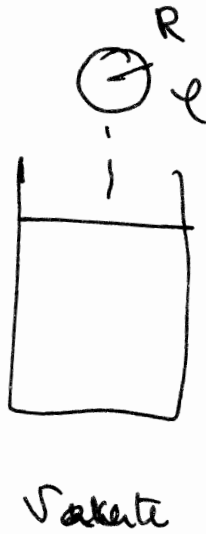
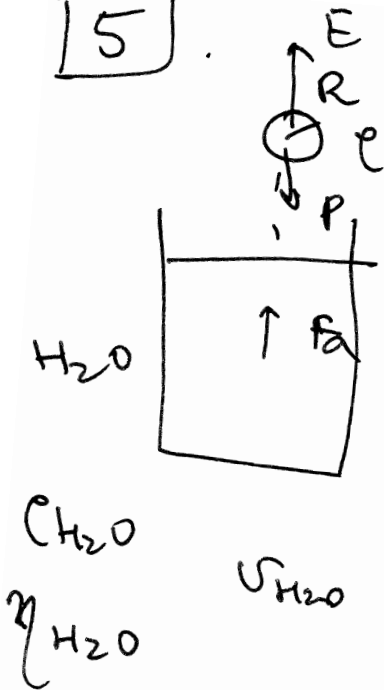


5.



Acete de siliciene

$$\rho_{\text{acete}} = \rho_{\text{H}_2\text{O}}$$

$$\eta_{\text{acete}} > \eta_{\text{agua}}$$

$$? \frac{v_{\text{H}_2\text{O}}}{v_{\text{acete}}} ?$$

La ecuación de movimiento de la esfera en el H₂O es:
 Como $Re < 1 \Rightarrow F_a = 6\pi R \eta v$

$$P - E - F_a = m \ddot{x} \Rightarrow \text{alcanza } v_{\text{acete}} \text{ cuando } \ddot{x} = 0 \Rightarrow$$

$$\Rightarrow P = E + F_a \Rightarrow mg = m_L \cdot g + 6\pi R \eta_{\text{H}_2\text{O}} v_{\text{H}_2\text{O}}$$

$$\frac{4}{3} \pi R^3 \rho g = \frac{4}{3} \pi R^3 \rho_{\text{H}_2\text{O}} \cdot g + 6\pi R \eta_{\text{H}_2\text{O}} \cdot v_{\text{H}_2\text{O}} \quad (\text{I})$$

De igual forma para el acete de siliciene es:

$$\frac{4}{3} \pi R^3 \rho g = \frac{4}{3} \pi R^3 \rho_{\text{acete}} \cdot g + 6\pi R \eta_{\text{acete}} \cdot v_{\text{acete}} \quad (\text{II})$$

$$\frac{4}{3} R^3 g (\rho - \rho_{\text{H}_2\text{O}}) = 6 \eta_{\text{H}_2\text{O}} v_{\text{H}_2\text{O}}$$

$$\frac{4}{3} R^3 g (\rho - \rho_{\text{acete}}) = 6 \eta_{\text{acete}} \cdot v_{\text{acete}} \quad (\text{Dividiendo ambas}).$$

$\rho_{\text{H}_2\text{O}} > \rho_{\text{acete}}$
 $\eta_{\text{acete}} > \eta_{\text{H}_2\text{O}}$

$$1 = \frac{\eta_{\text{H}_2\text{O}} \cdot v_{\text{H}_2\text{O}}}{\eta_{\text{acete}} \cdot v_{\text{acete}}} \Rightarrow$$

$$\frac{v_{\text{H}_2\text{O}}}{v_{\text{acete}}} = \frac{\eta_{\text{acete}}}{\eta_{\text{H}_2\text{O}}}$$