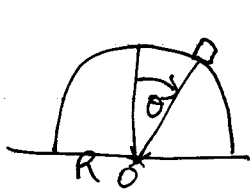
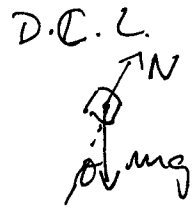
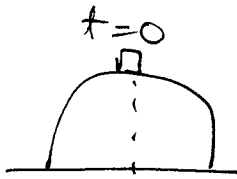


Punto P.3 Examen.



$\downarrow g$



Conservación de energía:

$$E_0 = mgR = \frac{1}{2}mv^2 + mgR\cos\theta \quad (1)$$

2ª Ley de Newton y aceleración centrípeta:

$$ma_c = -m\frac{v^2}{R} = N - mg\cos\theta \quad (2)$$

Condición de despegue: $N=0$ (3)

$$(2)/(3) \Rightarrow \frac{v_*^2}{R} = g\cos\theta_* \quad (4)$$

$$(4) \text{ en } (1) \Rightarrow mgR = \frac{1}{2}mgR\cos\theta_* + mgR\cos\theta_*$$

$$\Rightarrow \boxed{\cos\theta_* = 2/3} \quad (5)$$