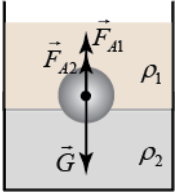
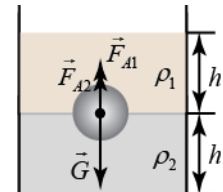


Problema 8.1

a)	$\rho = \frac{m}{V} \Rightarrow m = \rho V$	0.5 p.
b)	<p>pentru desen (prezentarea forțelor): (0.5 p.)</p> $F_{A1} + F_{A2} = G \quad \text{(0.5 p.)}$ $\begin{cases} (V_1 + V_2)\rho g = V_1\rho_1 g + V_2\rho_2 g \\ V_1 + V_2 = V \end{cases} \quad \text{(1.0 p.)}$ $\frac{V_1}{V} = \frac{\rho - \rho_2}{\rho_1 - \rho_2} \quad \text{(0.5 p.)} \quad \frac{V_2}{V} = \frac{\rho - \rho_1}{\rho_2 - \rho_1} \quad \text{(0.5 p.)}$	 <p align="right">3.0 p.</p>
c)	<p>pentru desen (prezentarea forțelor): (0.5 p.)</p> $V_1 = V_2 \Rightarrow \frac{\rho_2 - \rho}{\rho_2 - \rho_1} = \frac{\rho - \rho_1}{\rho_2 - \rho_1} \quad \text{(0.5 p.)} \Rightarrow$ $\Rightarrow \rho = \frac{\rho_1 + \rho_2}{2} \quad \text{(0.5 p.)}$ <p>Numeric $\rho = \frac{0,9 \frac{\text{g}}{\text{cm}^3} + 13,6 \frac{\text{g}}{\text{cm}^3}}{2} = 7,25 \frac{\text{g}}{\text{cm}^3} \quad \text{(0.5 p.)}$</p>	 <p align="right">2.0 p.</p>
d)	<p>Mișcarea în lichidul 1:</p> $L_1 = \Delta E_{c1} \quad \text{(0.5 p.)}$ $(F_{A1} - G)h = \frac{mv^2}{2} - \frac{mv_0^2}{2} \quad (1) \quad \text{(0.5 p.)}$ <p>Mișcarea în lichidul 2:</p> $L_2 = \Delta E_{c2} \quad \text{(0.5 p.)}$ $(F_{A2} - G)h = 0 - \frac{mv^2}{2} \quad (2) \quad \text{(0.5 p.)}$ <p>Din (1) și (2):</p> $(F_{A1} - G)h = (F_{A2} - G)h - \frac{mv_0^2}{2} \quad \text{(1.0 p.)} \Rightarrow$ $\Rightarrow (F_{A2} - F_{A1})h = \frac{mv_0^2}{2} \quad \text{(0.5 p.)} \Rightarrow$ $v_0 = \sqrt{\frac{2hg}{\rho}(\rho_2 - \rho_1)} \quad \text{(0.5 p.)}$ $v_0 = \sqrt{\frac{2 \cdot 10 \cdot 0,4}{7,25}(13,6 - 0,9)} \approx 3,74 \text{ m/s} \quad \text{(0.5 p.)}$	4.5 p.
Total max		10.0 p.