

FLUIDA

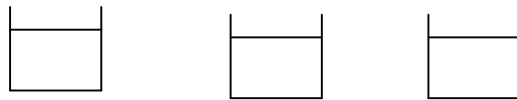
Fluida Tak Bergerak

1.
$$\rho_{\text{zat}} = \frac{m}{V}$$

2.
$$\rho_{\text{relatif}} = \frac{\rho_z}{\rho_{\text{air}}}$$
 $\rho_{\text{air}} \text{ pada } 4^{\circ}\text{C} \rightarrow 1 \frac{\text{gr}}{\text{cm}^3} = 1000 \frac{\text{kg}}{\text{m}^3}$

3.
$$\rho_c = \frac{m_A + m_B}{V_A + V_B}$$

4.
$$\rho_h = \rho_z \cdot g \cdot h$$

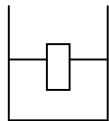


5.
$$F_h = \rho_z \cdot g \cdot h \cdot A$$

6. **Archimedes** : Gaya ke atas yang bekerja pada benda besarnya sama dengan jumlah (berat) zat cair yang dipindahkan.

$$F_A = \rho_z \cdot g \cdot h$$

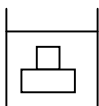
7. Terapung $\rightarrow w < F_A$ (jika dibenamkan seluruhnya)



$w = F_A' \rightarrow$ dalam keadaan setimbang

$$\rho_{bd} \cdot g \cdot v_b = \rho_z \cdot g \cdot v_2$$

8. Melayang



$$w_1 + w_2 = \rho_z \cdot g (v_1 + v_2)$$

9. Tenggelam

$$w > F_A$$

$$w_s = w - F_A$$

10. Kohesi (K)
Adhesi (A)

11. Kapilaritas

$$y = \frac{2\gamma \cos \theta}{\rho_z \cdot g \cdot r}$$

Fluida Bergerak

1.
$$Q = \frac{\text{Vol}}{t} = A \cdot v$$

2. Kontinuitas

$$A_1 v_1 = A_2 v_2$$

3. Bernoulli

$$P_1 + \rho \cdot g \cdot h_1 + \frac{1}{2} \rho \cdot v_1^2 = P_2 + \rho \cdot g \cdot h_2 + \frac{1}{2} \rho \cdot v_2^2$$

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- ρ = massa jenis
 m = massa
 v = volume
 A = luas permukaan
 P = daya tekan
 h = ketinggian dari dasar
 Q = Debit
 ρ_{relatif} = massa jenis relatif