1. Calculate the activity of 0.100 m Ti(NO$_3$)$_2$. The result should be expressed in terms of $\gamma_{\pm}$. (Don’t bother to find $\gamma_{\pm}$ explicitly).

2. Calculate the solubility of PbCl$_2$. The $K_{sp} = 1.7 \times 10^{-5}$. Use the Debye-Hückel equation to calculate the mean ionic activity coefficient.

3. The pure vapor pressure of substance A is 28.2 torr. For A, the mole fraction for A in the vapor above a solution is 0.0432 with the mole fraction of the solution of 0.672. Calculate the activity coefficient for A in this solution. The total vapor pressure is 760.0 torr.