Week 8 Worksheet

1. Determine the units of unsaturation for the following compounds.

   a. 
   
   b. $C_6H_{12}N_3Br$

   c. This molecule is caffeine!

   d. $C_5H_5NO_2$

2. How would you use IR to distinguish between the following pairs of compounds. Give at least one peak that could be used to distinguish the two compounds.
3. How does electronegativity of a substituent affect chemical shift?
4. Provide chemical shifts of indicated hydrogen in the following compounds.
   a. 
   ![Image of compound with OH group]
   b. 
   ![Image of compound with carboxylic acid group]

5. Given the following IR spectrum and chemical formula, determine the structure of the compound.
$C_5H_9NO$