

Problemas Master (Física Básica en I.G).

2.

$$m = 1 \text{ Kg}$$

$$k = 100 \text{ N/cm} = 10^4 \text{ N/m}$$

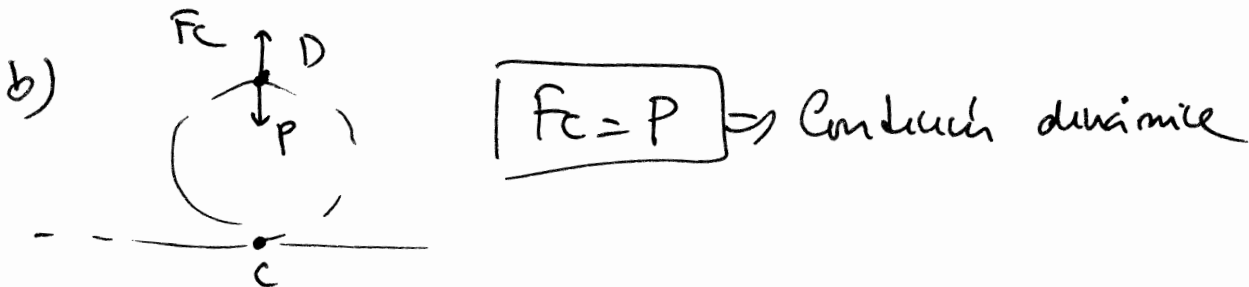
$$\Delta x = 10 \text{ cm} = 0,1 \text{ m}$$



a) $\Delta E_p = \Delta E_c$

$$\frac{1}{2} k (\Delta x)^2 = \frac{1}{2} m v_B^2 \Rightarrow v_B = \sqrt{\frac{k (\Delta x)^2}{m}}$$

$$\underline{v_B = 10 \text{ m/s} = 10 \text{ m/s}}$$

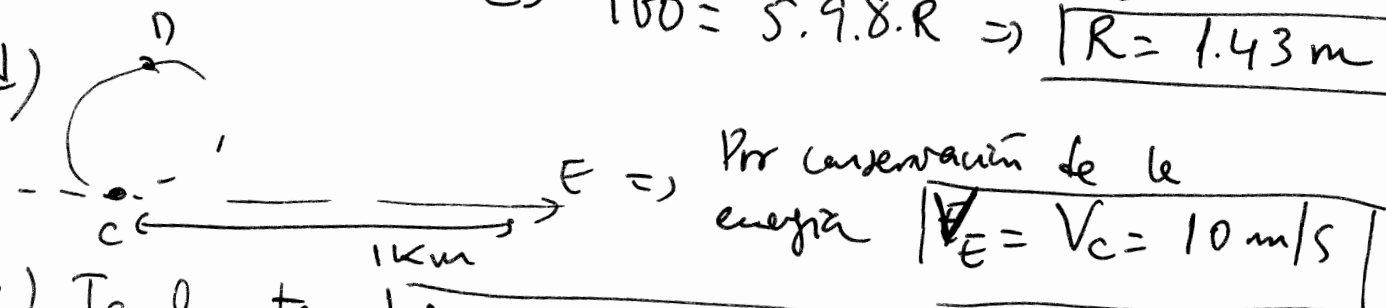


c) $F_C = P \Rightarrow m \frac{v_0^2}{R} = mg \Rightarrow v_0^2 = Rg$

$$E_c = E_D \Rightarrow \frac{1}{2} m v_c^2 = \frac{1}{2} m v_0^2 + mg 2R$$

$$v_c^2 = v_0^2 + 4gR \Rightarrow v_c^2 = 5gR$$

$$\Rightarrow 100 = 5 \cdot 9,8 \cdot R \Rightarrow \underline{R = 1,43 \text{ m}}$$



e) Igualmente $\underline{v = v_C = 10 \text{ m/s}}$