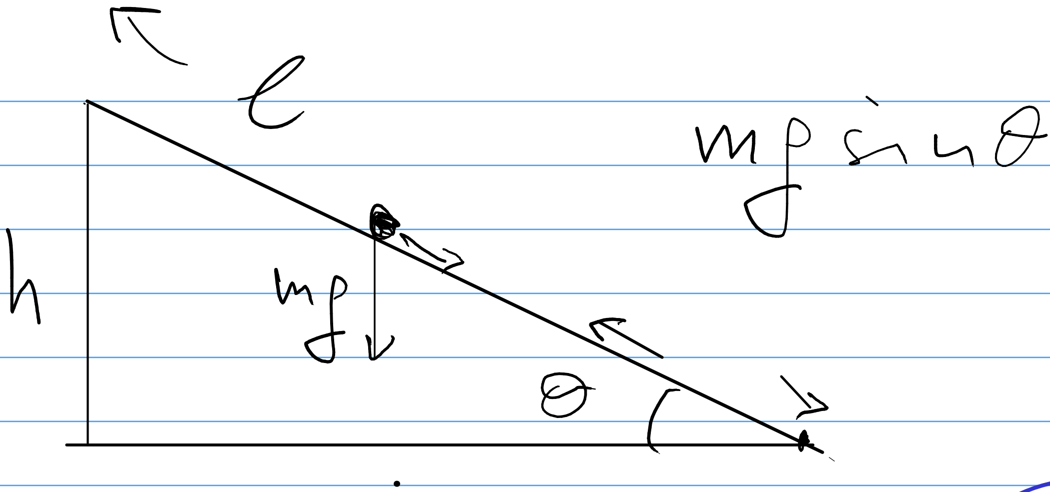
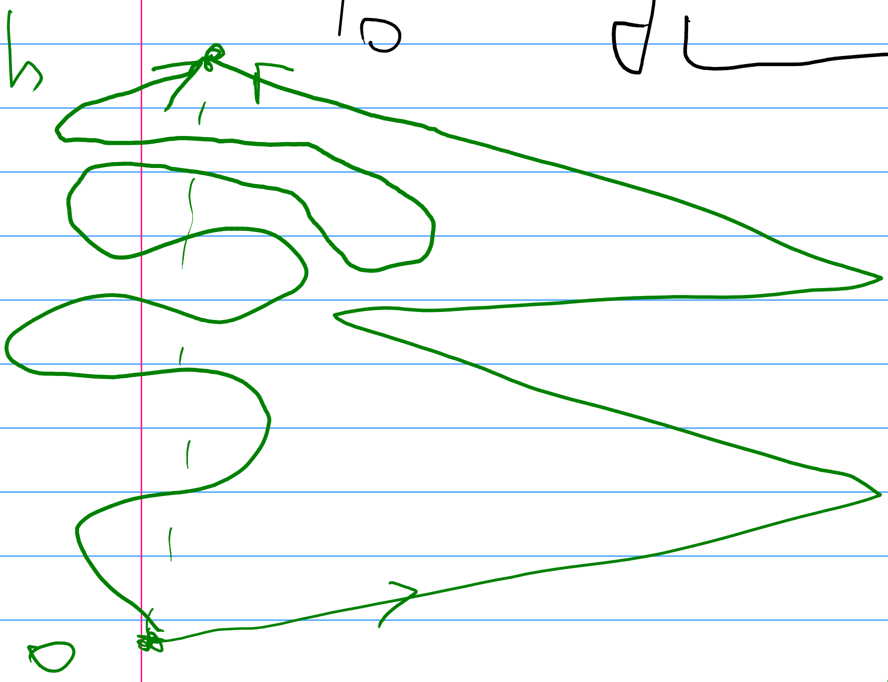


$$L\Big|_0^{\ell} = -mg\sin\theta \cdot \ell = -mgh$$



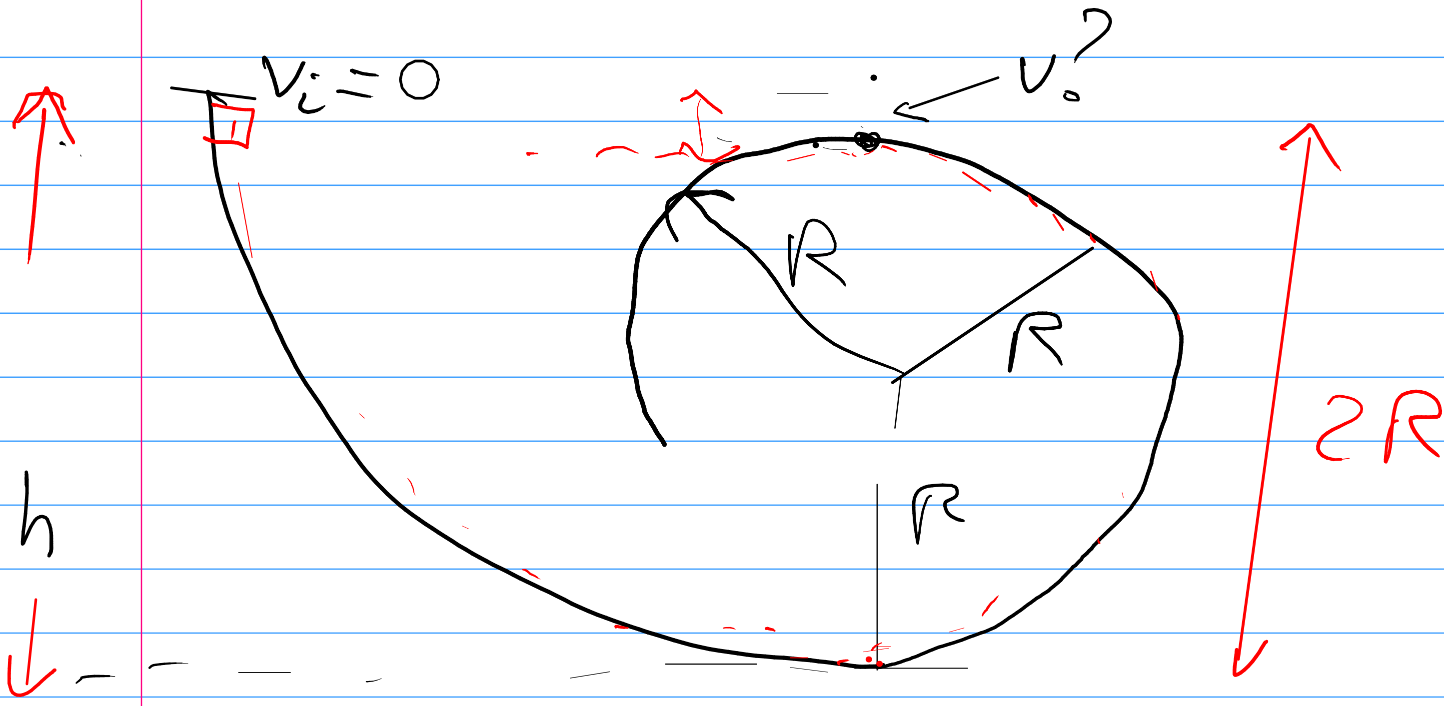
$$L_G^{\Uparrow} = -mgh$$

$$L_G^{\Downarrow} = mgh$$

$$L^{\Downarrow} = \cancel{m}gh = \Delta E_c$$

se $E_c(h)=0$

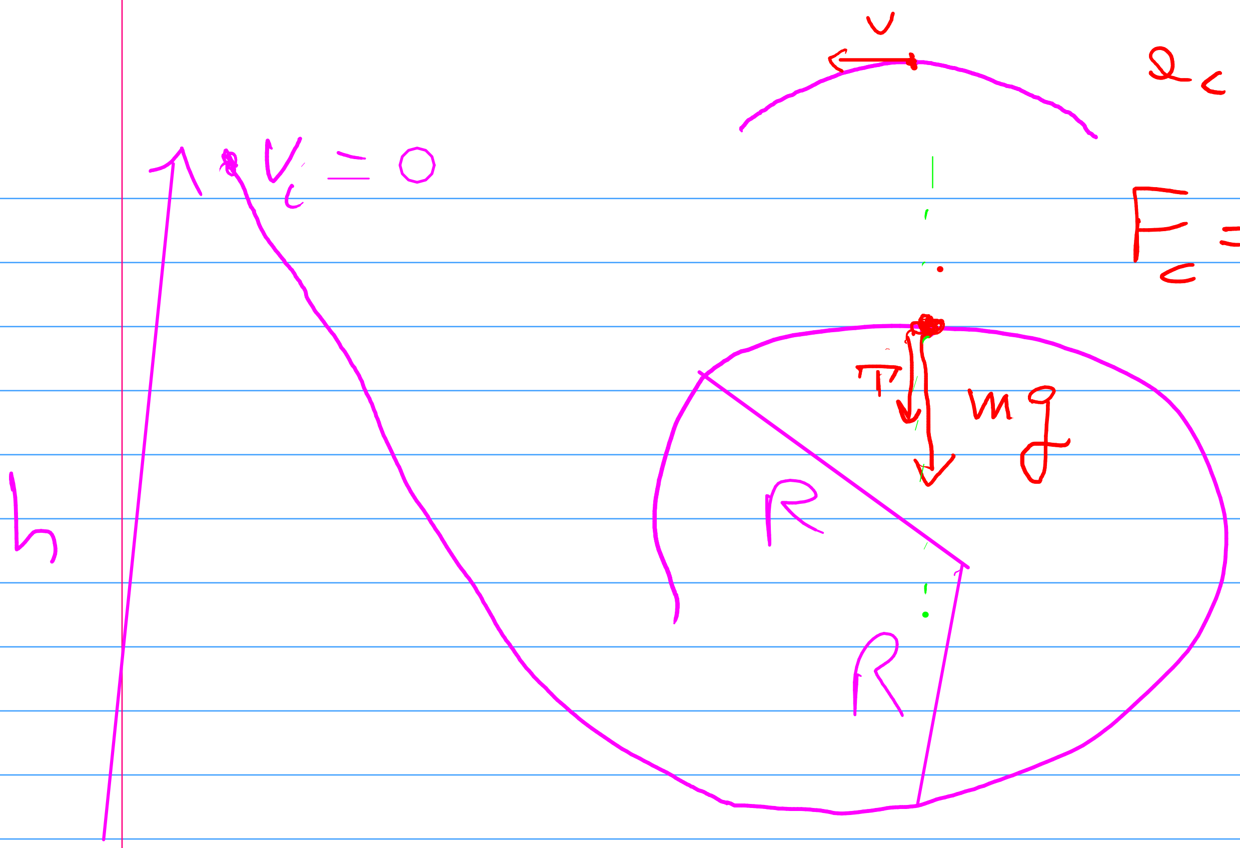
$$= \frac{1}{2}\cancel{m}v^2$$



$$mg(h-2R) = \frac{1}{2} m v^2$$

$$L_G \Big|_h^{2R} + L_A \Big|_h^{2R} = \Delta E_c \rightarrow \frac{1}{2} m v^2.$$

$$L_A \le 0$$



$a_c = \frac{V^2}{R}$

$F_c = m a_c$

$= \frac{mv^2}{R}$

$F_c = T + mg$

$T + mg = \frac{mv^2}{R}$

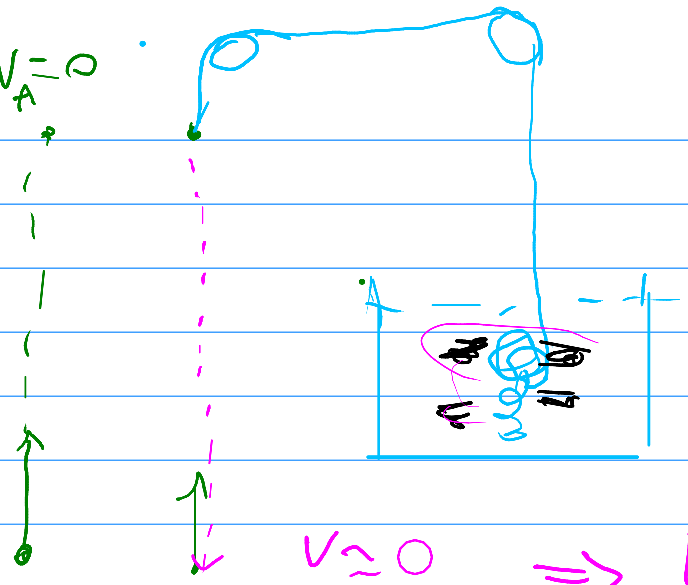
Condition : $T > 0$

$\frac{mv^2}{R} - mg > 0$

$V > V_{min}$

$h > h_{min}$??

$E_p \Leftarrow$ $E_c \simeq 0$ $V_A = 0$



$E_c \neq 0$ V_B $v \simeq 0 \Rightarrow E_c \simeq 0$!

Joule

Energia Meccanica $\Longleftrightarrow$ En Term.

$\Rightarrow$ Joule $\longleftrightarrow$ cal