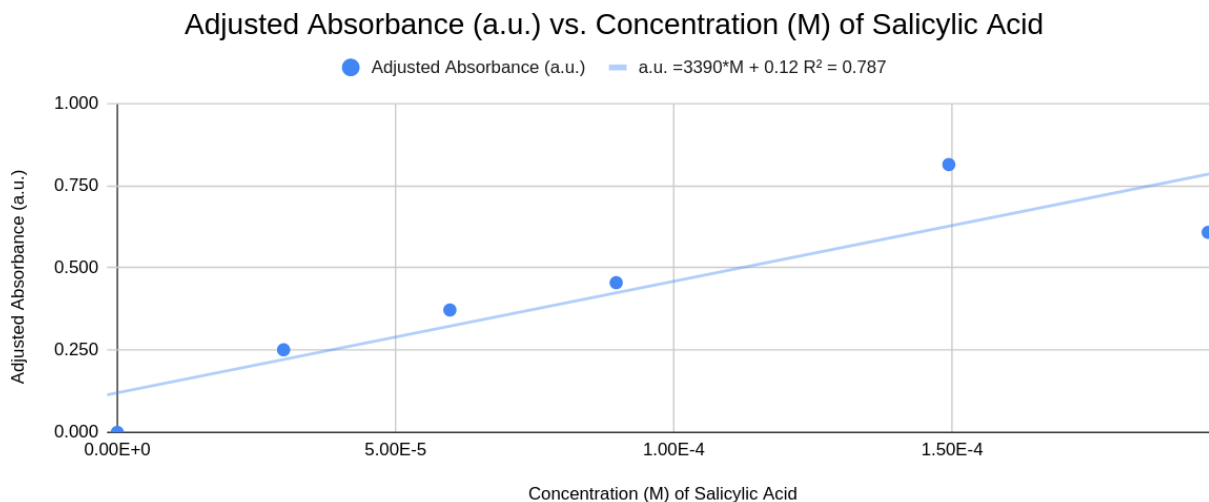


## Supplementary Problems

Data Table 2: Concentration (M) of salicylic acid solutions, corresponding absorbances (a.u.) and adjusted absorbances (a.u.)

Concentration (M) of Salicylic Acid	Absorbance (a.u.)	Adjusted Absorbance (a.u.)
0.00	0.018	0.000
2.988E-05	0.269	0.251
5.976E-05	0.390	0.372
8.964E-05	0.473	0.455
1.960E-04	0.626	0.608
1.494E-04	0.832	0.814



The trendline for the relationship between Adjusted Absorbance and Concentration of Salicylic Acid is  $3390 \cdot M + 0.12 = \text{a.u.}$  With an  $R^2$  of 0.787.

Using this trendline we can find the concentration M of an unknown solution of aspirin that has an absorption of 0.103 a.u.

First account for the solvent absorption  $\rightarrow 0.103 \text{ a.u.} + 0.018 \text{ a.u.} = 0.121$

$\text{a.u.} = 3390 \cdot M + 0.12 \rightarrow M = (\text{a.u.} - 0.12)/3390 \rightarrow M = (0.121 - 0.12)/3390 \rightarrow M = 2.95 \times 10^{-7} \text{ M}$

