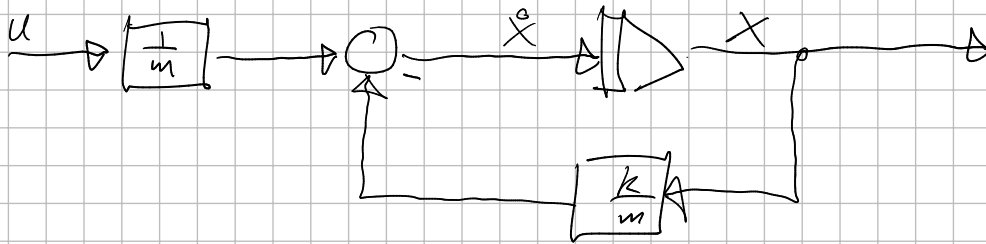


Kytilintro pering 3

$$\ddot{\theta} = \frac{1}{m} u - \frac{k}{m} \theta$$



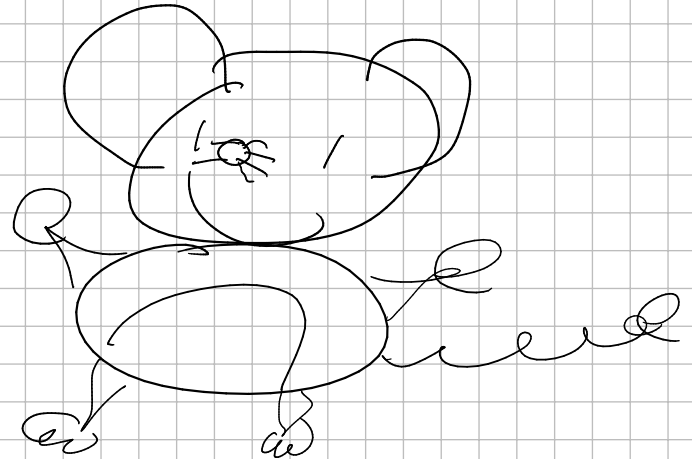
Ong 2)

a) $\sum M_z = J \ddot{\theta}$

$$M_1 = k_2 \dot{\theta}$$

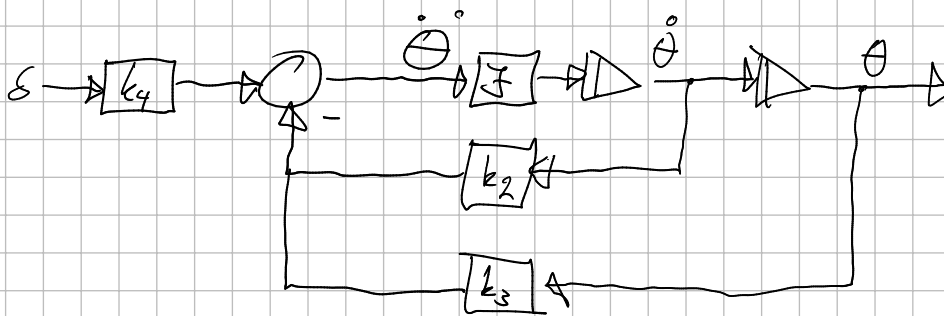
$$M_2 = k_3 \theta$$

$$u = k_4 \delta$$



$$\sum M_z = -k_2 \dot{\theta} - k_3 \theta - k_4 \delta$$

$$J \ddot{\theta} + k_2 \dot{\theta} + k_3 \theta + k_4 \delta = 0$$



Übung 3)

a) $(x, y) = (0, 0)$

$$x = \cos(-\theta) = \cos \theta$$

$$\dot{x} = -v \sin \theta$$

b) $y = \sin(-\theta) = -\sin \theta$

$$\dot{y} = -v \cos \theta$$

c) $J \ddot{\theta} + k_2 \dot{\theta} + k_3 \theta + k_4 \delta = 0$

$$\begin{bmatrix} x \\ z \end{bmatrix} = \begin{bmatrix} \cos \theta \cdot \int v dt \\ -\sin \theta \cdot \int v dt \end{bmatrix}$$

$$v = e^{-\frac{k}{m}\tau} \left(v_0 - \frac{u}{k} \right) + \frac{u}{k}$$

