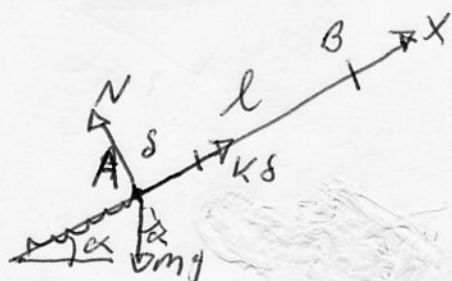
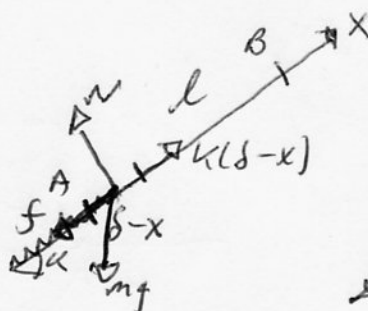


9.7

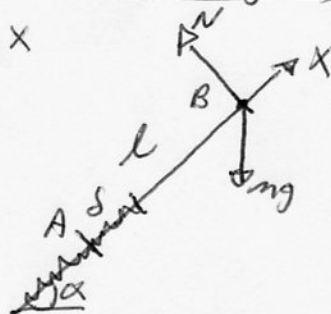
Startläge A



"Mellanläge"



Slutläge B



I A och B finns ingen friktionskraft, eftersom $v=0$

Lagen om kinetiska energin: $\Delta_{A-B} = \frac{T_B}{0} - \frac{T_A}{0}$

$$\begin{aligned} U_{A-B} &= \int_{\vec{r}_A}^{\vec{r}_B} m\vec{g} \cdot d\vec{r} + \int_{\vec{r}_A}^{\vec{r}_B} \vec{f} \cdot d\vec{r} + \int_{\vec{r}_A}^{\vec{r}_B} k(\delta-x)\vec{e}_x \cdot d\vec{r} = \\ &= \int_0^l -mg \sin \alpha dx - \int_0^l f dx + \int_0^{\delta} k(\delta-x) dx \end{aligned}$$

$\delta \leftarrow$ (upphör för $x=\delta$)

NII: $\vec{F} = m\vec{a}$ $\nearrow$: $N - mg \cos \alpha = 0$

Fyllt utbildad friktion: $f = \mu N = \mu mg \cos \alpha$

$$\Delta_{A-B} = -mgl \sin \alpha - \mu mgl \cos \alpha - \frac{1}{2} k \left[(\delta-x)^2 \right]_0^{\delta} = 0$$

$0 - \delta^2$

$$\boxed{\delta = \sqrt{\frac{2mgl}{k} (\sin \alpha + \mu \cos \alpha)}}$$

GK