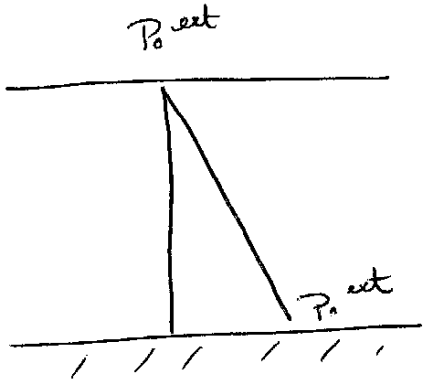

Datos:

$R_0 = 10$ cm

$P_0^{ext} = 1$ atm

$\sigma = 2$ N/m

$\rho = 1$ TON/m^3

$g = 9{,}8$ m/s^2

$$P_0^{int} = P_0^{ext} + \frac{2\sigma}{R_0} \quad (1)$$

$$P_1^{int} = P_1^{ext} + \frac{2\sigma}{R_1} \quad (2)$$

$$P_0^{int} \cdot V_0 = P_1^{int} \cdot V_1 \Rightarrow P_0^{int} \cancel{\frac{4}{3}\pi} R_0^3 = P_1^{int} \cancel{\frac{4}{3}\pi} R_1^3$$

$$P_1^{int} = P_0^{int} \left(\frac{R_0}{R_1}\right)^3 \quad (3)$$

$$P_1^{ext} = P_0^{ext} + \rho g Z \quad (4)$$

Resolviendo:

$$P_1^{ext} + \frac{2\sigma}{R_1} = \left(P_0^{ext} + \frac{2\sigma}{R_0}\right)\left(\frac{R_0}{R_1}\right)^3$$

$$P_0^{ext} + \rho g Z + \frac{2\sigma}{R_1} = \left(P_0^{ext} + \frac{2\sigma}{R_0}\right)\left(\frac{R_0}{R_1}\right)^3$$

$$R_1^3 P_0^{ext} + \rho g Z R_1^3 + 2\sigma R_1^2 = \left(P_0^{ext} + \frac{2\sigma}{R_0}\right)\left(R_0\right)^3$$

$$\boxed{\left(P_0^{ext} + \rho g Z\right) R_1^3 + 2\sigma R_1^2 = \left(P_0^{ext} + \frac{2\sigma}{R_0}\right) R_0^3}$$

$$\underline{R_1 = 7{,}9 \text{ cm}}$$