PS 13

(12) Calc VP_{soln} @ 80°C

0.03 mols glucose in 100 g H_2O

$\frac{100}{18} = 5.56$ mole H_2O

$VP_{H_2O} = 355$ Torr @ 80°C

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

$= (0.994)(355)$

$= 353.09$ Torr

$X_{H_2O} = \frac{\text{Moles } H_2O}{\text{Mole } H_2O + \text{Mole glucose}}$

$X_{H_2O} = \frac{5.56}{5.56 + 0.03}$

$X_{H_2O} = 0.994$

Jan 11-7:36 AM

(13) 1m glucose

$i = 1$

BP = 100.51°C

$\Delta T = 0.51 = (K_b * m)$

$K_b = 0.51$ H_2O

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

0.51

1m $Al_2(SO_4)_3$

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

$= (0.51 * 1) 5$

2.55

100 → 102.55

$\Delta 2.55$

Jan 11-8:08 AM

(14) 125 mg Caffeine + 100g Cyclohexane
$K_f = 20.1 \frac{K}{m}$

$\Delta T = 0.13$

Find MW caffeine $\frac{g}{mole}$ $\frac{0.125g}{0.0065}$

$\Delta T = (K_f * m)\ell$

$0.13 = (20.1 * m)\ 1$

$0.0065 M$

$\frac{0.0065 \text{ mole Caffeine}}{1 \text{ kg Cyclohexane}}$

$\frac{0.0065 \text{ mole Caff.}}{1 \text{ kg Cyclohex.}} \quad \frac{0.1 \text{ kg Cyclohex.}}{}$

0.00065 mole

Jan 11-8:17 AM

Exam 4 Practice

(12) $P_T = P_{He} + P_{Ne} + P_{Ar}$

$8.4 = 1.5 + 2.0 + P_{Ar}$

$P_{Ar} = 4.9 \text{ atm}$

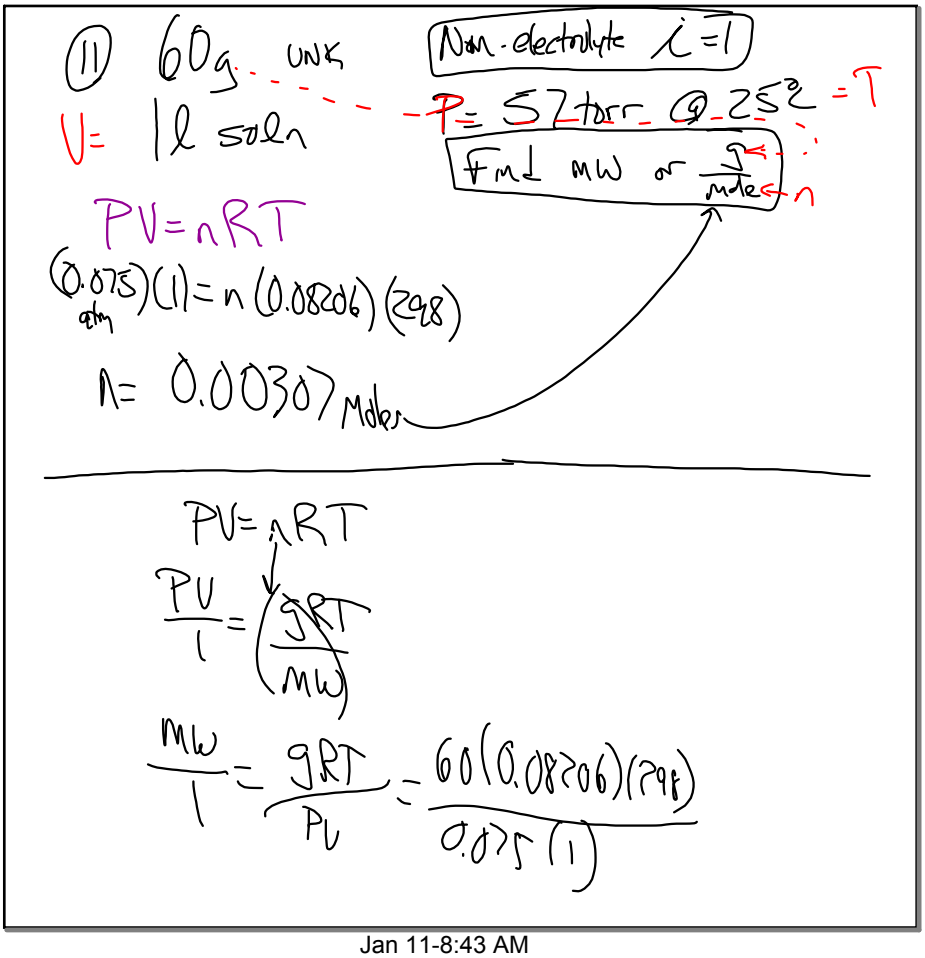
Find X_{Ar}

$P_{Ar} = X_{Ar}(P_T)$

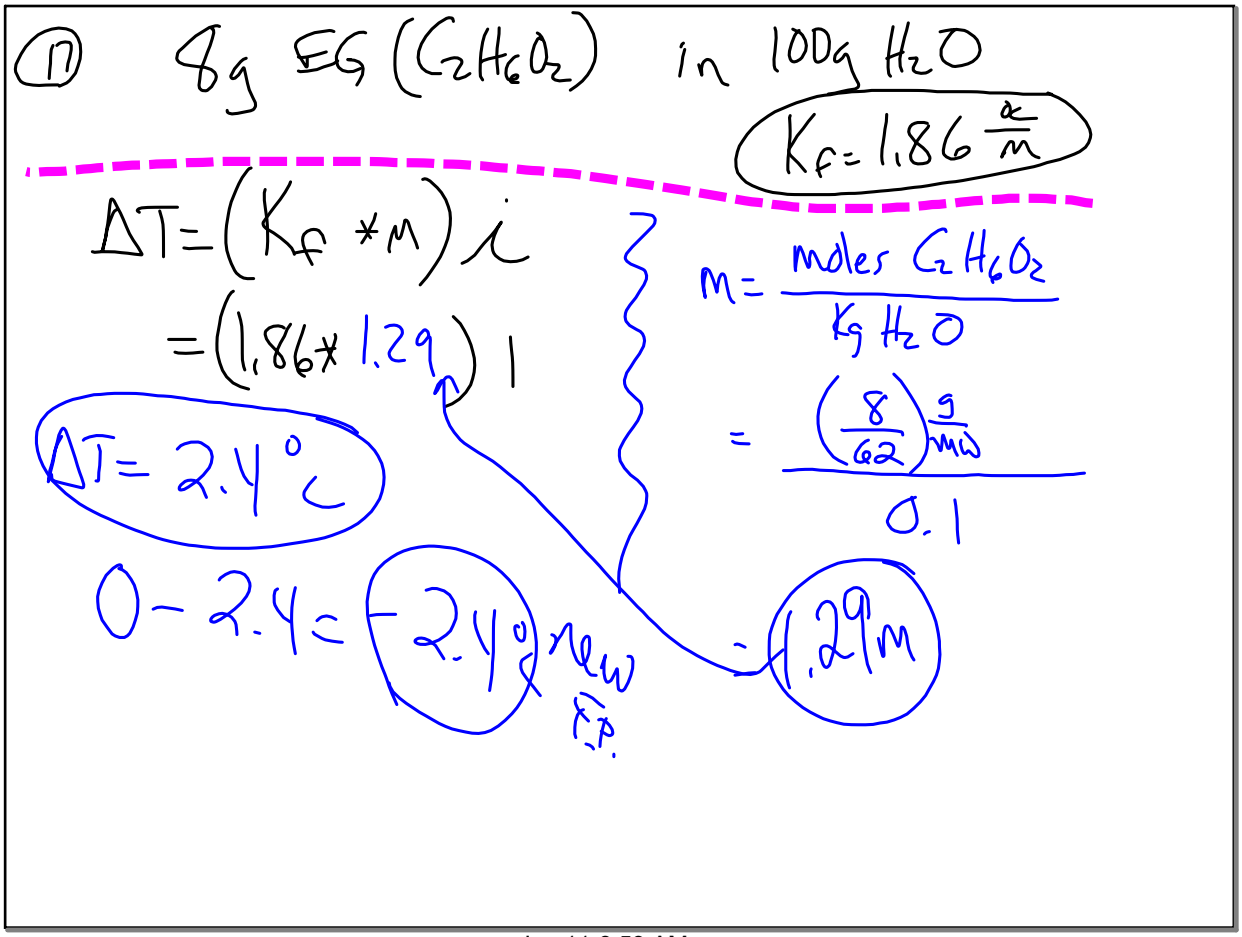
$X_{Ar} = \frac{P_{Ar}}{P_T} = \frac{4.9}{8.4}$

0.583 atm

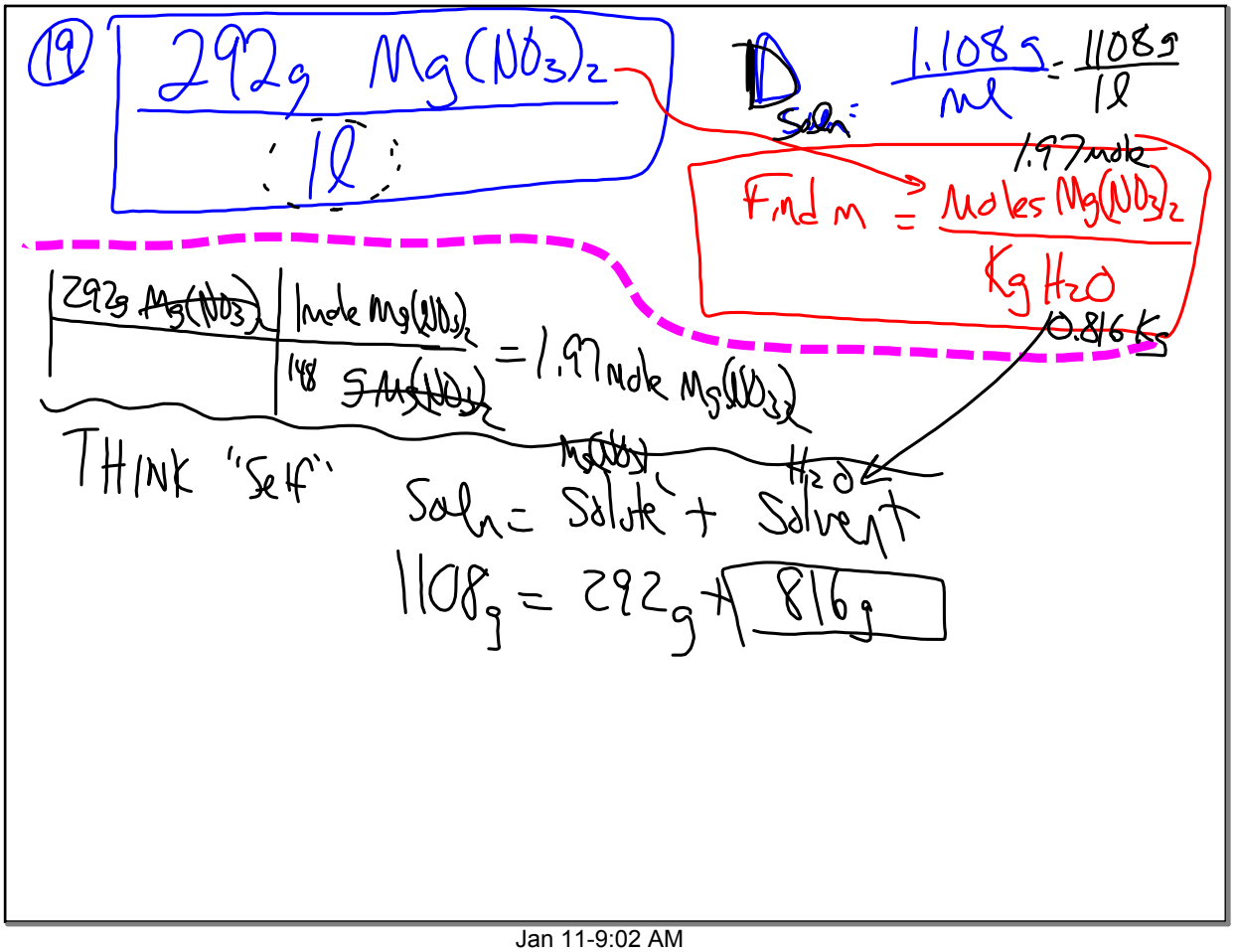
Jan 11-8:40 AM



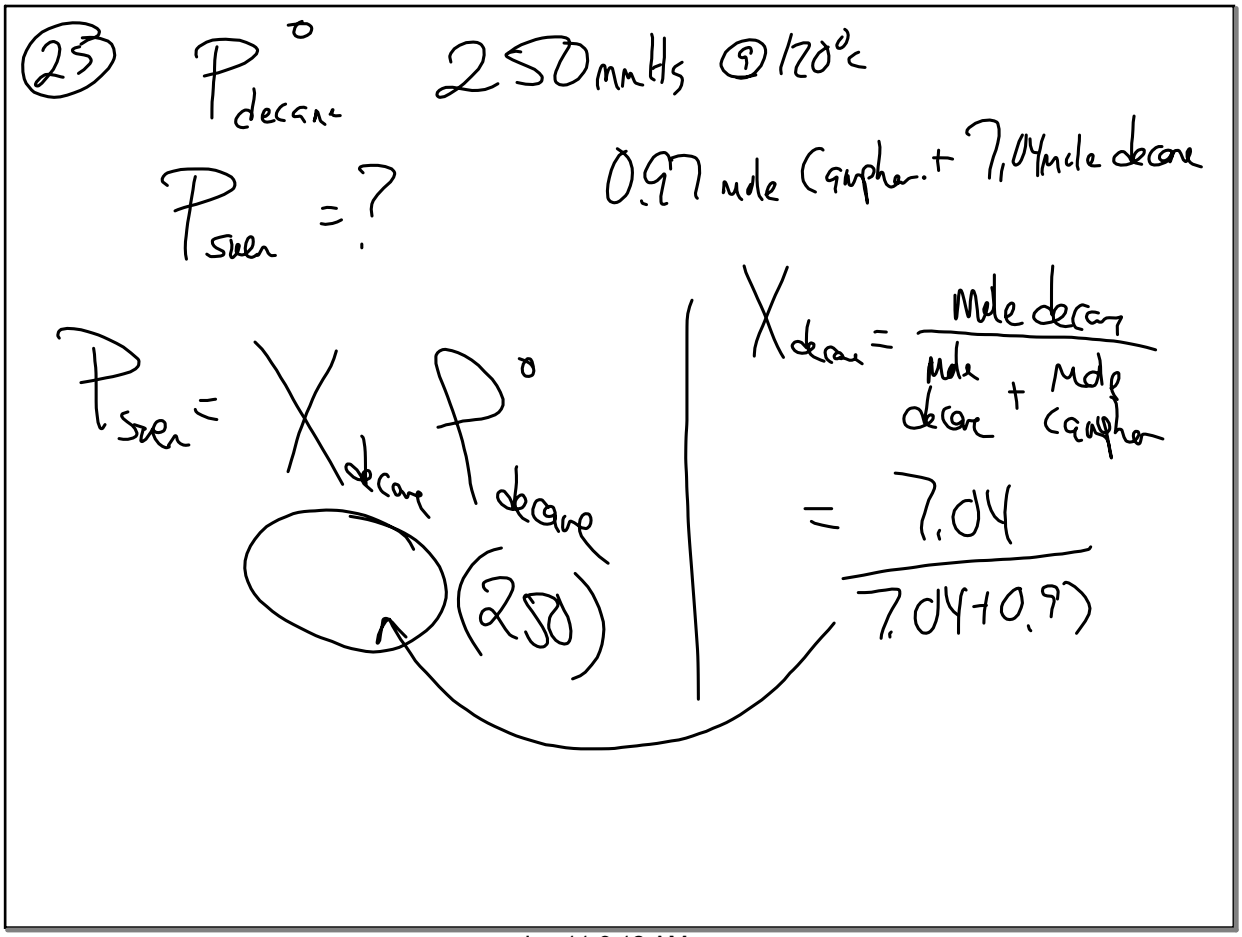
Jan 11-8:43 AM



Jan 11-8:53 AM



Jan 11-9:02 AM



Jan 11-9:12 AM

(24) $\Delta BP = 1.04$

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

$1.04 = (0.52 * 1) i$

$i = 2$ ions

Jan 11-9:15 AM