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$$\rho = R \Rightarrow \dot{\rho} = \ddot{\rho} = 0$$

$$\Rightarrow \vec{v} = R\dot{\theta}\hat{\theta} \Rightarrow \vec{f_v} = -KR\dot{\theta}\hat{\theta}$$

Ecs. de Mov.

$$\hat{\rho}) \; -N = -mR\dot{\theta}^2$$

$$\hat{\theta}) \; -KR\dot{\theta} = mR\ddot{\theta}$$

$$\ddot{\theta} = \dot{\theta}\frac{d\dot{\theta}}{d\theta} = -\frac{K}{m}\dot{\theta}$$

$$\Rightarrow \int_{\frac{v_0}{R}}^{\dot{\theta}} d\dot{\theta} = -\frac{K}{m}\int_0^{\theta} d\theta \Rightarrow \dot{\theta} = \frac{v_0}{R} - \frac{K}{m}\theta \quad (*)$$

a) $\dot{\theta} = 0$

$$\theta^* = \frac{mv_0}{RK}$$

b) De (*) $\quad \frac{d\theta}{dt} = \frac{v_0}{R} - \frac{K}{m}\theta$

$$\int_0^{\theta} \frac{d\theta}{\frac{v_0}{R} - \frac{K}{m}\theta} = \int_0^t dt \Rightarrow t = \frac{m}{K} \ln\left[\frac{v_0/R}{v_0/R - \frac{K}{m}\theta}\right]$$

CUANDO $\theta = \theta^* = \frac{mv_0}{RK}$

$t \to \infty$

c) N CUANDO $v = \frac{v_0}{2} \Rightarrow \dot{\theta} = \frac{v}{R}$

$$N = mR\dot{\theta}^2 \Rightarrow N^* = \frac{mv_0^2}{4R}$$

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