

Jawaban Tugas Fluida Statis

1 diket : $W = 25 \text{ N}$

$F_a = 15 \text{ N}$

$\rho_{\text{air}} = 10^3 \text{ kg/m}^3$

$g = 10 \text{ m/s}^2$

Rumus : $F_a = W - W_{\text{tercelup}}$

$15 = 25 - \rho g V_t$

$\rho g V_t = 25 - 15$

$V_t = \frac{10}{\rho g}$

$V_t = \frac{10}{1000 \times 10}$

$= 10^{-3} \text{ m}^3$

masa jenis = $\rho = \frac{M}{V}$

$\rho = \frac{2,5}{10^{-3}}$

$\rho = 2,5 \cdot 10^3 \text{ kg/m}^3$

2 diket : $V_f = 75\%$

$V_b = 100\%$

$\rho_{\text{air}} = 1 \text{ gr/cm}^3$

ditanya ρ_b ?

Jwb : $\rho_b = \rho_{\text{air}} \frac{V_f}{V_b}$

$\rho_b = 1 \frac{0,75}{1}$

$\rho_b = 0,75 \text{ gr/cm}^3$

3. diket: $F_1 = 2 \text{ N}$
 $A_1 = 30 \text{ cm}^2$
 $A_2 = 900 \text{ cm}^2$

ditanya: $F_2 = \dots ?$

Jwb: $P_1 = P_2$

$$\frac{F_1}{A_1} = \frac{F_2}{A_2}$$

maka:

$$\frac{F_1}{A_1} = \frac{F_2}{A_2}$$

$$\frac{20}{30} = \frac{F_2}{900}$$

$$\underline{F_2 = 600 \text{ N}}$$

4. hukum Archimedes:

- kapal laut
- kapal selam
- Jembatan Apung

hukum Pascal:

- dongkrak hidrolik
- rem hidrolik
- pompa ban

5. diket:

$$P = 9800$$

$$\rho = 1000 \text{ kg/m}^3$$

$$g = 10 \text{ m/s}^2$$

ditanya: $H = \dots ?$

$$\text{Jwb: } P = \rho h \times g \times h$$

$$9800 = 1000 \times 10 \times h$$

$$9800 = 1000 \times h$$

$$9800 : 1000 = h$$

$$98/1 = h$$

$$98 = h$$

$$\text{Kedalaman Penyelam } h = \underline{98}$$