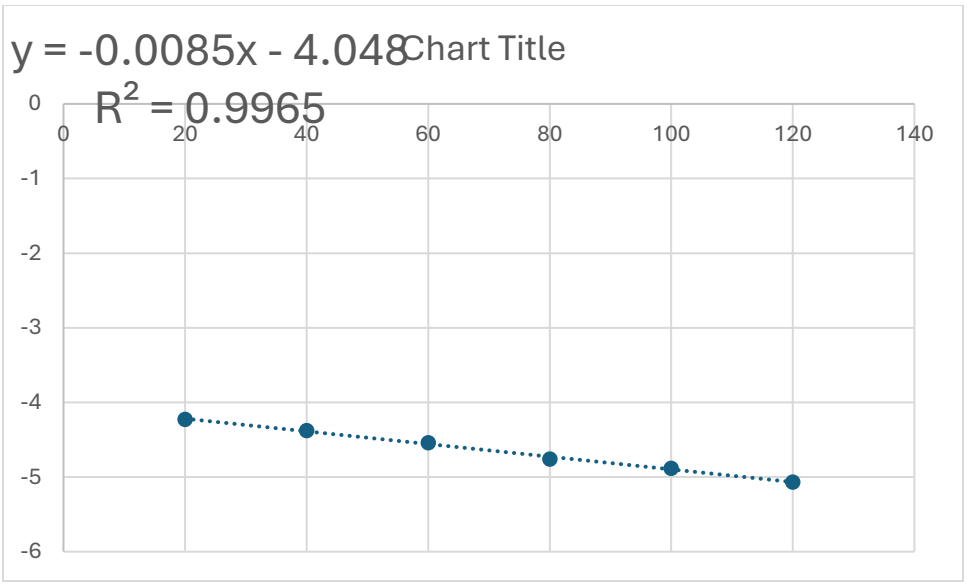
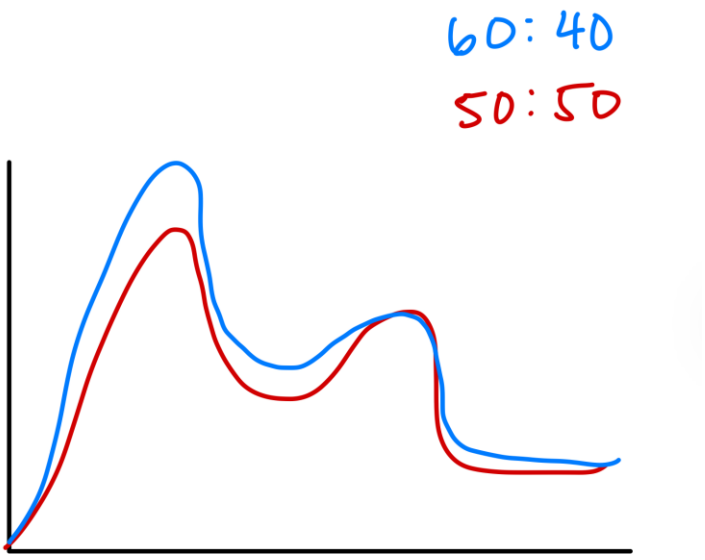
1. 

   a. 60:40 2-propanol:H2O

	50:50 acetone:H2O	60:40 acetone:H2O	50:50 2-propanol:H2O	60:40 2-propanol:H2O
Result 1	0.0003	0.013	0.0003	0.0065
Result 2	0.0157	0.023	0.00992	0.0085
Average	0.008	0.018	0.00511	0.0075

2. ^^^^^
3. The other group with our solution ratio had a value that was reasonably close. Tey only had a difference of 0.002.
4. Water is more polar than either other solution it is mixed with in this experiment. This means that it should result in a higher K-value when a solution is mixed with a higher ratio of water. The data does not reflect that and the solvent dependence is not consistent with the proposed mechanism for the Sn1 reaction.
5. The substrate is the tert-butyl chloride and the nucleophile would be our 60:40 2-propanol:H2O solution. This doesn't change the kinetics of the reaction because the rate-limiting step is determined by the formation of carbocation. The nucleophile doesn't partake in the formation of it so the speed at which it happens doesn't change.



6.

a. The graph shows blue as the 60:40 2-propanol:H2O and red as 50:50 2-propanol:H2O. The solution with more water is more polar, this results in a lower rate determining step and that leads to a faster reaction.