7. Give the major product(s) of the following reactions.

1 a) \[ \text{PhBr} + \text{H}_2\text{SO}_4 \rightarrow \text{Br} \]

1 b) \[ \text{PhSO}_3\text{H} + \text{H}_2\text{SO}_4 \rightarrow \text{Br} \]

1 c) \[ \text{PhNNO}_2 + \text{Cl}_2 \rightarrow \text{NNO}_2 + \text{Cl} \]

1 d) \[ \text{Ph} + \text{AlCl}_3 + 2\text{H}_2\text{O} \rightarrow \text{Cl} \]

1.5 e) \[ \text{PhNO}_2 + \text{AlCl}_3 \rightarrow \text{Cl} \]

1.5 f) \[ \text{PhO} + \text{HNO}_3 \rightarrow \text{NO}_2 \]

2. Show how you would accomplish the following transformation. Give reagents over the arrow and structures of isolated intermediate compounds. Mechanisms are not necessary.

1

3. Draw the most important resonance structure for the intermediate in the chlorination of methoxybenzene.