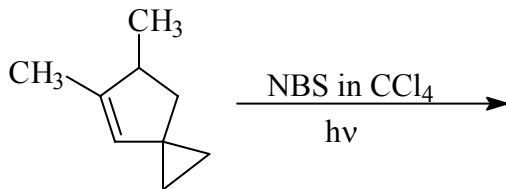


**CHM 201**  
**Chapter 10 Exam Problems**

1. The allylic bromination of the alkene below with NBS gives **four** different products. **Draw the two initially formed *free radical intermediates* together with any applicable resonance structures and the four products.** Which product do you expect to be the major one and which is formed in lowest yield? Identify them both.



2. The relative reactivity of **primary : secondary : tertiary** sites in free radical chlorination is **1 : 3.5 : 5**. The free radical chlorination of 2,5-dimethylhexane gives three monochlorinated products (all  $\text{C}_8\text{H}_{17}\text{Cl}$ ). Gas Chromatographic analysis of the product mixture shows three peaks with areas of  $60 \text{ mm}^2$ ,  $70 \text{ mm}^2$  and  $50 \text{ mm}^2$  (compounds **A**, **B**, and **C** respectively). **Draw the three products** and predict which isomer corresponds with each peak in the GC. Show your work.

3. Propose a series of chemical steps that would facilitate the following syntheses:

