Chem 332 Exam 3 2009 Prof. Fox 50 minutes 80 points

Show your work in detail

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NAME	
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(8 points each)

2. There is a problem with each of the following syntheses.
CIRCLE the problematic step, and describe the problem in the space below in 30 words or less

b Me 
$$SO_3$$
 Me  $NBS$   $NBS$   $H_2SO_4$   $SO_3H$   $SO_3H$ 

2. There is a problem with each of the following syntheses.
CIRCLE the problematic step, and describe the problem in the space below in 30 words or less

$$\begin{array}{c} \mathbf{d} \\ & \leftarrow \\ & \leftarrow$$

3. Suggest a multistep synthesis, using **benzene** and any other materials that contain **5 carbons or less.** Reagents that do not end up in the product (e.g. PPh<sub>3</sub>) may contain more than 5 carbons.

4. Provide a detailed arrow pushing mechanism. (22 points)