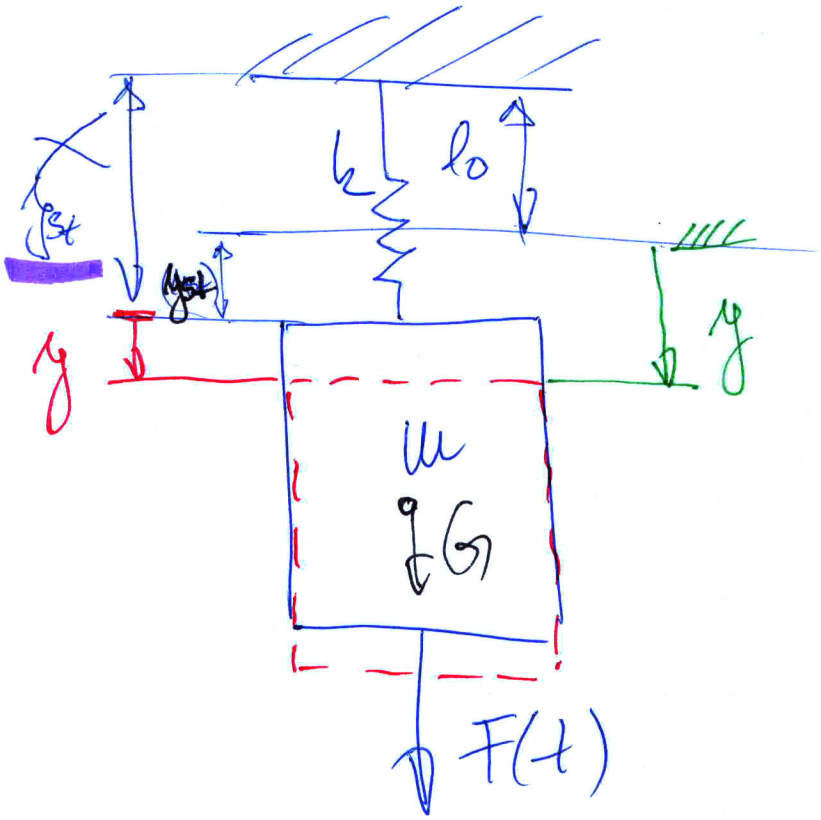
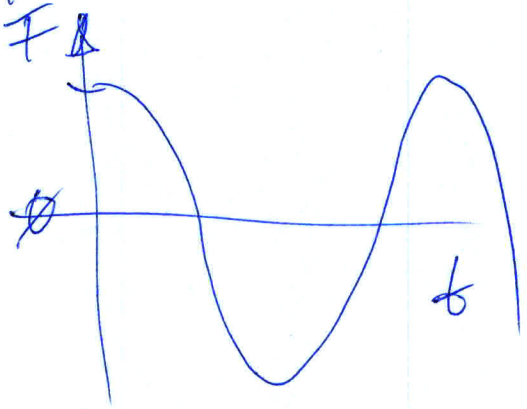


$$m \cdot \ddot{y} = \begin{cases} F(t) - k \cdot y + G \\ F(t) - k \cdot y \end{cases}$$

$$F(t) = F_0 \cdot \cos \omega t$$



Stat. r. pol.

$$G_1 = k \cdot y_{st} \Rightarrow m \cdot g \Rightarrow y_{st} = \left(\frac{m \cdot g}{k} \right)$$

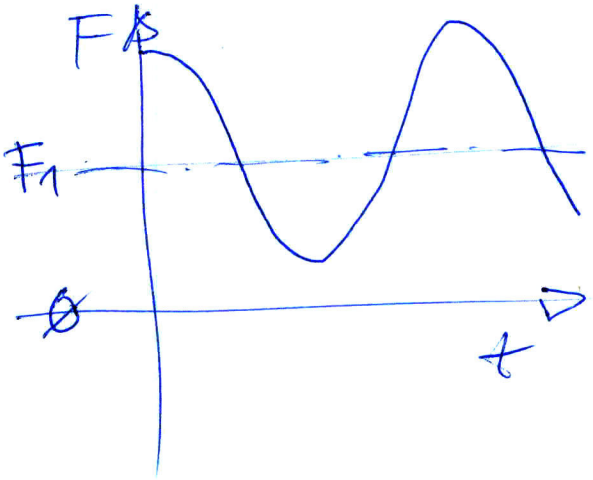
- $m g = k(y_{st} - l_0)$

deformace

$$m \cdot \ddot{y} + k \cdot y = F(t) + m \cdot g$$

$$\ddot{y} + \underbrace{\frac{c}{m}}_{\Omega^2} y = \frac{F_0}{m} \cos \omega t + g$$

$F(t) = F_1 + F_0 \cos \omega t$



Stan r. ustal.

$\dot{y}^{ust} = 0 \quad \ddot{y}^{ust} = 0$

$$0 + \frac{c}{m} y = \underbrace{\frac{F_0}{m} \cos \omega t}_{\text{wymuszenie}} + g$$

$$\frac{c}{m} y = g \Rightarrow y_{st} = \frac{m \cdot g}{c}$$

$(y_c = y_h + y_{p_1} + y_{p_2})$

$y_{p_1} = C; \quad \dot{y}_{p_1} = \ddot{y}_{p_1} = 0$

$$0 + \frac{c}{m} C = g \Rightarrow \boxed{C = \frac{m \cdot g}{c}} = y_{st}$$

$$y_h = e^{-b_r \Omega t} (A \cos \Omega_b \cdot t + B \sin \Omega_b \cdot t)$$

$$\Omega_b = \Omega \sqrt{1 - b_r^2}$$