$\Delta T = (K * M)i$

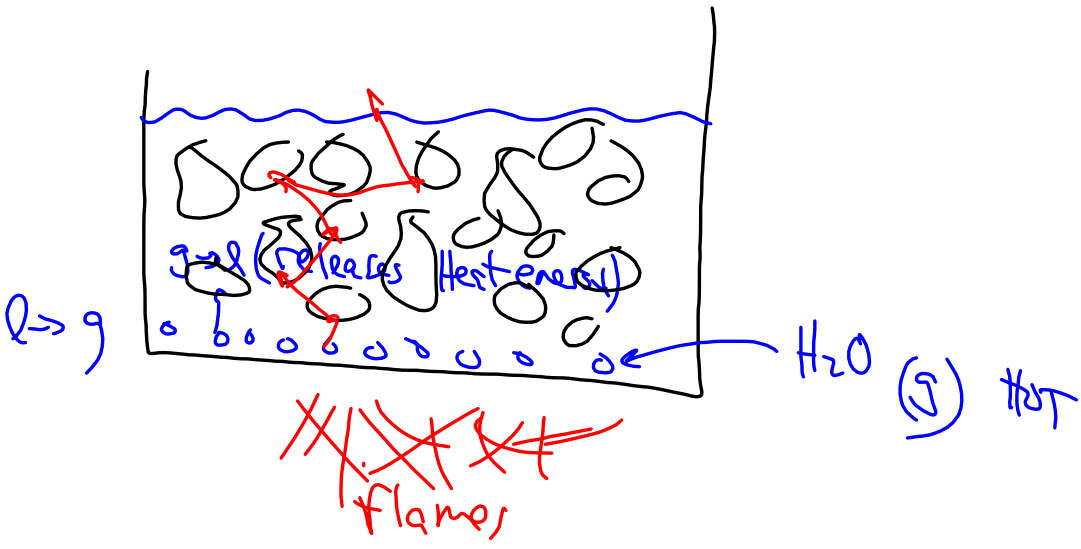
K or °C

Molality → moles solute / Kg solvent → g solute / MW solute

$\Delta P + \Delta T$

$\Pi P - \Delta T$

Jan 8-7:59 AM



Jan 8-8:18 AM

$UP_{soln} = X_{SOLVENT} P^{\circ}_{pure\ solvent}$

Universal solvent → H_2O

UP H_2O at temp is on plll

Jan 8-8:26 AM

$PV = nRT$ ← KELVIN

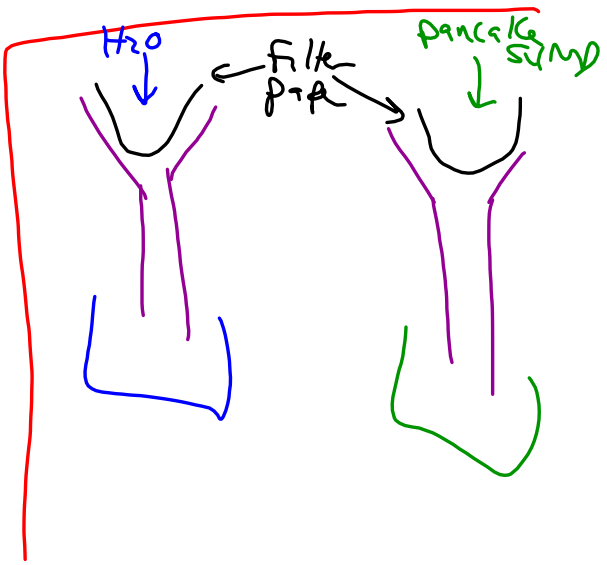
n: moles

$R = 0.08206 \frac{L \cdot Atm}{mole \cdot K}$

$P = \frac{n}{V_L} RT$ (moles)

$P = MRT$

$\Pi = MRT$ (Osmotic Pressure)



Jan 8-8:28 AM

PS B

(2) 454 g $CaCl_2$ in Water 500 ml soln

$M = \frac{\text{Moles solute}}{\text{l soln}}$

8.25 mole $CaCl_2$ / 1 l

$\frac{454\text{ g } CaCl_2}{0.5\text{ l soln}} \left| \frac{1\text{ mole } CaCl_2}{111\text{ g } CaCl_2} \right. = 8.25\text{ M } CaCl_2$

1 $CaCl_2$ → 1 $Ca^{+2}_{(aq)}$ + 2 $Cl^-_{(aq)}$

8.25 8.25 2(8.25)

16.5

Jan 8-8:32 AM

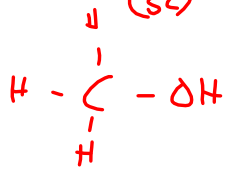
$X_{\text{Solute}} = \frac{\text{mole solute}}{\text{moles solute + mole solvent}} = 1$

1 1 0

Jan 8-8:45 AM

(5) $X_{methanol} = \frac{\text{moles meth}}{\text{moles meth} + \text{mole } H_2O}$

(32) (18)



$\text{Moles} = \frac{g}{MW}$

32g meth
32g H_2O

$= \frac{\frac{32}{32}}{\frac{32}{32} + \frac{32}{18}} = \frac{1}{1 + 1.78}$

$= 0.36$

Jan 8-8:57 AM

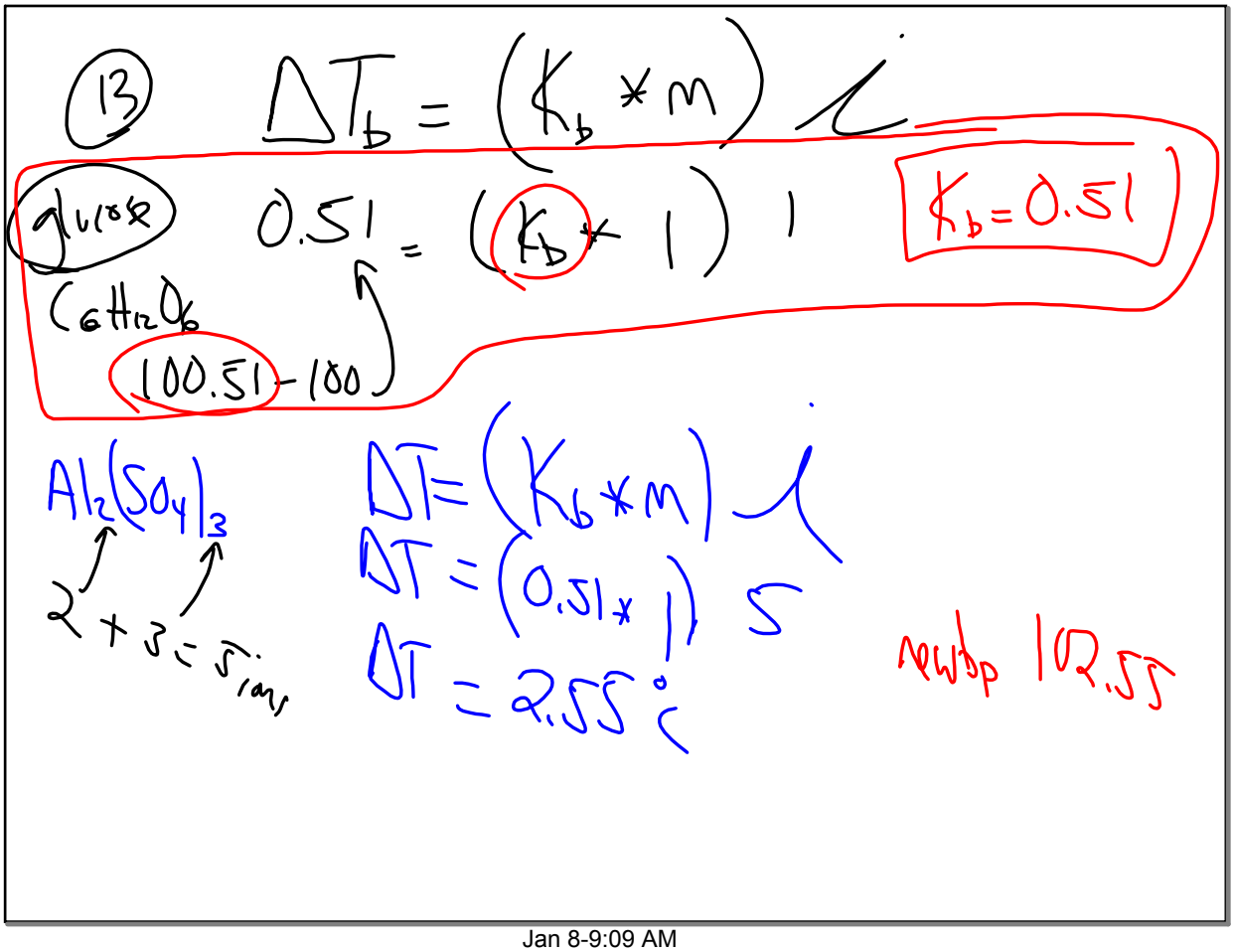
(12) $\boxed{VP_{soln} = X_{solvent} \; P_{pure\ solvent}}$

$VP_{soln} = \frac{\text{mole } H_2O}{\text{mole } H_2O + \text{mole glucose}}$ (355)

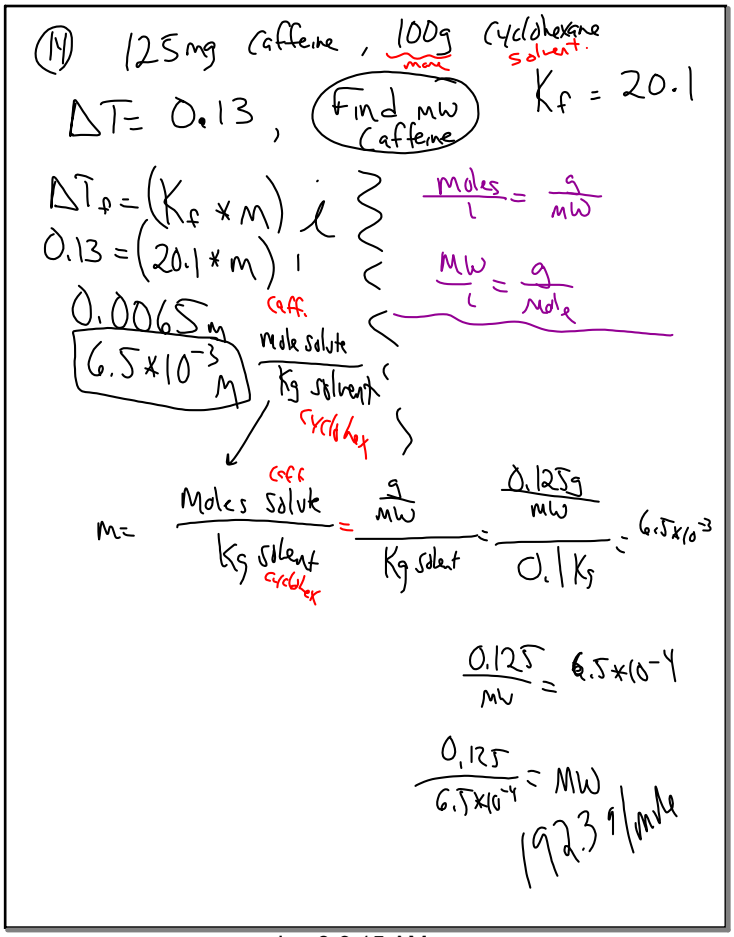
0.03 mole glucose
100g H_2O
P_{pure}: 355 torr

$\frac{\frac{100}{18}}{\frac{100}{18} + 0.03}$ (355)

Jan 8-9:02 AM



Jan 8-9:09 AM



Jan 8-9:15 AM

(16) 0.25g cytc , 50ml soln

Π= 1.52 kPa, 25°C, Find mw cytc

$PV = nRT$

$\frac{1.52\,kPa}{101.3\,kPa} \frac{1\,atm}{} = 0.015\,atm$

$\frac{PV}{1} = \frac{gRT}{MW}$

16693 g/mol

$\frac{MW}{1} = \frac{gRT}{PV} = \frac{(0.25)(0.08206)(298)}{(0.015)(50*10^{-3})}$

Jan 8-9:25 AM

(17) $M = \frac{\text{moles}}{Kg} \quad \frac{g}{MW} = \frac{\frac{50}{58}}{0.125}$

Jan 8-9:30 AM