13.70c 0.45 mole ethylene glycol (1) + 0.15 mole KBr (2) in 150 g H_2O

$K_f = 1.86\ ^\circ C/m$, $K_b = 0.52\ ^\circ C/m$

$\Delta T = (K * m)\, i$

EG: $\Delta T = (K_f * m)\, 1 = \left[1.86\left(\frac{0.45}{0.15}\right)\right] 1 = 5.58^\circ C$

KBr (2 ions): $\Delta T = (K_f * m)\, 2 = \left[\left(1.86\right)\left(\frac{0.15}{0.15}\right)\right] 2 = 3.72$

$\Delta T_f = (K_f * m)$

$1.86\left[\frac{(0.45)_{EG} + 2(0.15)_{KBr}}{0.15}\right]$

$\Delta T = 9.30$

normal FP $- \Delta T_f$

$0 - 9.3 = -9.3$

Jan 8-7:38 AM

$KBr \rightarrow K^+ + Br^-$

1 mole 2 mole ions

$M = \frac{\text{moles}}{\ell} = \frac{\frac{g}{MW}}{\ell}$

Jan 8-8:05 AM

13.73 (Π) $P = ?$

$44.2\text{ mg } C_9H_8O_4$ (ASA)

$0.358\text{ l } H_2O$ @ 25°C

$PV = nRT$

$$P = \frac{nRT}{V} = \frac{(2.46\times10^{-4}\text{ mole})(0.08206)(298)}{0.358\text{ l}} = 0.01677\text{ atm}$$

$$\frac{44.2\text{ mg}(C_9H_8O_4)}{1000\text{ mg}} \left| \frac{1\text{ g}}{180\text{ g}} \right| \frac{1\text{ mole}}{} = 2.46\times10^{-4}\text{ mole ASA}$$

Jan 8-8:08 AM

13.78 2.35 g, 0.250 l solution, P = 0.605 atm, T = 25°C

Find mw

$PV = nRT$

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

$\frac{mw}{T} = \frac{gRT}{PV}$

$$mw = \frac{(2.35)(0.08206)(298)}{(0.605)(0.250)} \frac{K}{\text{atm}\ \text{l}}$$

$$380\ \frac{\text{g}}{\text{mole}}$$

Jan 8-8:14 AM

$$X_A = \frac{\text{Moles A}}{\text{Moles A} + \text{Moles B}}$$

1

$$\overset{44}{CH_3CH_2OH} + \overset{18}{H_2O}$$

Jan 8-8:22 AM

$$CaCl_2 \rightarrow Ca^{+2} + 2Cl^-$$

$\underline{x}$ M $\qquad$ $\underline{2x}$ M

Jan 8-8:26 AM