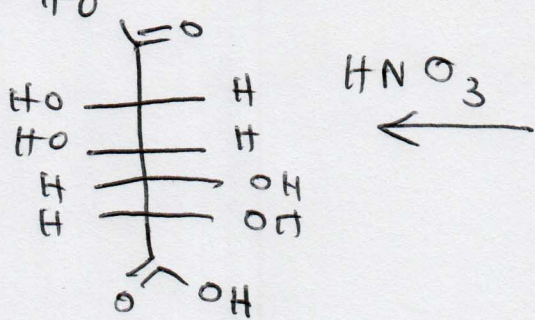


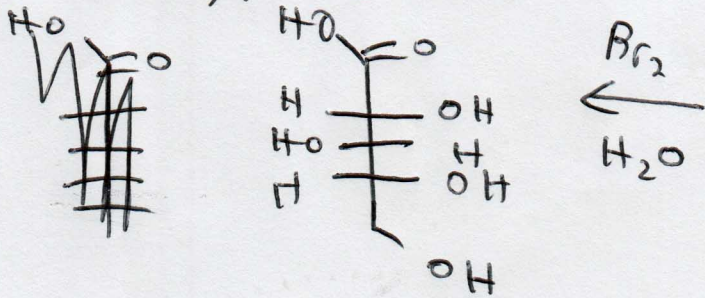
Exam # 2

Lab Quiz # 2

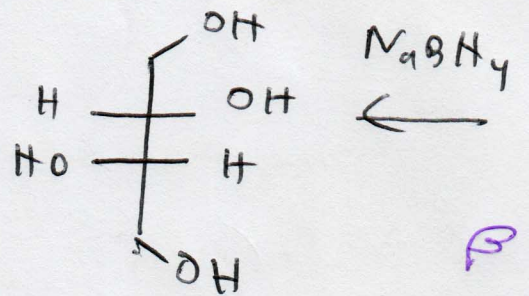
1a) D-mannaric acid



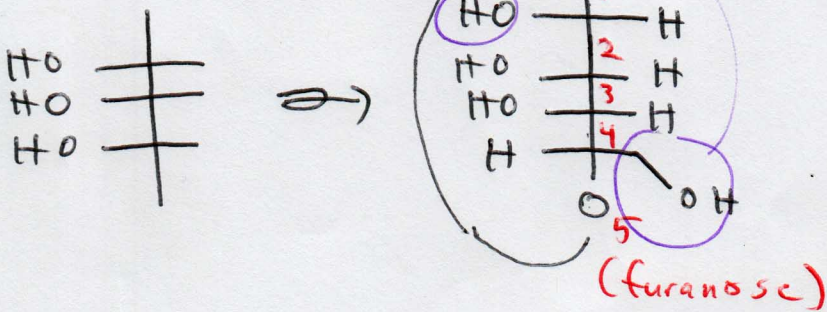
b) D-xylonic acid



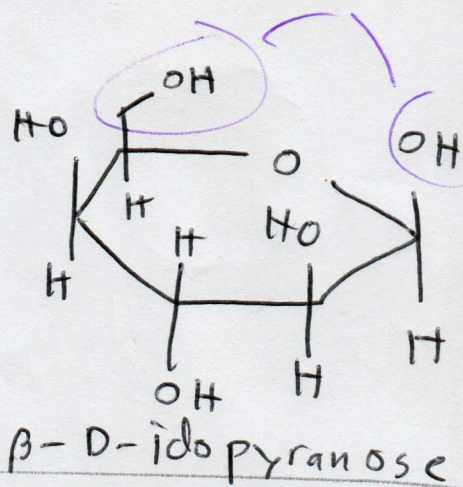
c) L-threitol



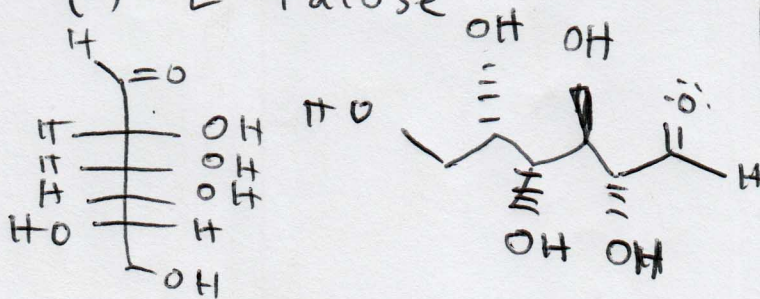
d) α-L-ribofuranose



e)

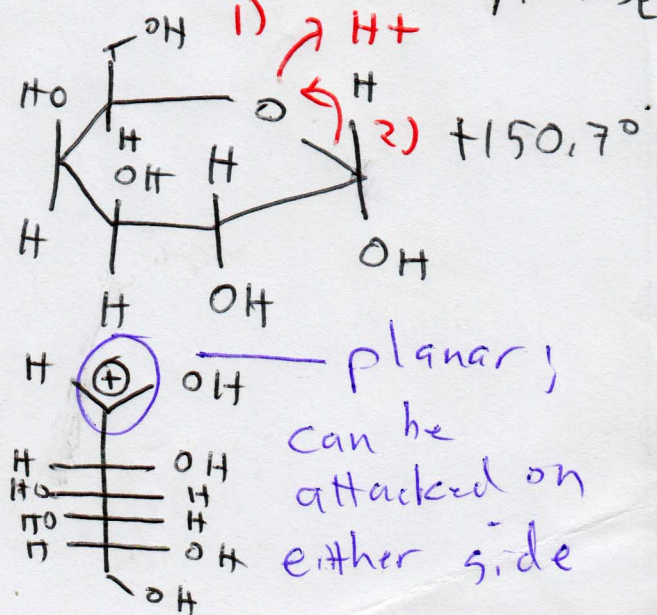


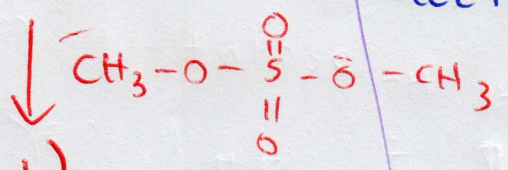
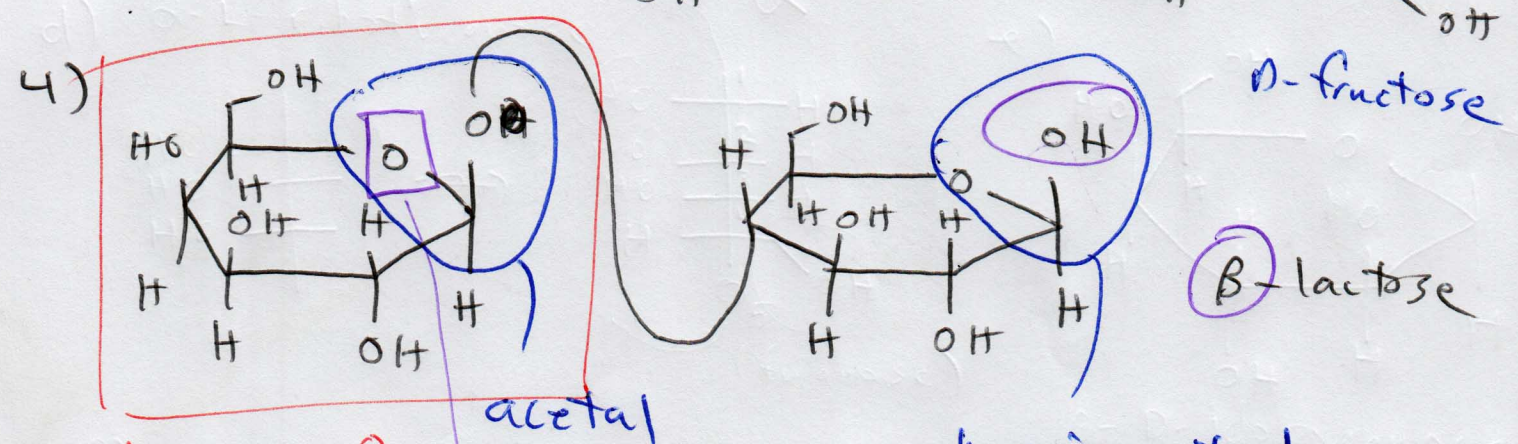
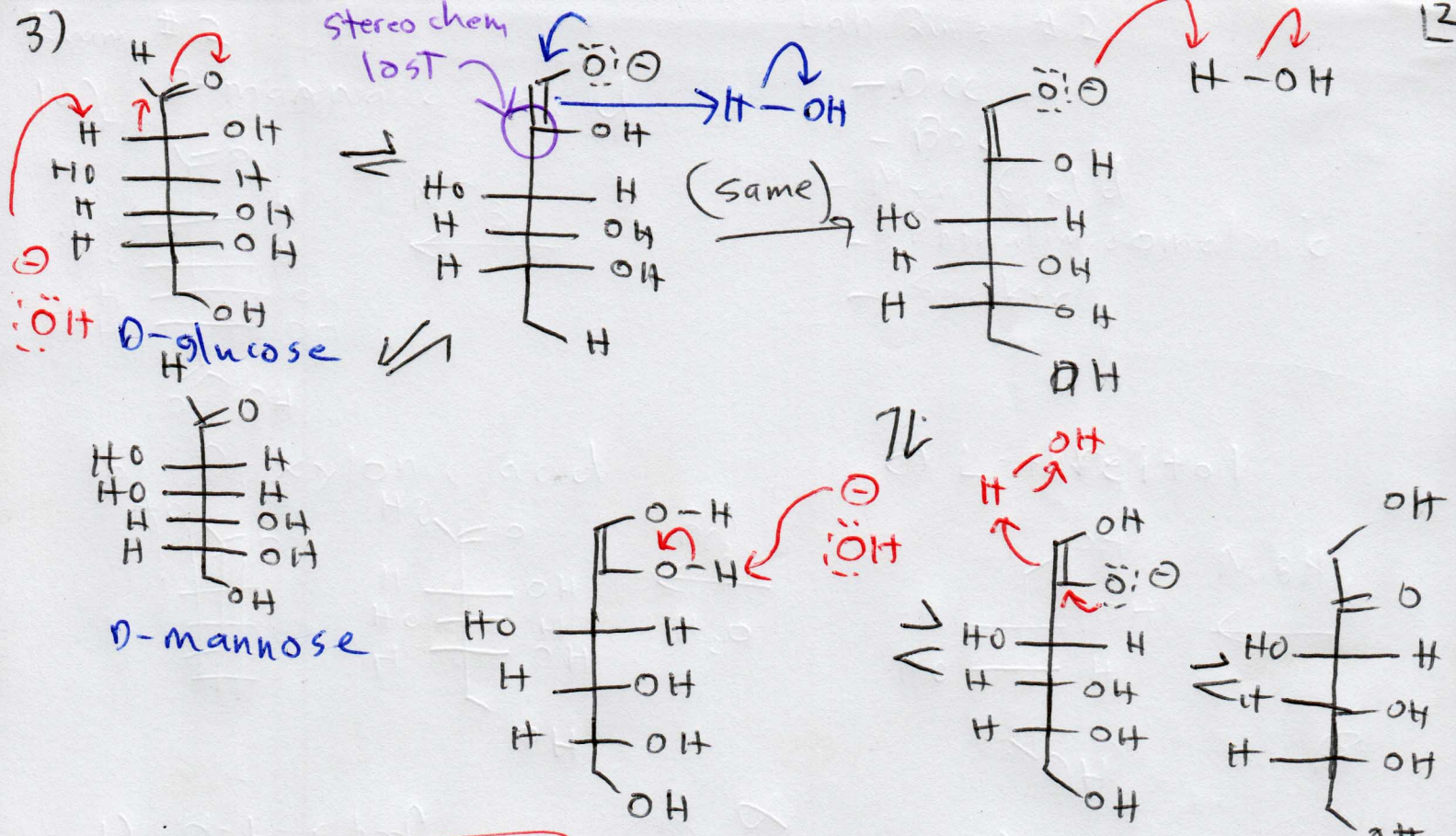
f) L-talose



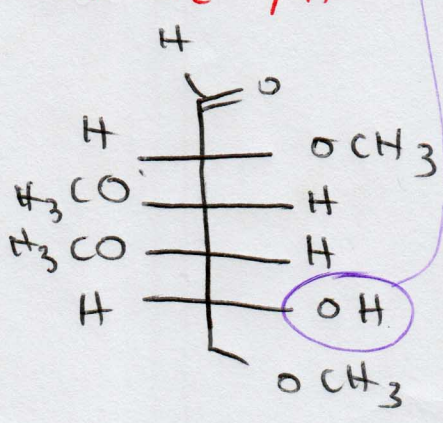
2)

α-D-galactos pyranose



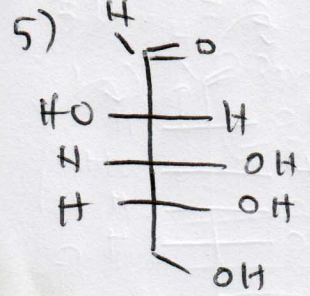


- 1) Ag_2O
- 2) $\text{H}_2\text{O, H}^+$

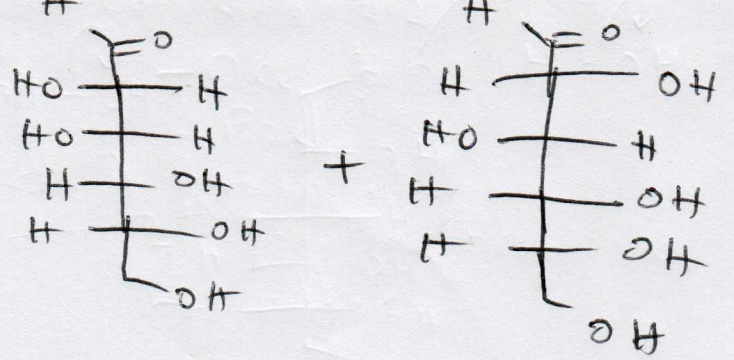


Is in equilibrium w/ open form; it can be oxidized

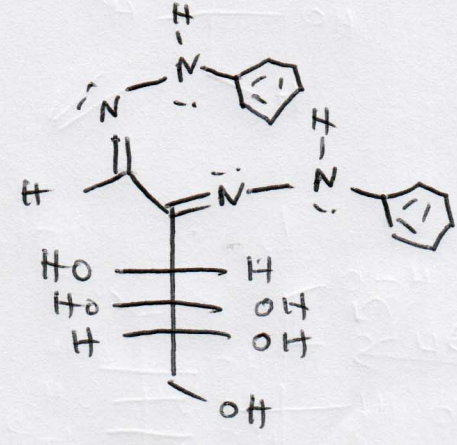
was part of ring, is not methylated



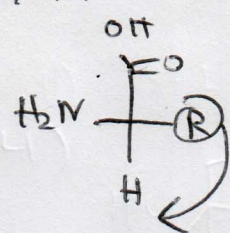
1) NaCN
2) H₂, Lindlar's
3) H⁺, H₂O



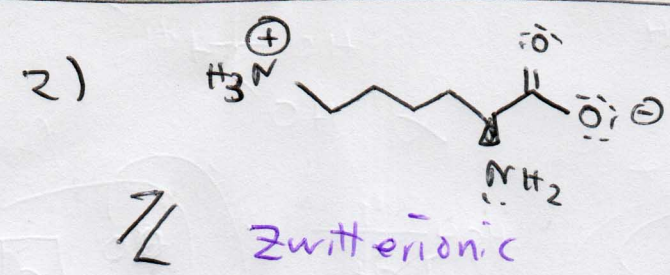
Osazone



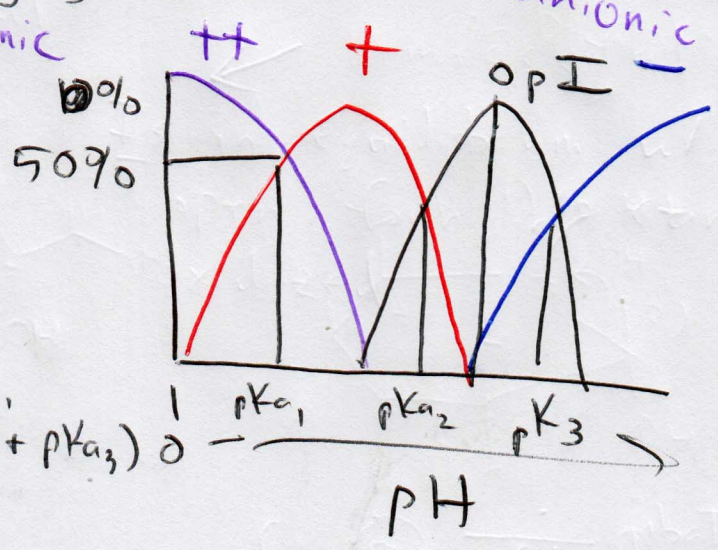
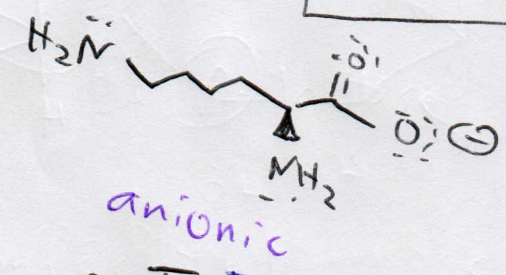
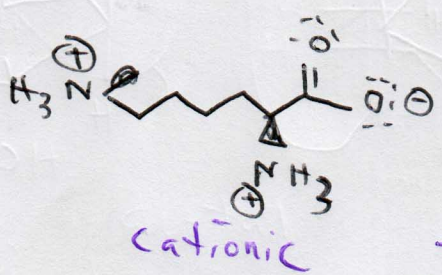
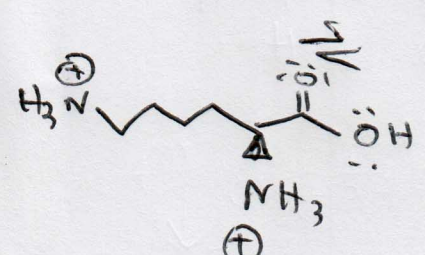
Exam #3



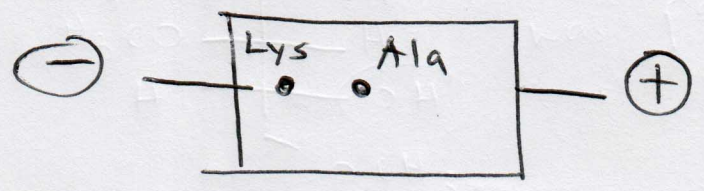
Must be here!



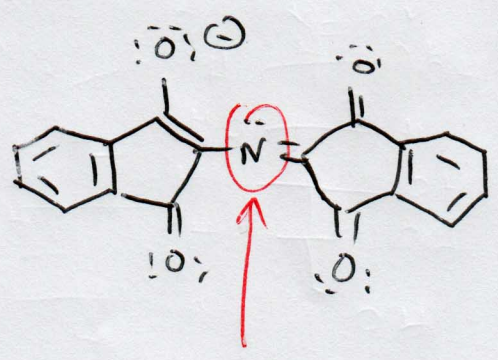
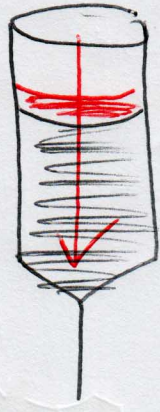
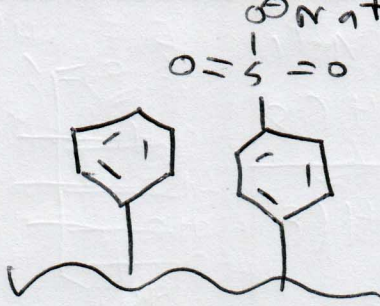
pKa₁ 2.18
pKa₂ 8.95
pKa₃ 10.79



3) pI_{ala} = 6.02
pI_{lys} = 9.87 (avg, pKa₂ + pKa₃)
pH = 4.20

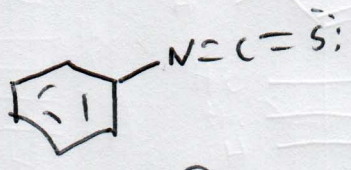


4)

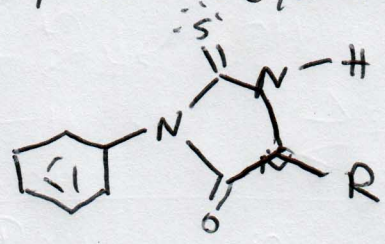
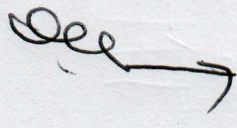


former amino acid

5)



Phenyl isothiocyanate



PTH

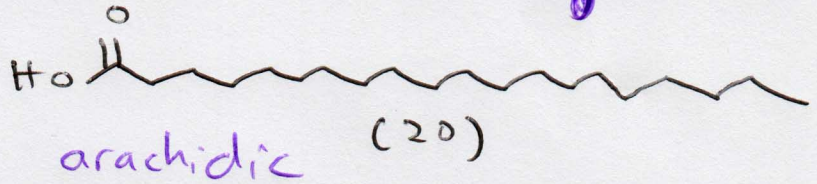
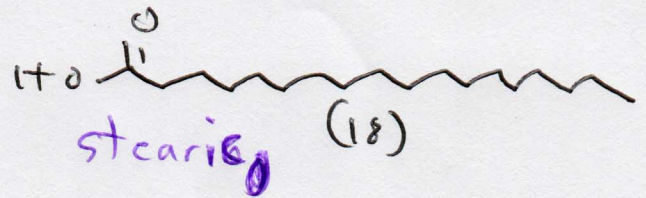
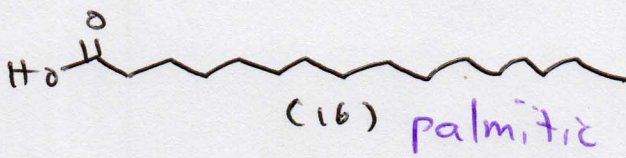
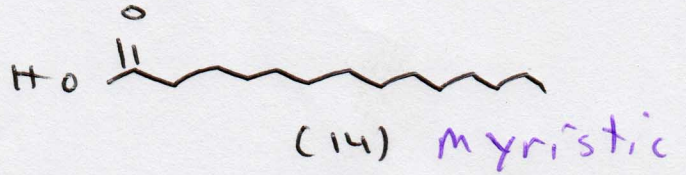
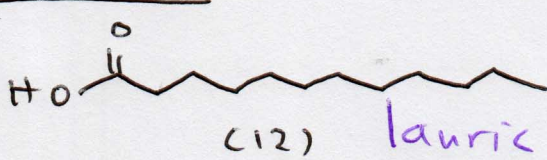
Lipids - naturally-occurring fat-soluble molecules

hydrophilic / phobic - "water-loving / fearing"

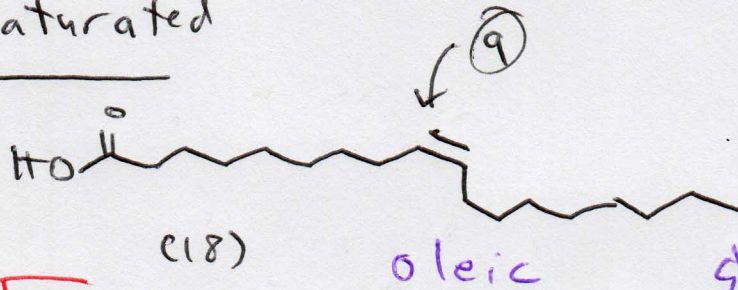
lipophobic / philic - "fat-fearing / loving"

Fatty acids

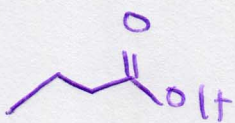
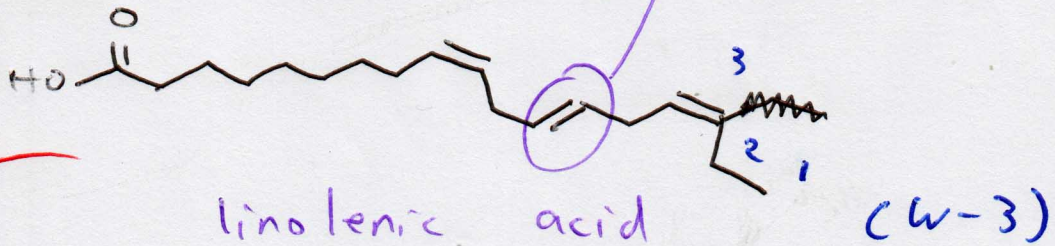
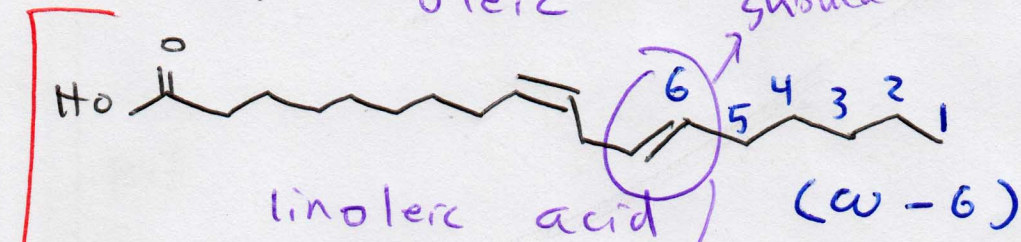
Saturated



unsaturated

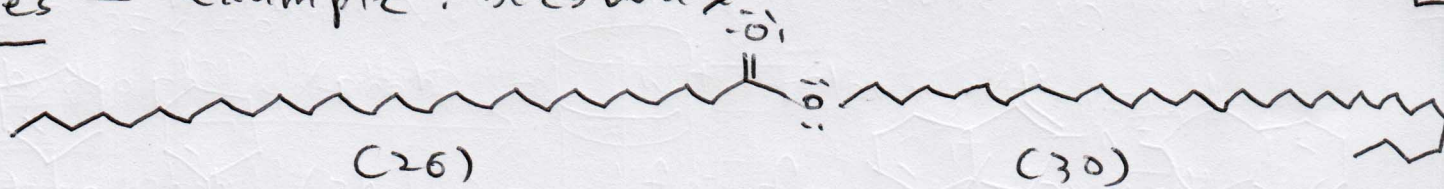


essential fatty acids



butyric acid

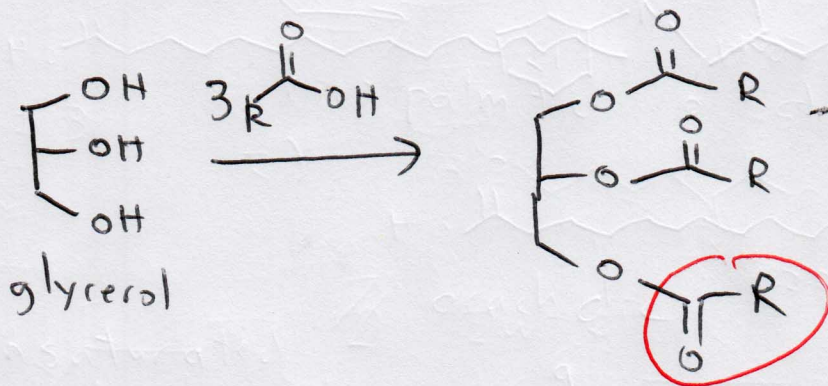
waxes - example: beeswax



waxes are very non-polar but are able to form solids due to extensive formation of temporary dipoles (dispersion forces)

fats

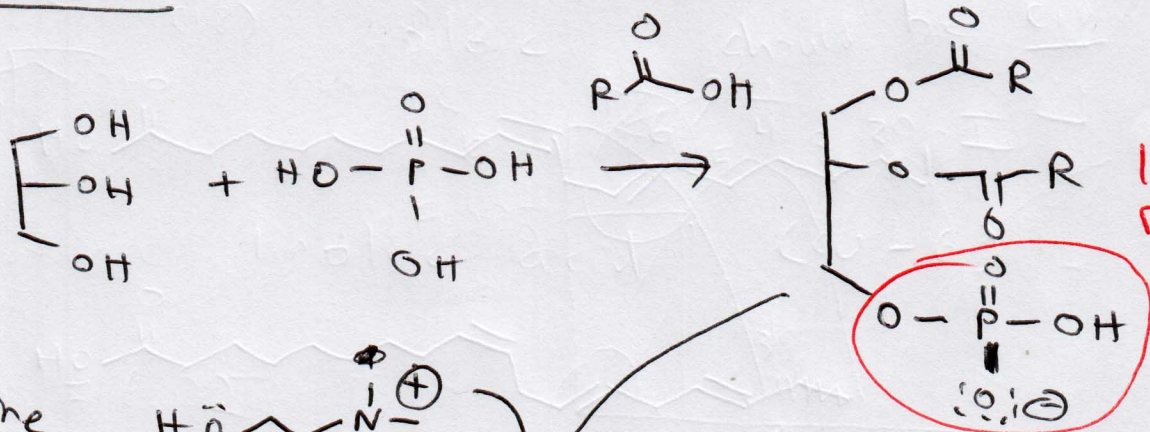
triglycerides / triacylglycerols



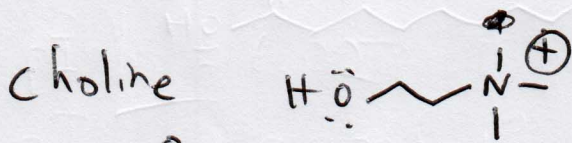
fat = solid @ RT
oil = liquid @ RT

acyl

phospho lipids

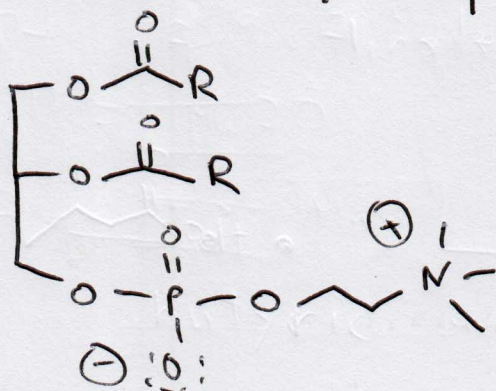


like phosphoric acid



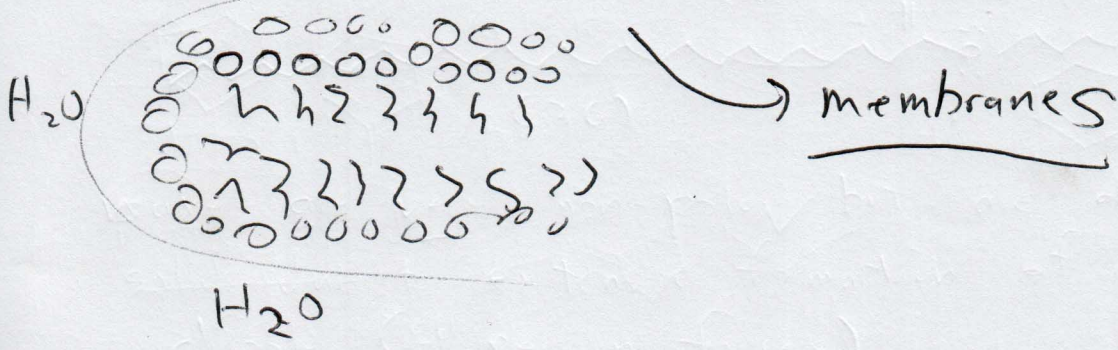
combine

Phospholipid
phosphatidic acid

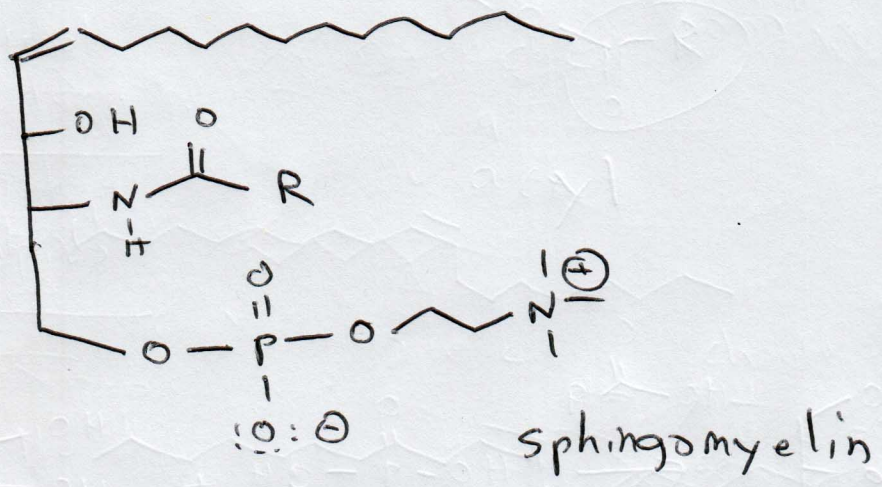
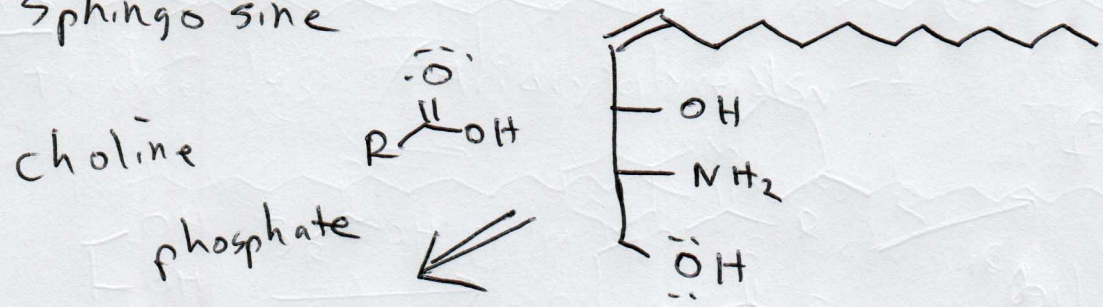


a phosphatidylcholine (general)
a lecithin (more general)

phospholipid bilayer

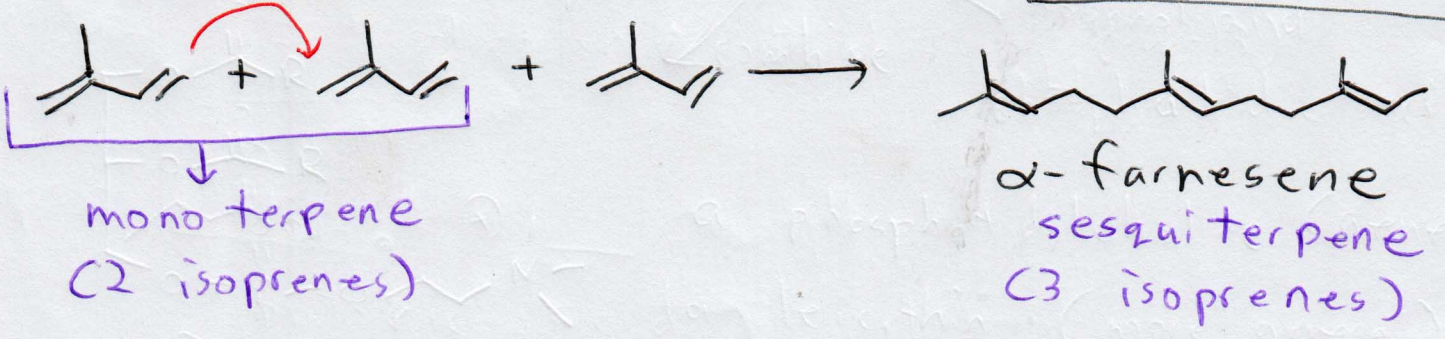
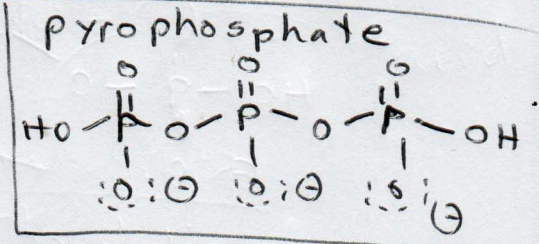
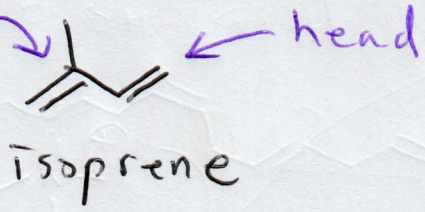


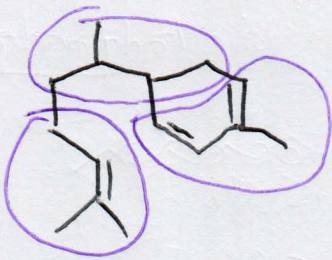
Sphingosine



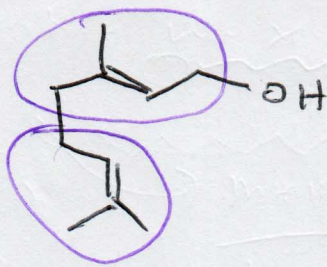
terpenes

tail head
~~tail~~ ~~head~~

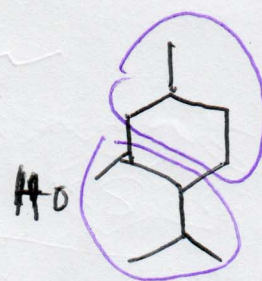




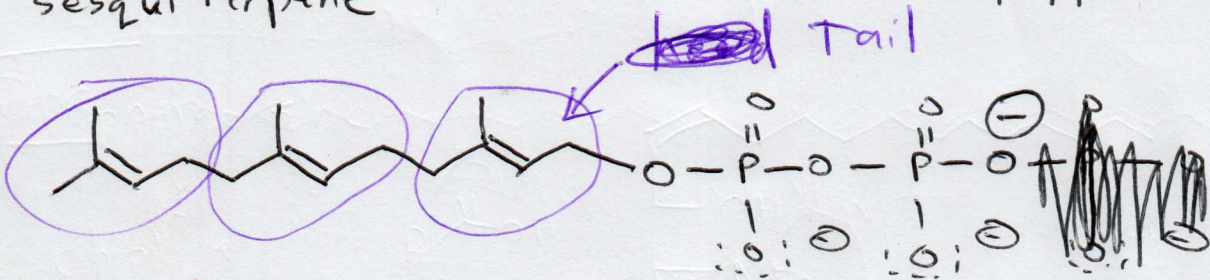
Zingiberene
(ginger)
sesquiterpene



geraniol
(geranium)

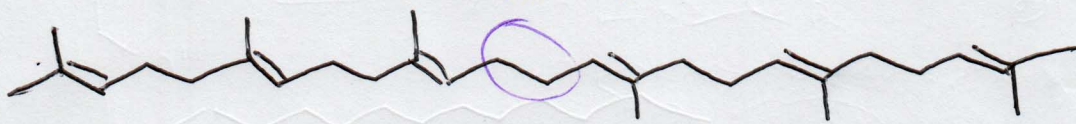


Menthol
(peppermint)

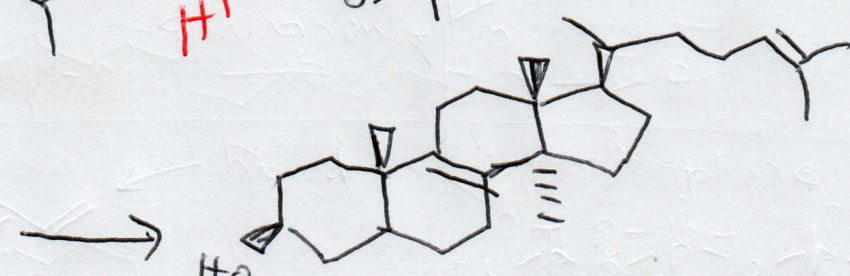
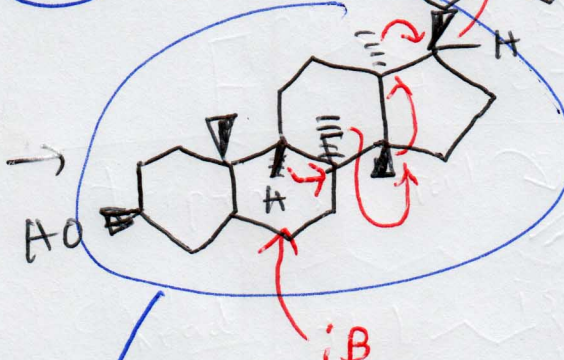
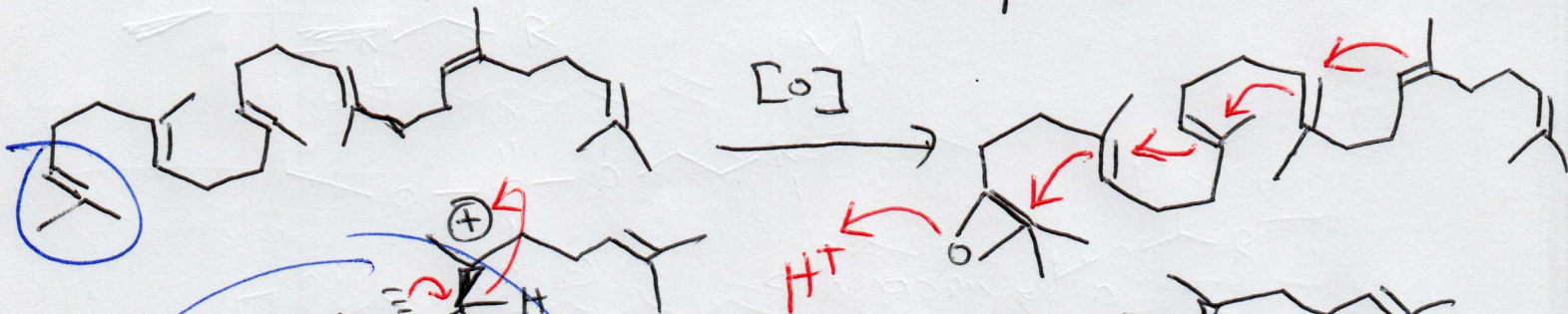


farnesyl pyrophosphate
tail-tail

dimer
→

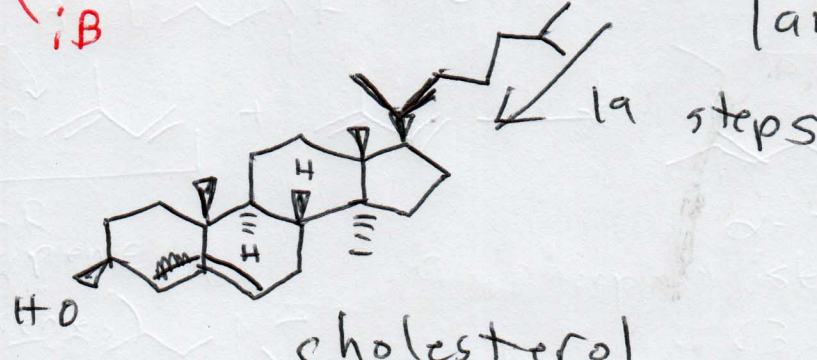


Squalene - triterpene



lanosterol

Steroid



cholesterol