1. (10 pts ea.) Predict the products of the following reactions.

a.
$$S_{\rm N}2$$
 NaSCH₃ + $\frac{Br}{acetone}$

2. (30 pts.) Classify the following solvents as protic or aprotic.

•		22.	
/ он	H ₂ O	CH ₂ Cl ₂	

3. (10 pts.) How do protic solvents encourage substitution reactions to occur by an $S_{\rm N}1$ mechanism.

4. (10 pts.) Why would nucleophile quality effect the rate of a reaction that proceeds by an S_N2 mechanism but not one that proceeds by an S_N1 mechanism?