Group Meeting Problems November 22, 2006.

Q.1: Propose a possible mechanism of the following reaction?

COOMe
$$\frac{ArSO_2NHNH_2}{CH_2Cl_2, AcOH}$$
 $\frac{BF_3.Et_2O}{CH_2Cl_2, RT}$ COOMe

Q.2: Predict the product in the following reaction?

Q. 3: Propose a possible mechanism for the following reaction?

Q. 4: Propose a possible mechanism for the following reaction?