WEEK 2 WORKSHEET

1. Safety: What do each of the following GHS symbols represent?

a.  

b.  

c.  

d.  

2. Theory: For each type of proton, list the approximate chemical shift.

\[ \text{CH}_3 \]  

a.  

3. **Theory:** Which set of signals would show up in an IR spectrum of this compound? Key: s = sharp, b = broad

4. How can you differentiate between these compounds using IR spectroscopy?
5. Which compound corresponds to the Proton NMR below? Show your rationale.

   ![Proton NMR spectrum]

   a. Ethanol  
   b. Acetic acid  
   c. Ethane  
   d. Butanol

6. You conduct an experiment that results in 36 g of your desired compound. However, you expected 42 g to be obtained. What is your percent yield and what accounts for this difference.