Directions: The following practice problems are included with the lecture. Complete them according to the lecture

Raoult's Law Practice problem

The vapor pressure of pure water at 20°C is 17.5 torr. What is the vapor pressure of water over a solution made by dissolving 50.0 g of glucose ($C_6H_{12}O_6$) in 50.0 g of water?

Freezing Point Depression Practice problem

What is the freezing point of a solution made by dissolving 25.5 g of glucose ($C_6H_{12}O_6$) in 1.00 kg of water?

Boiling Point Elevation Practice Problem

What is the *change* in boiling point (from that of pure water) of an aqueous solution that is 0.115 *m* in $(NH_4)_2SO_4$?   Kb = 0.52 °C/*m*

Additional Practice with Colligative Properties

Which aqueous solution will have the lowest freezing point? Explain your answer.

○ 0.01 *m* NaCl
○ 0.02 *m* glucose
○ 0.02 *m* HCl
○ 0.01 *m* $CaCl_2$

Osmosis Practice Problem

A 0.100 L Solution is made by dissolving a sample of $CaCl_2(s)$ in water.

       (a) Is $CaCl_2$ an electrolyte or a nonelectrolyte?

       (b) The solution has an osmotic pressure of 3.55 atm at 27° C. What is the approximate molarity of $CaCl_2$ in the solution?