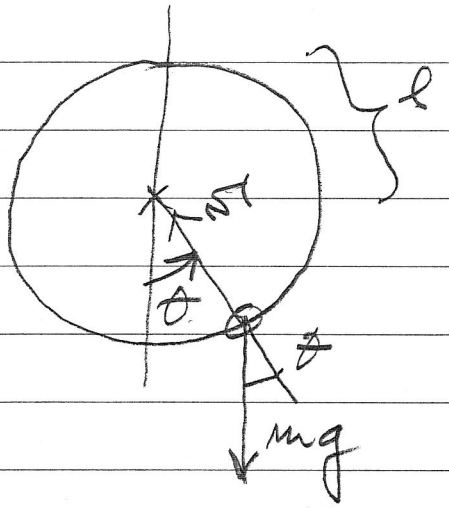
SG1102 090109

Probl. 2



$\vec{e}_r$: $m(\ddot{r} - r\dot{\theta}^2) =$

$= mg\cos\theta - N$

$r = l \Rightarrow$

$$N = mg\cos\theta + ml\dot{\theta}^2 \quad (1)$$

Bl.a. $\dot{\theta}$ m $T + V = \text{konst.}$

$$\dot{\theta}_0 = \dot{\theta}_{\theta=0}, \quad \dot{\theta}_\pi = \dot{\theta}_{\theta=\pi}$$

$$\frac{ml^2\dot{\theta}_0^2}{2} - \frac{ml^2\dot{\theta}_\pi^2}{2} = 2mgl$$

$$\dot{\theta}_\pi^2 = \dot{\theta}_0^2 - \frac{4g}{l} = \frac{6g}{l} - \frac{4g}{l} = \frac{2g}{l}$$

$(1) \Rightarrow \underline{N_\pi = -mg + 2mg = mg}$