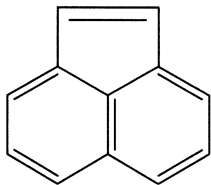


## Chapter 14: "Aromaticity" Worksheet

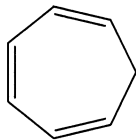
1. Using the Huckel  $4n + 2$  rule determine which of the following compounds are aromatic and which represent conjugated systems:

Conj., NOT Aromatic



$$12 = 4n + 2$$

$$n = 10/4$$

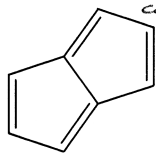


$$6 = 4n + 2$$

$$n = 1$$

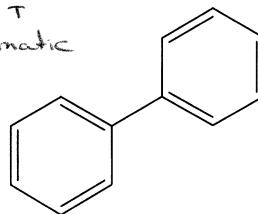
NOT conj.,  
NOT Aromatic

Conj., NOT aromatic



$$8 = 4n + 2$$

$$n = 6/4$$



$$12 = 4n + 2$$

$$n = 10/4$$

Conj., NOT  
Aromatic

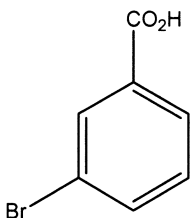


$$6 = 4n + 2$$

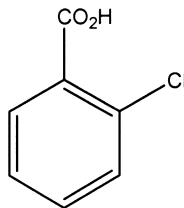
$$n = 1$$

conj.,  
Aromatic

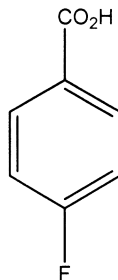
2. Name the following compounds:



m-bromobenzoic acid  
(3)-



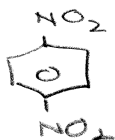
o-chlorobenzoic  
(2)- acid



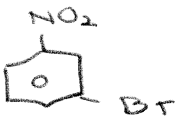
p-fluorobenzoic acid  
(4)-

3. Draw structures of:

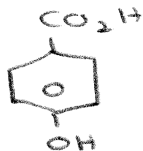
p-dinitrobenzene



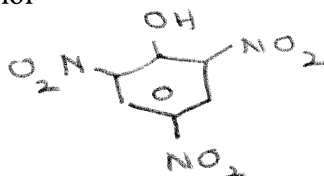
m-bromonitrobenzene



p-hydroxybenzoic acid

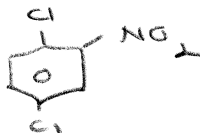


2,4,6-trinitrophenol

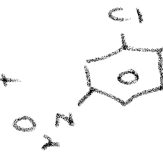
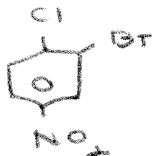
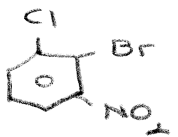


4. Give structures and names of all theoretically possible products of the ring mononitration of:

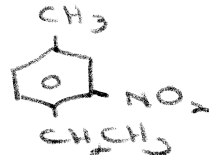
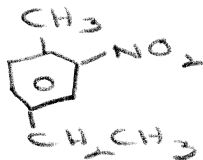
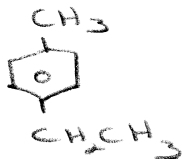
p-dichlorobenzene



o-bromochlorobenzene



p-ethyltoluene



In addition to these questions complete problems: 1, 2 and 4 Chapter 14 in Morrison & Boyd.

For Monday, July 6