GFOS 1.4.2026

1/ $W_m = W_{\vec{z}}$

$F_m = 67\,N$

$\alpha_m = 58°$

$\alpha_{\vec{z}} = 38°$

$F_{\vec{z}} = ?$

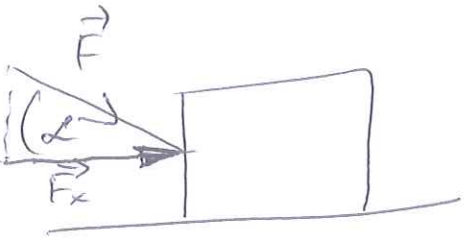
$W_m = W_{\vec{z}}$

$F_{xm} \cdot s = F_{x\vec{z}} \cdot s$

$F_m \cdot \cos\alpha_m = F_{\vec{z}} \cdot \cos\alpha_{\vec{z}}$

$67 \cdot \cos 58° = F_{\vec{z}} \cdot \cos 38°$

$F_{\vec{z}} = 45\,N$



2/ $v_0 = 20{,}0\ m/s$

$r = 0{,}300\ m$

$t = 8{,}00\ s$

$a = 1{,}50\ m/s$

$\varphi = ?$

$\varphi = \varphi_0 + \omega_0 t \pm \frac{a}{2} t^2$

$\varphi = \frac{v_0}{r} \cdot t + \frac{1}{2} \cdot \frac{a}{r} \cdot t^2$

$\varphi = \frac{20}{0{,}3} \cdot 8 + \frac{1}{2} \cdot \frac{1{,}5}{0{,}3} \cdot 8^2 = 693\ rad$

3/ $V = 120\ m^3$

$t = 20\ min = 20 \cdot 60 = 1200\ s$

$v = 3{,}0\ m/s$

$a = ?$

$Q = \frac{V}{t} = S \cdot v$

$\frac{V}{t} = S \cdot v \Rightarrow S = \frac{V}{t \cdot v}$

$S = \frac{120}{1200 \cdot 3} = 0{,}033\ m^2$

$S = a^2 \quad / \sqrt{\ }$

$a = 0{,}183\ m$

4.) $m_1 = 2{,}00\,g$, $t_{0_1} = 0\,^\circ C$ } SMRZNEMO
$m_2 = 2{,}00\,g$, $t_{0_2} = 100\,^\circ C$ } ISPARIMO

$\lambda_T = 334\ kJ/kg$

$\lambda_1 = 2260\ kJ/kg$

SMRZAVANJE: $L_T = m_1 \cdot \lambda_T = 2 \cdot 10^{-3} \cdot 334 \cdot 10^3$

$L_T = 668\ J$

ISPARAVANJE: $L_T = L_1 = m \cdot \lambda_1 \Rightarrow m = \frac{L_1}{\lambda_1}$

$m = 0{,}3 \cdot 10^{-3}\ kg = 0{,}3\ g$

OSTALO TEKUĆE VODE: $\Delta m = m_2 - m = 1{,}7\ g$

5.) $a = 18\ cm$

$f = -12\ cm$

$m = +\frac{1}{2} = +0{,}5$

$a' = ?$

$\frac{1}{a} + \frac{1}{b} = \frac{1}{f}$

$m = -\frac{b}{a} \Rightarrow +\frac{1}{2} = -\frac{b}{a}$

$b = -\frac{a}{2}$

$\frac{1}{a} + \frac{1}{-\frac{a}{2}} = \frac{1}{f}$

$-\frac{1}{a} = \frac{1}{f} \Rightarrow a = -f$

$a = 12\ cm$

$b = -6\ cm$