

PS 10
④

$T = 25^\circ\text{C}$
 N_2
 $P = 2 \text{ atm}$

$T = 25^\circ\text{C}$
 O_2
 $P = 4.5 \text{ atm}$

P_{new}

$PV = nRT$
 $n = \frac{PV}{RT} = \frac{2(0.25)}{(0.08206)(298)}$
 $n_{N_2} = 0.02 \text{ Mole } N_2$

$n_{O_2} = \frac{PV}{RT} = \frac{4.5(1)}{(0.08206)(298)}$
 $n_{O_2} = 0.184 \text{ Mole } O_2$

$V_{\text{new}} = 1250 \text{ mL}$
 $\text{NEW } 1.25 \text{ L}$

$PV = nRT$
 $P(1.25) = (0.204 + 0.184)(298)$
 $P = 4 \text{ atm}$

⑦

~~12.28 g H₂~~
~~100 L~~
~~400 K~~
~~2 atm~~

$n = \frac{PV}{RT} = \frac{2(100)}{0.08206(400)}$
 $\rightarrow 6.09 \times 10^{-3} \text{ Mole } H_2$

$\frac{12.28}{6.09 \times 10^{-3}} = \frac{9.49}{x}$

~~9.49 g H₂~~ ✓ → 4.745 mole
~~100 L~~ ✓
~~353 K~~ ✓
~~2 atm~~ ✓

$PV = nRT$
 $2(V) = 4.74(0.08206)(353)$
 $V = 68 \text{ mL}$

⑨

$$23^{\circ} = P_{H_2O} = 21.07 \text{ torr}$$

$$P_{\text{atm}} = 735 \text{ torr}^{\text{dry}}$$

$$V = 568 \text{ ml}$$

$$P_{H_2 + \text{water}} = 735 + 21 = 756 \text{ mmHg}$$

$$P_1 V_1 = P_2 V_2$$

$$(756 \text{ mmHg}) (568 \text{ ml}) = 735 \text{ mmHg} (V_2)$$

$$584.23 \text{ ml}$$

⑩

$$\frac{V_1}{T_1} = \frac{V_2}{T_2}$$

$$\frac{V_1}{V_2} = \frac{T_1}{T_2}$$

$$V_2 = \frac{V_1 T_2}{T_1}$$

⑪

$$\frac{V_1}{T_1} = \frac{V_2}{T_2}$$

$$\frac{3.90}{300\text{K}} = \frac{V}{284}$$

$$PV = nRT \quad (\text{STP})$$

0°C
1 atm
1 mole

$$R = \frac{PV}{nT} = \frac{1 \text{ atm} (22.4 \text{ l})}{1 \text{ mole} (273 \text{ K})}$$

$$= 0.08206 \frac{\text{l-atm}}{\text{mole-K}}$$

$$(18) \quad PV = nRT$$

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

$$d = \frac{g}{V} = \frac{P(MW)}{RT}$$

$$d = \frac{P(MW)}{RT}$$

$$\frac{2.104}{1} = \frac{(1.31) MW}{(0.08206)(303)}$$

$$MW = 40 \text{ g/mole}$$

$$P_{\text{partial}} = X_{\text{fraction}} P_{\text{TOTAL}}$$

$$P_{\text{He}} = 1.5$$

$$P_{\text{Ne}} = 2.0$$

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

$$P_{\text{T}} = 8.4$$

$$P_{\text{Ar}} = X_{\text{Ar}} (8.4 \text{ atm})$$

$$4.9 = X_{\text{Ar}} (8.4)$$

$$X_{\text{Ar}} = 0.583$$

$$P_{\text{T}} = 4 \text{ atm} \quad P_{\text{Z}} = 2.75 \text{ atm} \quad P_{\text{X}} = 1.25$$

$$n_{\text{T}} = 16 \text{ moles} \quad n_{\text{Z}} = 11 \quad n_{\text{X}} = 5$$

$$P_{\text{X}} = X_{\text{X}} P_{\text{T}}$$

$$1.25 = X_{\text{X}} 4$$

$$X_{\text{X}} = 0.3125$$

$$X_{\text{Z}} = 0.6875$$

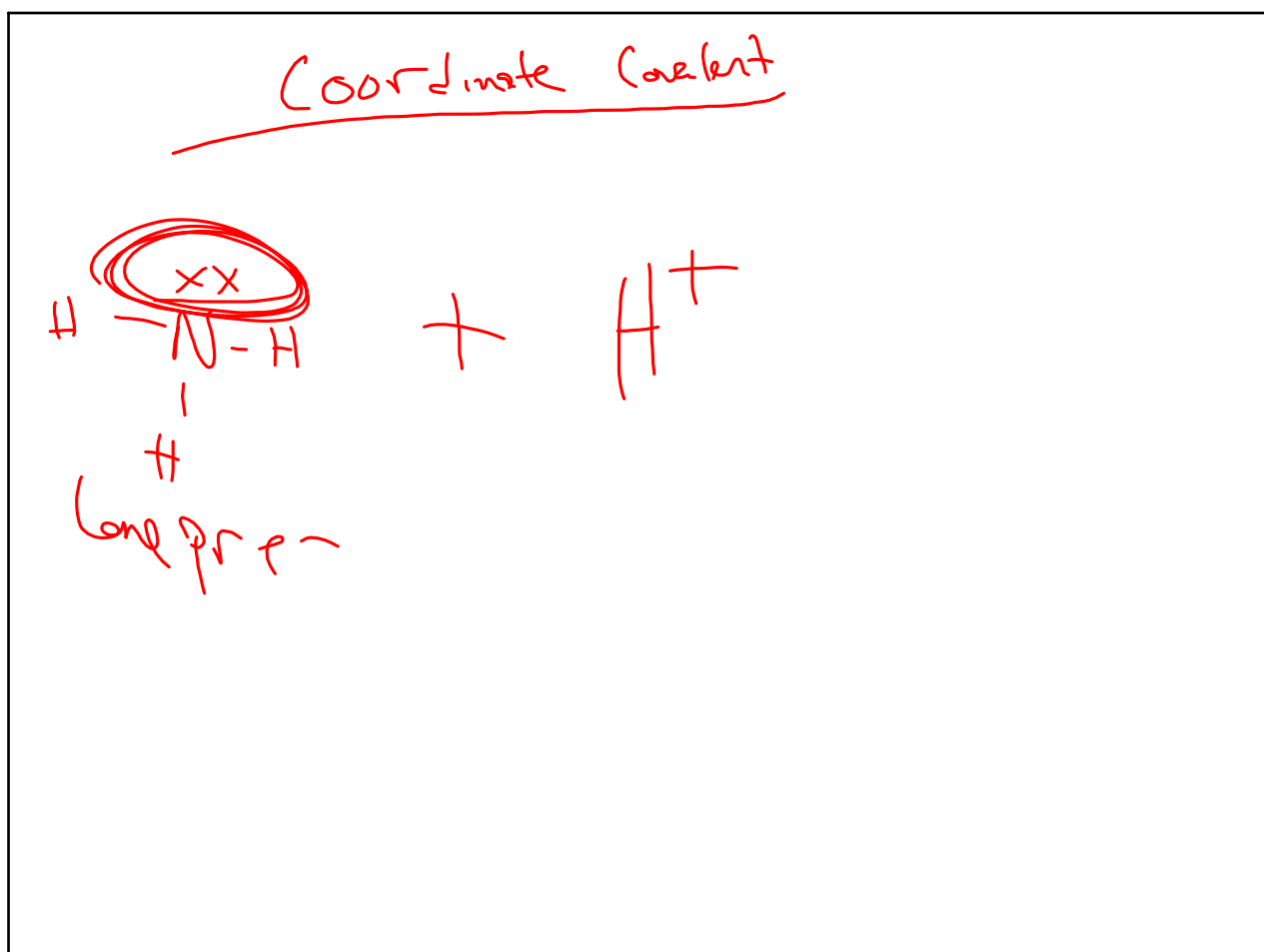
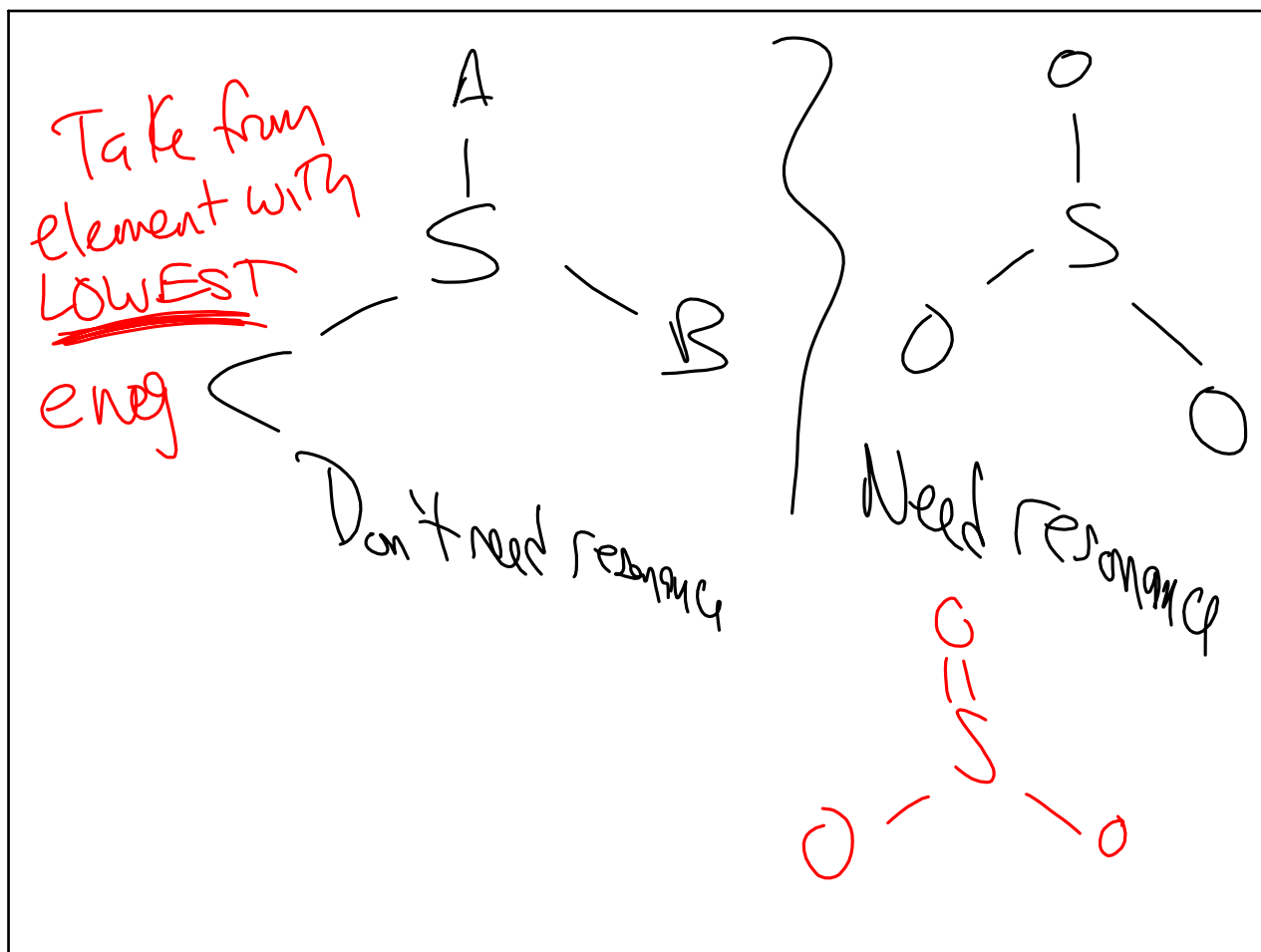
$$X = \frac{\text{Part}}{\text{Whole mixture}} = \frac{5}{16}$$

(22)

<u>He</u>	+	<u>Ne</u>	=>	<u>He + Ne</u>
3L		4.5L		9L
5.6 atm		3.6 atm		Find P_T
25°C		25°C		$PV = nRT$
n_{He}	+	n_{Ne}	=	$P(9) = \underline{\quad} (0.08205)(298)$

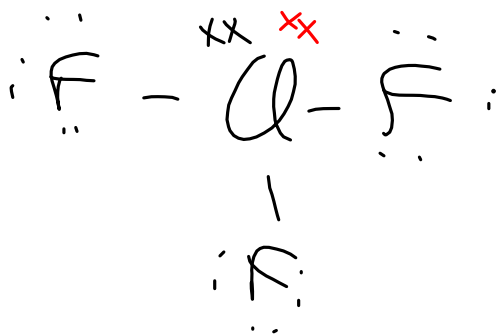
(23)

<u>A</u>		<u>B</u>	}	<u>TOTAL</u>
0.32 mole		0.56 mole		0.95 atm
		$P_B = X_B P_T$		
		$P_B = \frac{0.56}{0.56 + 0.32} (0.95)$		



$$QF_3$$

$$7 + 3(7) = 28 - 6 = 22 - 18 = 4 - 2 = 2$$



$$SF_2$$

$$6 + 2(7) = 20 - 4 = 16 - 12 = 4$$

