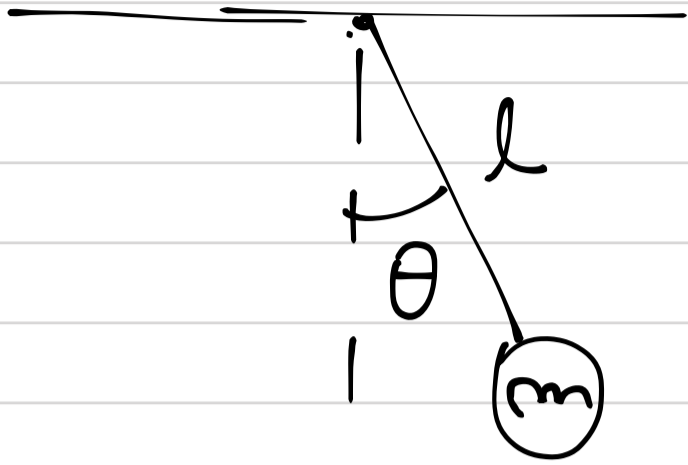
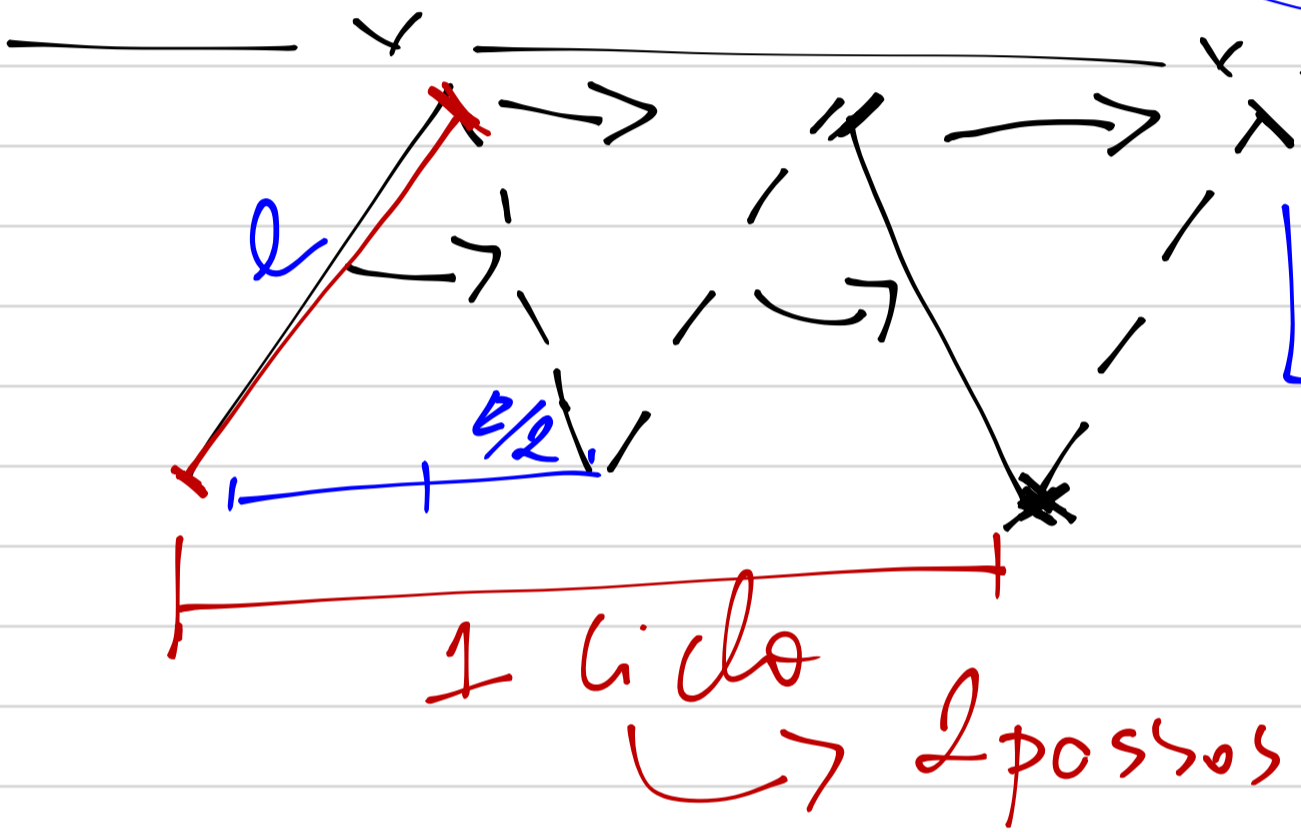


1 perna



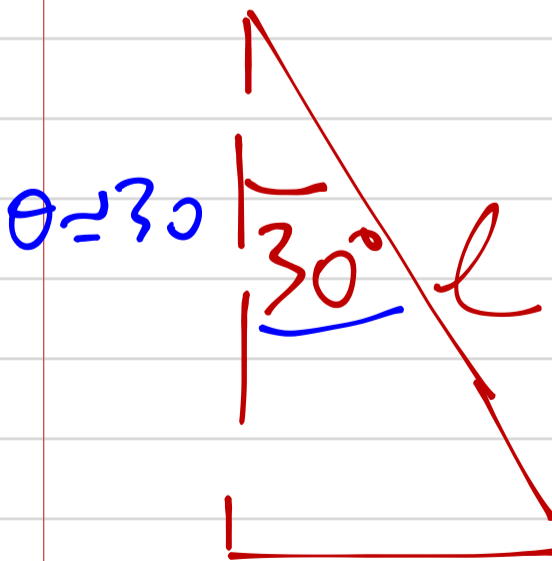
$$T = 2\pi \sqrt{\frac{l}{g}}$$



$$\omega = 2\pi f = 2\pi$$

$$\omega = \sqrt{\frac{g}{l}}$$

$$v = \frac{\Delta x'}{\Delta t} = \frac{2 \text{ passos}}{T} =$$



$$l \sin 30^\circ = l/2$$

$$v = \frac{2l}{2\pi \sqrt{\frac{l}{g}}} = \frac{\cancel{2} \sqrt{gl}}{\pi \cancel{\sqrt{l}}}$$

$$v = \frac{\sqrt{gl}}{\pi} \text{ m/s}$$

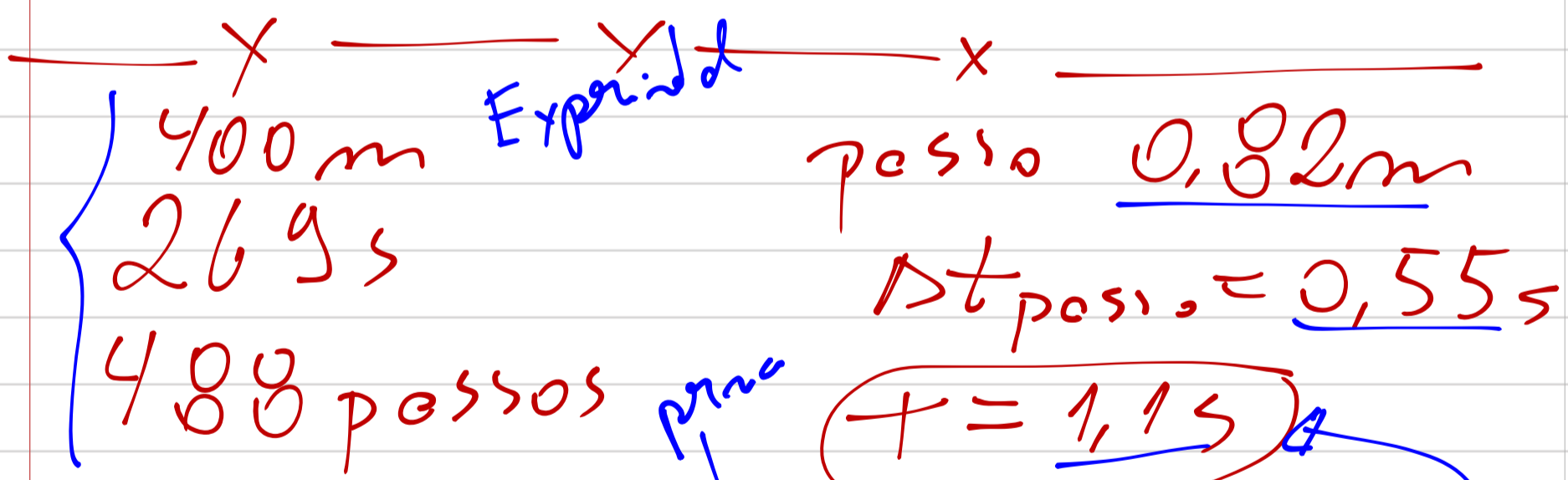
$$\Delta x = 400 \text{ m}$$

$$\Delta t = 26 \text{ s}$$

$$v_a = 1,4 \text{ g/m/s}$$

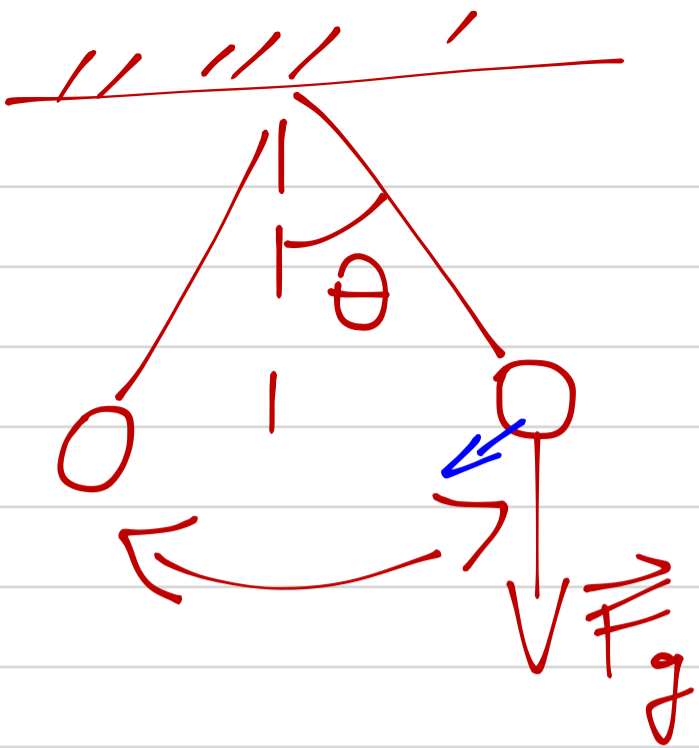
$$v_p = \sqrt{gl} = \sqrt{9,8 \cdot 0,93} = 0,96 \text{ m/s}$$

→ problemas ⇒ ângulo  
 ⇒ pêndulo  
 ⇒ ???

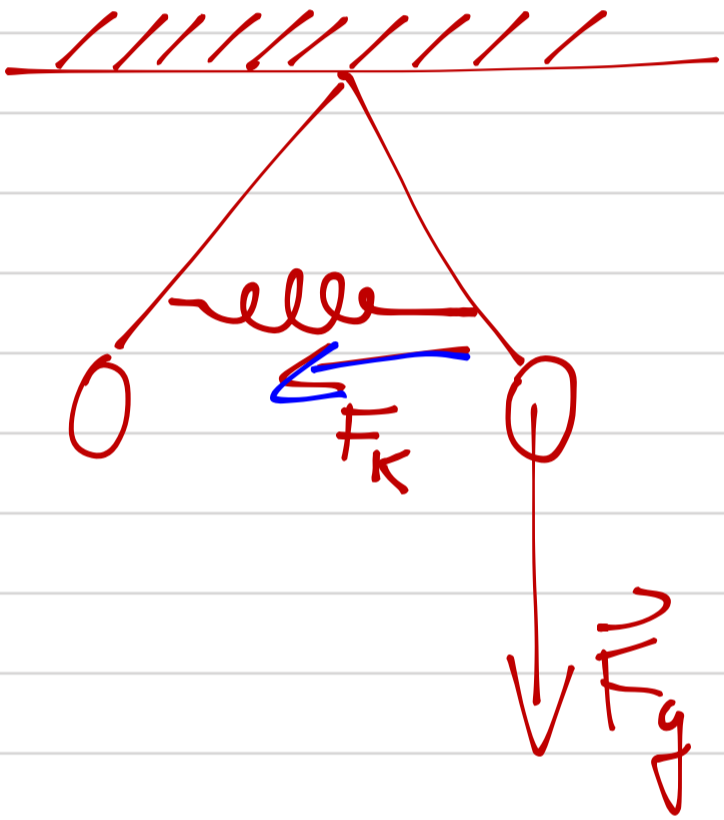


$$T = 2\pi \sqrt{\frac{0,93}{9,8}} = 1,94 \text{ s}$$





$$\omega = \sqrt{\frac{g}{l}}$$



$$\omega = \sqrt{\frac{g}{l} + \frac{2k}{m}}$$

— x — x — x —

2657/s → Potência

de caminhada

Δt → horas

$$\Delta t = \frac{h}{mv}$$

$$\Delta x = 0,335 \text{ m}$$

$$0,3$$

$$I = 0,15 \text{ m}$$

$$P = 266 \text{ J/s}$$

P/ subida

$$P =$$

$$\frac{\Delta E}{\Delta t} = \frac{\Delta K + \Delta U}{\Delta t}$$

Solugan  $\rightarrow$  diminui o tempo

$$\rightarrow \Delta K \approx \text{cte}$$

$$\rightarrow \Delta U = \text{cte}$$

$$265 \frac{\text{J}}{\text{s}} = \frac{\Delta K + \Delta U}{\Delta t} \quad P/ 1 \text{ obra}$$

1 degr → 1 passo

$$\Delta U \leq m g \Delta H = 80 \cdot 9,8 \cdot 0,15$$

$$\Delta U = 117,6 \text{ J}$$

p/ cada passo

$$\frac{1}{2} m v_0^2 \rightarrow \frac{1}{2} m v_f^2$$

$$0 \text{ m/s} \rightarrow v_c \rightarrow 0 \text{ m/s}$$

$$\Delta K = \frac{1}{2} m v_f^2 = \frac{1}{2} m v_c^2$$

$$v = \left( \frac{\Delta x}{\Delta t} \right)$$

$$\Delta x =$$

obed

$$\frac{26,5}{4} = \frac{1}{2} m \left( \frac{\Delta x}{\Delta t} \right)^2 + 117,6$$

Corpo

$\Delta t$  mecânica

$$26,5 \Delta t = \frac{80}{2} (0,335)^2 + 117,5$$

$$265 \Delta t^3 = 4,5 + 117,5 \Delta t^2$$

$$265 \Delta t^3 - 117,5 \Delta t^2 - 4,5 = 0$$

$$\frac{265}{4}$$

$$66,25 \Delta t^3 - 117,5 \Delta t^2 - 4,5 = 0$$

$$\Delta t = 1,75 \text{ s}$$

$$1,8$$

$$z = 0,25$$

↳ p/ cada degrau

$$P = \frac{\Delta K + \Delta U}{\Delta t}$$

$$66,25 = \frac{80 (0,335)^2}{2 (1,8)^2} + 117,5$$

$$66,25 =$$

$$\frac{1,36}{1,8}$$

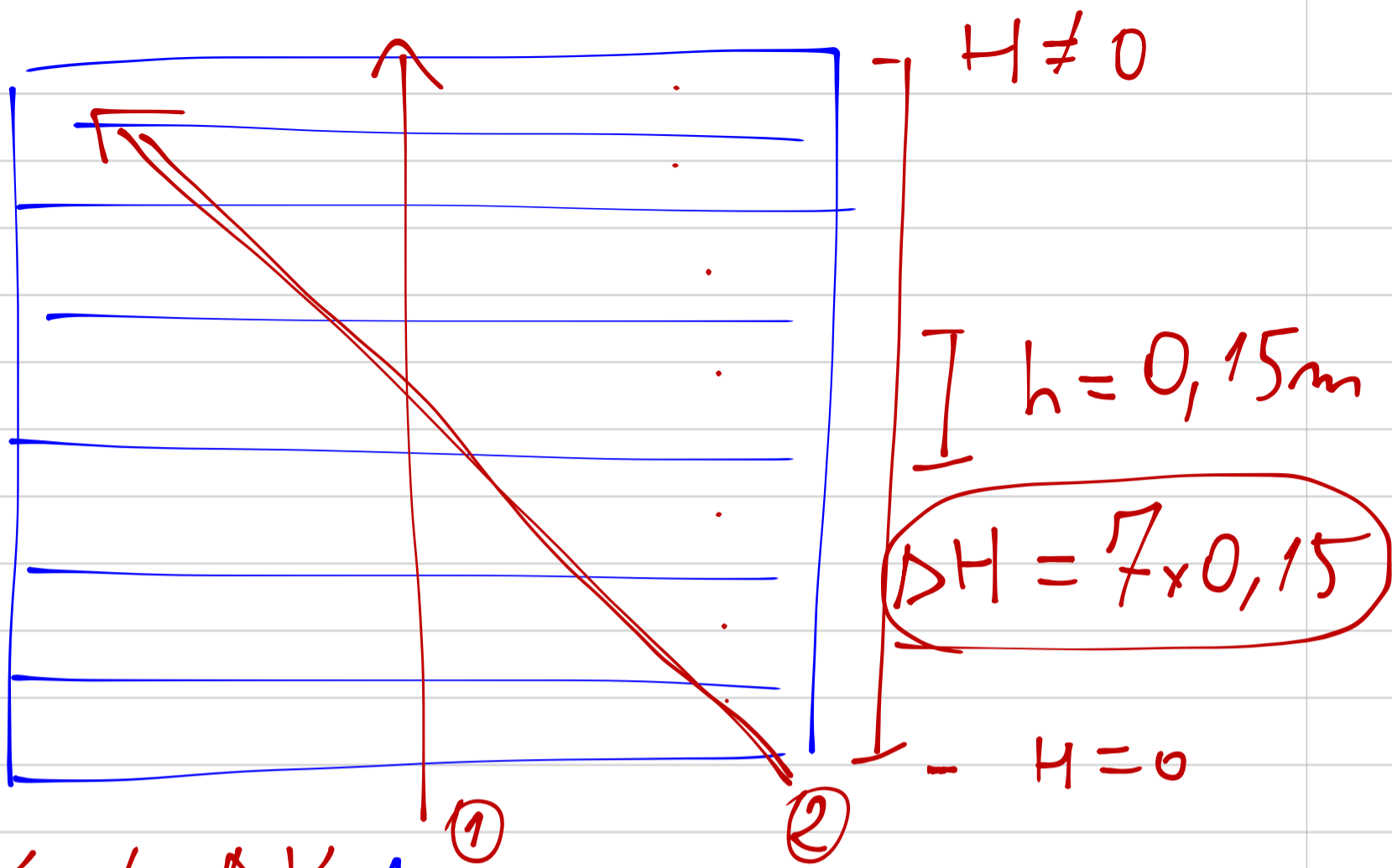
$$+ 117,5$$

$$1,8$$

$$1,8$$

$\Delta U$

— x — x — x —



$$\left\{ \begin{array}{l} \Delta K_1 \neq \Delta K_2 \\ \Delta U_1 = \Delta U_2 \end{array} \right.$$

x

