## Subiectul B. ELEMENTE DE TERMODINAMICĂ

itul B. E	ELEMENTE DE TERMODINAMICA
II.a	
	$N_1 = v_1 N_A$
	$p_1V = v_1 RT_1$
	$N_1 = v_1 N_A$ $p_1 V = v_1 R T_1$ $N_1 = \frac{p_1 V}{R T_1} N_A$
	Rezultat final: $N_1 = 8.7 \cdot 10^{26}$
b.	
	$p_1V = \frac{m_1}{\mu}RT_1$
	$p_1 = \frac{\rho_1}{\mu} R T_1$
	$\rho_1 V = \frac{m_1}{\mu} R T_1$ $\rho_1 = \frac{\rho_1}{\mu} R T_1$ $\rho_1 = \frac{\mu \rho_1}{R T_1}$
	Rezultat final: $\rho_1 = \frac{80}{8,31} \cong 9,6 \mathrm{kg/m^3}$
C.	
	$\rho_2 V = \frac{m_2}{\mu} R T_2$ $m_2 = \frac{m_1}{2}$ $\rho_1 V = \frac{2 m_2}{\mu} R T_1$ $\rho_2 = \rho_1 \frac{T_2}{2 T_1}$
	$m_2 = \frac{m_1}{2}$
	$\rho_1 V = \frac{2 m_2}{\mu} R T_1$
	$p_2 = p_1 \frac{T_2}{2T_1}$
	Rezultat final: $p_2 = 2.8 \text{MPa}$
d.	
	$m_{He} = \frac{\mu_{He}}{N_A}$
	Rezultat final: $m_{He} = 6.6 \cdot 10^{-27} \text{kg}$