

Exercice 7<sup>e</sup>: On a  
 $P = 1 \text{ atm}$   
 $T = 300 \text{ K}$

$$\begin{cases} m(\text{H}_2) = 0,15 \text{ g} \\ m(\text{N}_2) = 0,70 \text{ g} \\ m(\text{NH}_3) = 0,35 \text{ g} \end{cases}$$

$$\begin{aligned} M(\text{H}) &= 1 \text{ g/mol} \\ M(\text{N}) &= 14 \text{ g/mol} \end{aligned}$$

1<sup>o</sup>//

$$\begin{aligned} n(\text{H}_2) &= \frac{0,15}{2} = 0,075 \text{ mol} \\ n(\text{N}_2) &= \frac{0,70}{28} = 0,025 \\ n(\text{NH}_3) &= \frac{0,35}{17} = 0,0206 \text{ mol} \end{aligned} \quad \left. \vphantom{\begin{aligned} n(\text{H}_2) \\ n(\text{N}_2) \\ n(\text{NH}_3) \end{aligned}} \right\} n_T = 0,1206 \text{ mol}$$

avec  $n_i = \frac{m_i}{M_i}$  et  $x_i = \frac{n_i}{n_T}$

$$x(\text{H}_2) = \frac{0,075}{0,1206} = 0,6219$$

$$x(\text{N}_2) = \frac{0,025}{0,1206} = 0,2073$$

$$x(\text{NH}_3) = \frac{0,0206}{0,1206} = 0,1708$$

2<sup>o</sup>//

$$V_T = \frac{n_T R T}{P_T} = \frac{0,1206 \times 0,082 \times 300}{1} = 2,967 \text{ L}$$

3<sup>o</sup>// On a

$$P_i = x_i P_T$$

$$\begin{cases} P_{\text{H}_2} = 0,6219 \text{ atm} \\ P_{\text{N}_2} = 0,2073 \text{ atm} \\ P_{\text{NH}_3} = 0,1708 \text{ atm} \end{cases}$$