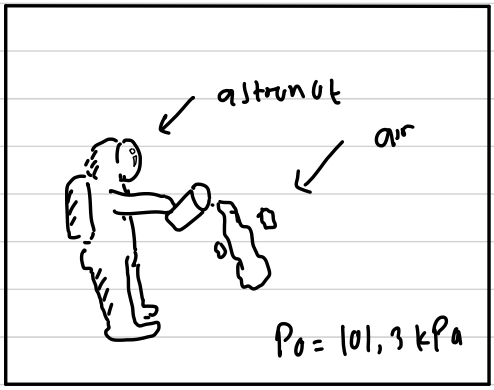
Qornain Aji
21/481769/TK/53170

Latihan Soal 4

1



Stasiun Angkasa

tekanan pada air :

$P_{air} = P_0 + \rho g h$

karena $g = 0$ maka

$P_{air} = P_0 + \rho(0) \cdot h_{air}$
$P_{air} = P_0$
$P_{air} = 101,3$ kPa =

2

ρ air laut $= 1024$

ρ air biasa $= 1000$

$\rho = 1050$
$V = 5\,m^3$
$g = 9,8\,m/s^2$

Pertama cari Fa pada air laut dan air biasa

a) Fa laut
$= \rho_{air\,laut} \cdot V_{patung} \cdot g$
$= 1024 \cdot 5 \cdot 9,8$
$= 50176$ N

b) Fa air
$= \rho_{air} \cdot V_{patung} \cdot g$
$= 1000 \cdot 5 \cdot 9,8$
$= 49000$

$W_{patung} = \rho g V$
$= 1050 \cdot 9,8 \cdot 5$
$= 514500$ N

* $T_{air\,laut} = |F_{a\,laut} - W_{patung}|$
$= |50176 - 514500|$
$T_{air\,laut} = 464324$

* $T_{air\,biasa} = |F_{air\,biasa} - W_{patung}|$
$= |49000 - 514500|$
$= 465500$

Sehingga $|T_{air\,biasa} - T_{air\,laut}|$
$= 465500 - 464324$
$= 1176$ N //

3

$A_1 = 210\,mm^2 = 21 \cdot 10^{-5}\,m^2$
$A_2 = 120\,mm^2 = 12 \cdot 10^{-5}\,m^2$

$Q_1 = Q_2$
$\frac{m^3}{s} = \frac{m^3}{s}$
$m^2 V = m^2 V$
$A_1 V_1 = A_2 V_2$

$21 \cdot 10^{-5} \cdot 2\,m/s = 12 \cdot 10^{-5} \cdot V_2$
$\frac{42}{12} = V_2$
$\frac{7}{2} = V_2 = 3,5\,m/s$ //

4. $F_{wl} = 30\,N$ $\quad \eta_{wl} = \eta_{wp}$
$F_{wp} = 10\,N$

$t = 1$ detik

$$\frac{F_{wl}}{F_{wp}} = \frac{30}{10} = \frac{\eta_{wl}\,\frac{VA}{L_{wl}}}{\eta_{wp}\,\frac{VA}{L_{wp}}}$$

$$\frac{3}{1} = \frac{1/L_{wl}}{6/L_{wp}}$$

$$3 = \frac{L_{wp}}{6\,L_{wl}}$$

$$18 = \frac{L_{wp}}{L_{wl}}$$

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$= 1 : 18$ //