

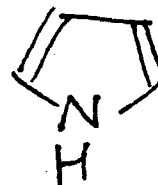
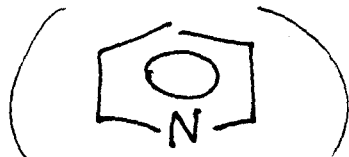
Nomenclature of Aromatic Compounds



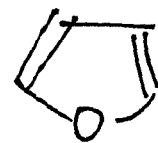
benzene



pyridine



pyrrole

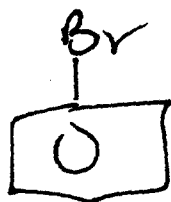


furan

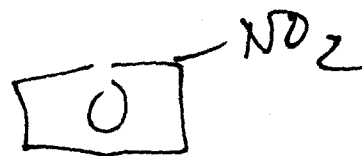
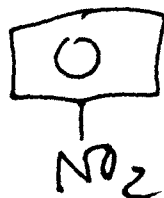
monosubstituted benzenes - name the substituent + then add "benzene"



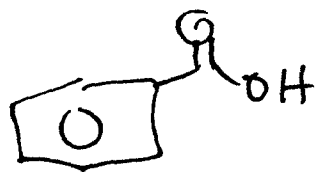
nitrobenzene



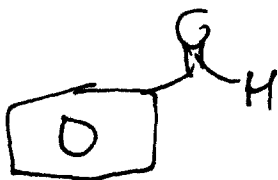
bromobenzene



"Special" compounds



benzoic acid



benzaldehyde

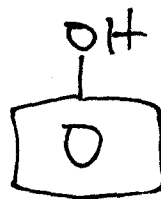
* note error in book -
structure for
benzaldehyde is
wrong



toluene

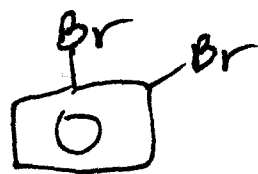


aniline



phenol

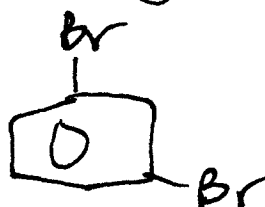
Disubstituted benzenes



ortho

O-

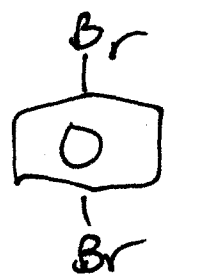
1,2-



meta

m-

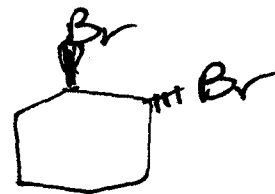
1,3-



para

p-

1,4-

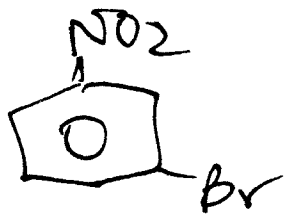


trans-1,2-

dibromo

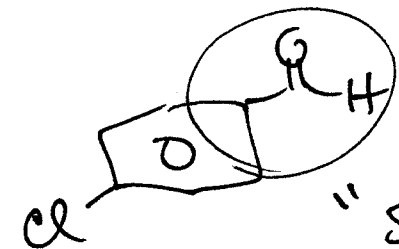
cyclohexane

NOT ortho.



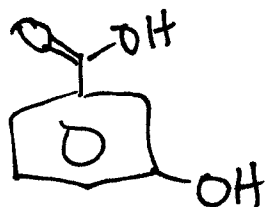
m-bromonitrobenzene

3-bromo nitrobenzene

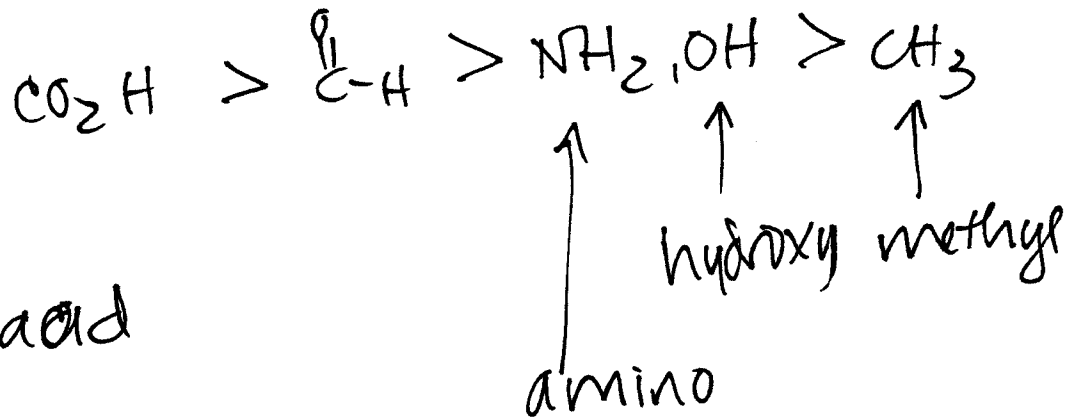


p-chlorobenzaldehyde

"special" substituent wins out = C#1

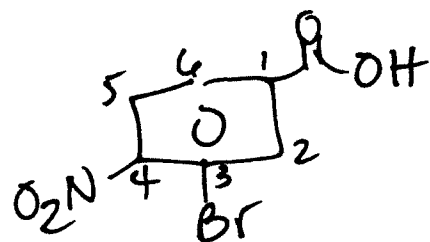


m-hydroxybenzoic acid



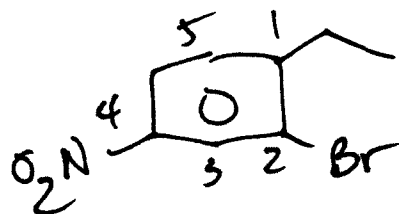
> 2 substituents - use numbers.

a. If you have one of the "special" substs. - that is #1.



3-bromo-4-nitrobenzoic acid

b. Otherwise - number the ring so as to get the lowest set of #s.



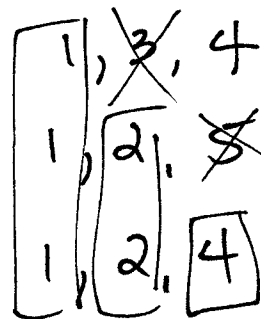
#1

NO₂

Br

Et

Set of #s



2-bromo-1-ethyl-4-nitrobenzene

Annulenes - a class of cyclic compounds
w/ alternating double + single bonds.



[4]annulene

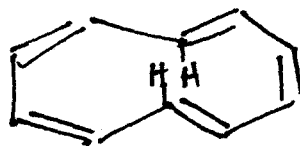
1,3-cyclobutadiene



[6]annulene

benzene

[10]annulene - can have trans double bond



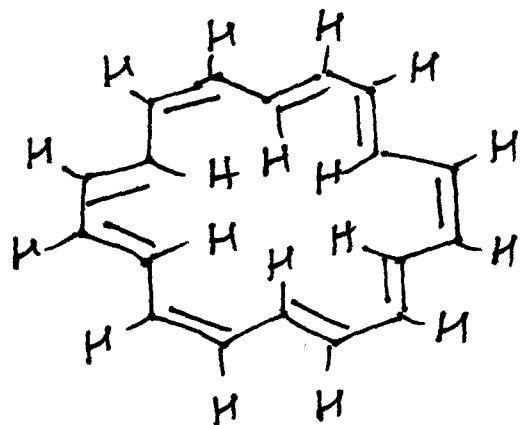
Is this aromatic?

NO.

It should be $10 \pi e's = 4n + 2$

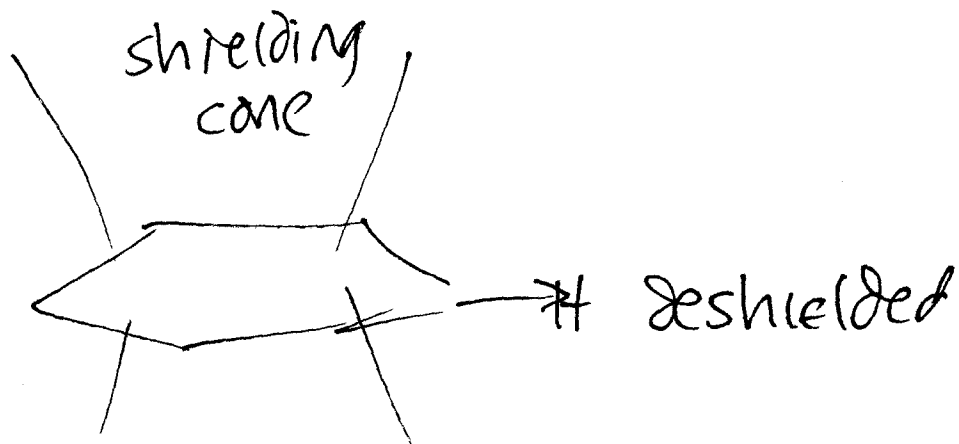
BUT... sterics! Two H's cannot
occupy the ~~same~~ space; the molecule
twists. NOT planar \Rightarrow not aromatic.

[8] annulene



"outside" H's - very deshielded
9.3 ppm

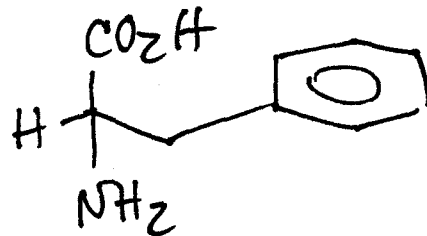
"inside" H's - very shielded
-3.0 ppm!



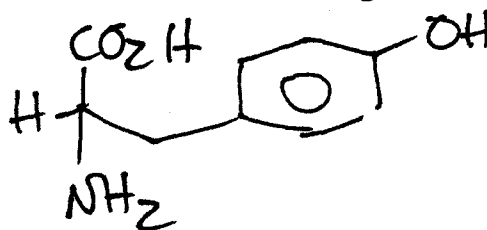
Biochemically Relevant Aromatic Compounds

a. Amino Acids

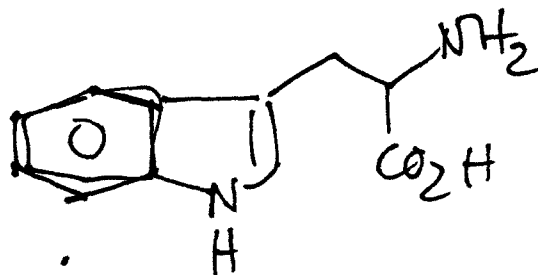
phenylalanine



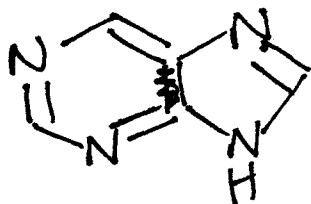
tyrosine



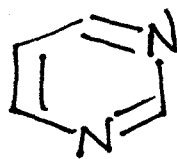
tryptophan



b. DNA contains two heterocyclic aromatics:



purine



pyrimidine

