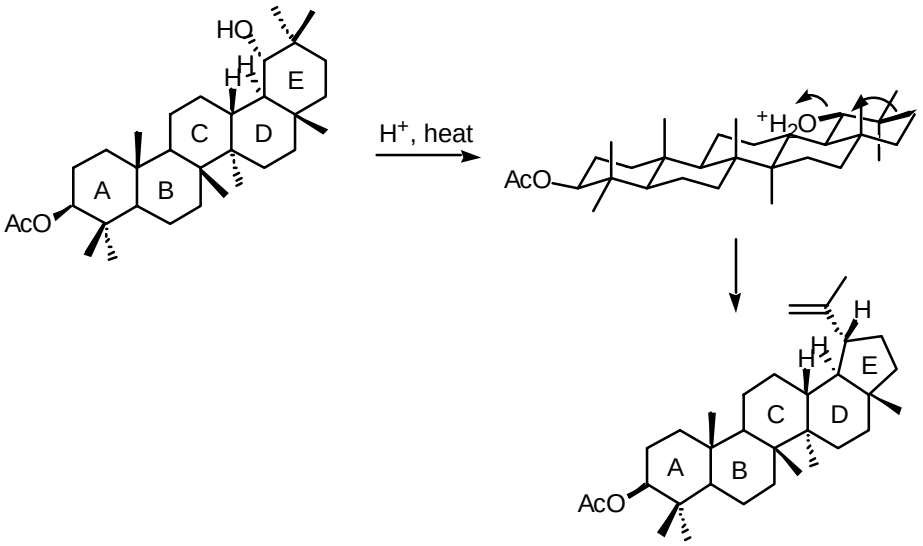
reserpine

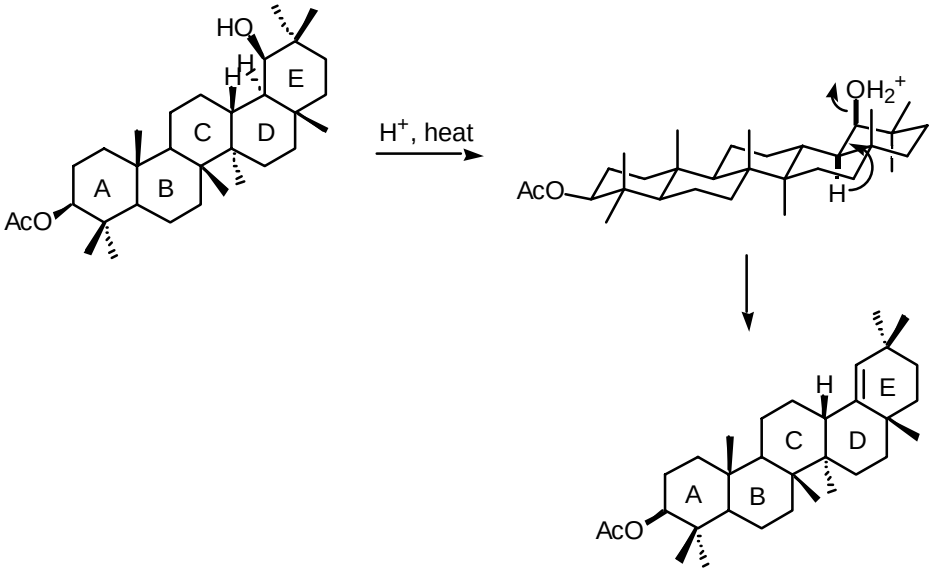
ALKALOID

2.

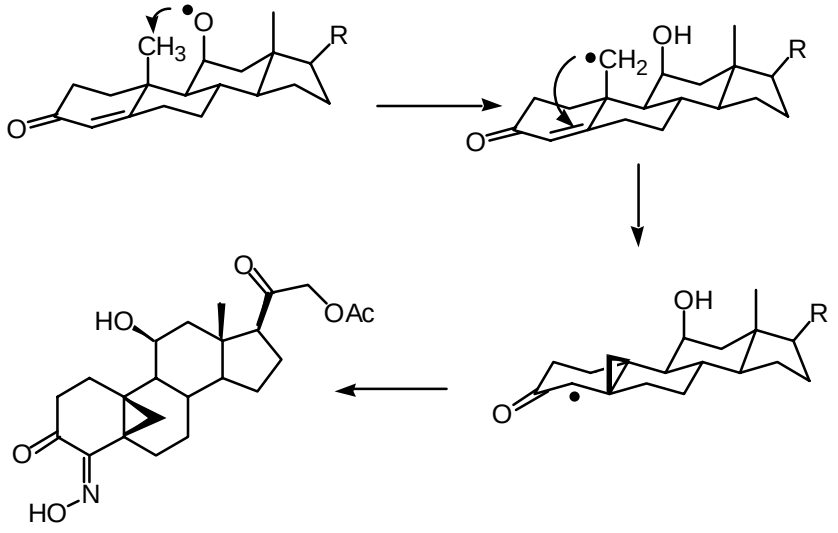

H
OH
1. MsCl, Et3N
2. DBU, heat
DBU: base
+
H
OMe

3.

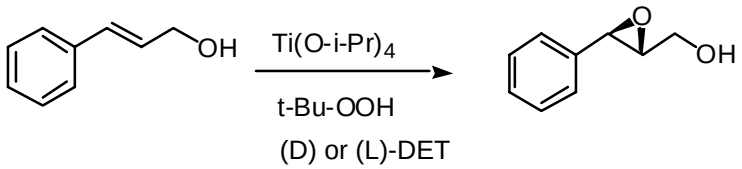

HO
H
H
E
C
D
A
B
AcO
H+, heat
+H2O
AcO
H
H
H
E
C
D
A
B
AcO


HO
H
H
E
C
D
A
B
AcO
H+, heat
OH2+
AcO
H
H
E
C
D
A
B
AcO

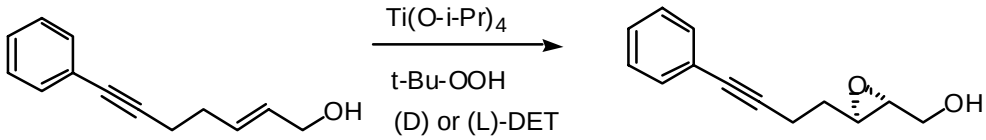
4.


CH3
O
R
O
CH2
OH
R
O
O
OAc
HO
OH
R
O
O
N
HO

5. a)


OH
Ti(O-i-Pr)4
t-Bu-OOH
(D) or (L)-DET
O
OH

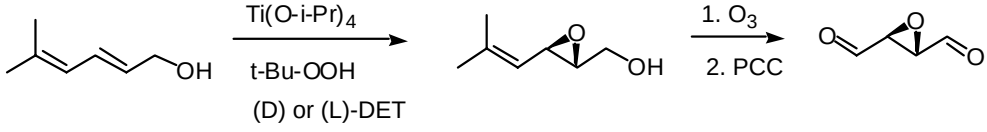
b)


Ti(O-i-Pr)4
t-Bu-OOH
(D) or (L)-DET
OH
O
OH

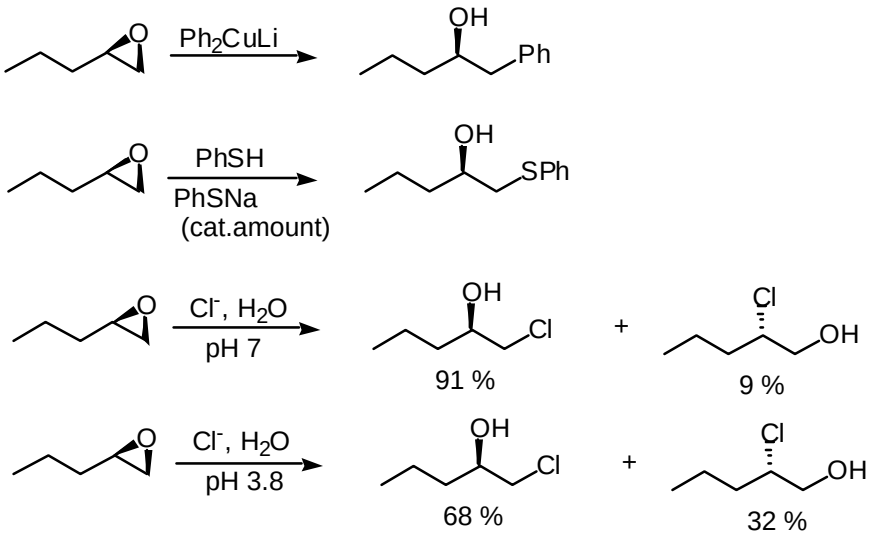
c)


OH
Ti(O-i-Pr)4
t-Bu-OOH
(D) or (L)-DET
O
OH
Ph SNa
THF
HO
OH
SPh

d)


OH
Ti(O-i-Pr)4
t-Bu-OOH
(D) or (L)-DET
O
OH
1. O3
2. PCC
O
O
O

6.


Ph2CuLi
OH
Ph
PhSH
PhSNa
(cat.amount)
OH
SPh
Cl-, H2O
pH 7
OH
Cl
91 %
+
Cl
OH
9 %
Cl-, H2O
pH 3.8
OH
Cl
68 %
+
Cl
OH
32 %