

38.)

$$V = 20 \text{ l} = 0,02 \text{ m}^3 = \text{'all}$$

$$P_1 = 10 \text{ MPa}$$

$$T_1 = 0^\circ\text{C} = 273 \text{ K}$$

$$\Delta m = -0,86 \text{ kg}$$

$$\begin{cases} \rho_0 = 1,43 \frac{\text{kg}}{\text{m}^3} \\ T_0 = 0^\circ\text{C} \\ P_0 = 100 \text{ kPa} \end{cases} \quad \text{O}_2$$

$$\text{a) } T = \text{'all} \quad P_2 = ?$$

$$\text{b) } T_3 = ? \quad P_3 = P_1$$

$$\boxed{pV = nRT} \quad \boxed{\rho = \frac{m}{V}} \quad \boxed{M = \frac{m}{n}}$$

$$\text{a) } pV = nRT$$

$$\rho = \frac{m}{V} = \frac{nM}{V} = \frac{PM}{RT} \quad M, R, T \text{ 'all}$$

$$\frac{\rho_1}{\rho_0} = \frac{P_1}{P_0} \rightarrow \underline{\underline{\rho_1}} = \rho_0 \frac{P_1}{P_0} = \dots$$

$$\underline{\underline{m_1}} = \rho_1 V = \dots$$

$$\underline{\underline{m_2}} = m_1 + \Delta m = \dots$$

$$\frac{n_2}{n_1} = \frac{m_2}{m_1} = \dots$$

$$\underline{\underline{pV = nRT}} \quad \text{'all} \quad \frac{P}{n} = \frac{RT}{V} = \text{'all}$$

$$\frac{P_1}{n_1} = \frac{P_2}{n_2} \rightarrow \underline{\underline{P_2}} = \frac{n_2}{n_1} P_1 = \dots$$

b)

$$\underline{\underline{pV = nRT}} \quad \frac{P}{T} = \frac{nR}{V} = \text{'all}$$

$$\frac{P_2}{T_2} = \frac{P_3}{T_3} \rightarrow \underline{\underline{T_3}} = \frac{P_3}{P_2} T_2 = \dots$$