

Gabarito Lista 1 - Fluidos

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1. $H = h + \frac{4M}{\rho\pi D^2}.$

2. (a) $E = \rho_{\text{ar}} \cdot \frac{4}{3}\pi R^3 \cdot g.$

(b) $h = \frac{l}{m} \left(\rho_{\text{ar}} \cdot \frac{4}{3}\pi R^3 - M \right).$

3. (a) $V_{\text{sub}} = \frac{[\rho_g + (\rho - \rho_g)f]}{\rho_l} V.$

(b) permanece, permanece, abaixa.

4. (a) $p(y) = p_0 e^{-\frac{\rho_0 g}{p_0} y}.$

(b) $\rho(y) = \rho_0 e^{-\frac{\rho_0 g}{p_0} y}.$

(c) $p_2 = p_1/2 = p_0/4.$

(d) $\rho = 0,41 \text{ kg/m}^3$ e $p = 3,2 \times 10^4 \text{ Pa}.$

5. (a) $v = \sqrt{\frac{2gh}{\left[1 - \left(\frac{a}{A}\right)^2\right]}}.$

(b) $\frac{dm}{dt} = \rho a \sqrt{\frac{2gh}{\left[1 - \left(\frac{a}{A}\right)^2\right]}}.$

(c) $v = \sqrt{2gh}$ e diminui.

6. $P = P_0 + \rho gh + \rho \frac{v^2}{2}.$

7. (a) $3Av$ em ambas.

(b) $u = 3v.$

(c) $P = P_0 + \rho gh + 4\rho v^2.$

8. $v = \sqrt{\frac{2(\rho' - \rho)gh}{\rho}}$