

January 25, 2002

CH 342 S02, Homework 3  
due Wednesday, January 30, 2002

Problems marked with a \* must be done using a computer (spreadsheet or symbolic math package).

## Mixing Liquids

1. E 7.3b
2. P 7.9

## Colligative Properties

3. E 7.4b
4. E 7.6a
5. E 7.15a
6. \* E 7.16b. Plot the osmotic pressure in units of Pa versus solution concentration in units of moles per liter! This will require that you convert the height of the liquid to units of pressure in Pa and also determine the molar mass of the polymer to convert g/L to mol/L.

Extra Credit: On the above problem, report a confidence limit on the molar mass of the polymer based on a valid statistical (uncertainty) analysis of the data.

## Activities

7. \* P 7.6. Plot the data as pressure in units of kPa versus solution mole fraction. Show the lines that indicate Raoult's and Henry's law behavior for the two components. This will require that you convert the pressures from Torr to kPa.

Extra Credit: On the above problem, report the values and confidence limits of the Henry's law constants based on a valid statistical (uncertainty) analysis of the data.

8. E 7.19b