

osmotic pressure (π) $\pi = MRT$ $PV = nRT$

Collig Prop BP \uparrow , FP \downarrow , VP \downarrow , π \uparrow

BP
FP $\Delta T = (K \times m) i$ ← # ions in soln. of covalent $i=1$

MOLALITY

VP Solution = $X_{\text{Solvent}} P_{\text{Pure Solvent}}$

Jan 9-8:16 AM

③ $\text{HNO}_3 = 71\% \text{ pure HNO}_3$ (29% H_2O)

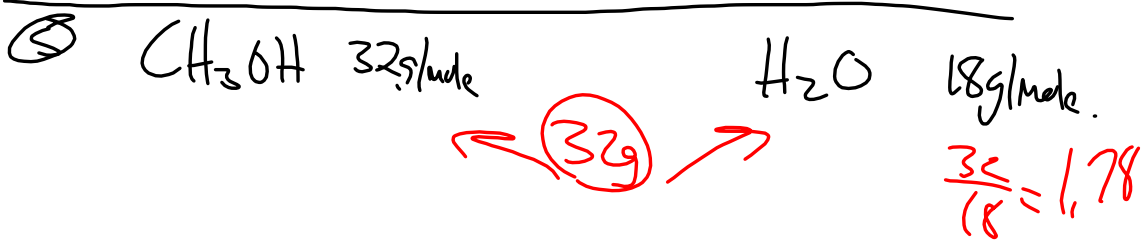
3.18 Kg HNO_3 , $D = \frac{1.42 \text{ g}}{\text{ml}}$, 2.24 L

Find M \Rightarrow moles
L

1.42 g	0.71	1 mole HNO_3	1000 ml
ml		63 g HNO_3	1 L

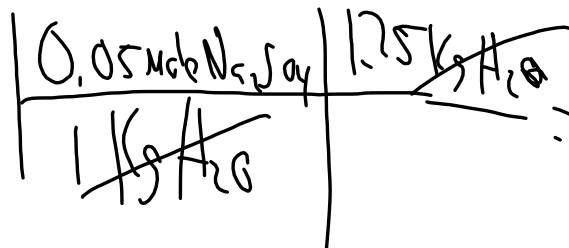
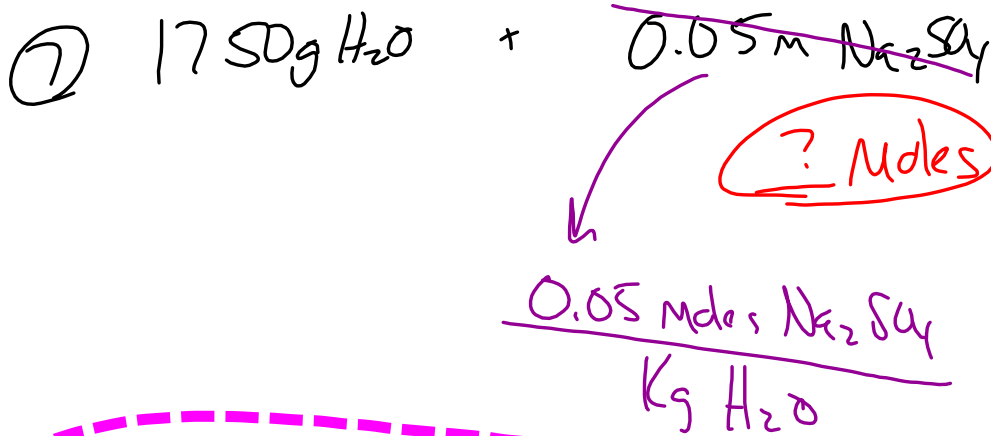
Jan 9-8:47 AM

$$\textcircled{4} \quad X_{\text{Solute}} = \frac{\text{Moles Solute}}{\text{Moles solute} + \text{Moles Solvent}} = \underline{\underline{1}}$$



$$X_{\text{CH}_3\text{OH}} = \frac{\text{Moles CH}_3\text{OH}}{\text{Moles CH}_3\text{OH} + \text{Moles H}_2\text{O}} = \frac{1}{1 + 1.78}$$

Jan 9-8:53 AM



Jan 9-9:00 AM

(13) $\Delta T = (K_b \times m) i$

$\Delta T = (0.5 \times 1) 5$

$\Delta T = 2.6$

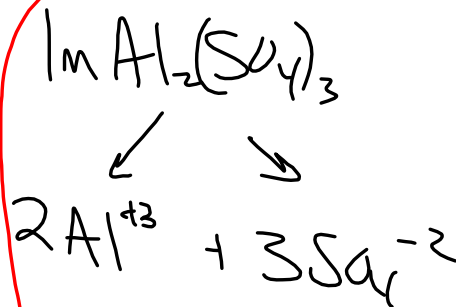
(old)

mp glucose BP 100.51 $\Delta T = 0.51$

$\Delta T = (K_b \times m) i$

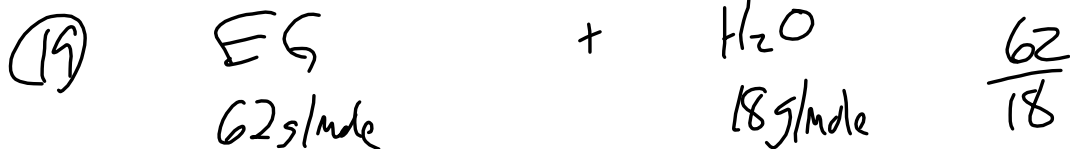
$0.51 = (K_b \times 1) 1$

$K_b = 0.51$



5 ions

Jan 9-9:05 AM



$X_{EG} = \frac{\text{mole EG}}{\text{mole EG} + \text{mole H}_2\text{O}} = \frac{1}{1 + \frac{62}{18}}$

Jan 9-9:10 AM

(6) 0.25g cyclo, 50ml soln, 1.52kPa
 $50 \times 10^{-3} \text{L}$, 0.015atm

MW $\frac{\text{g}}{\text{Mole}}$

25°C
 Kelvin 298

$$PV = nRT$$

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

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

Jan 9-9:13 AM