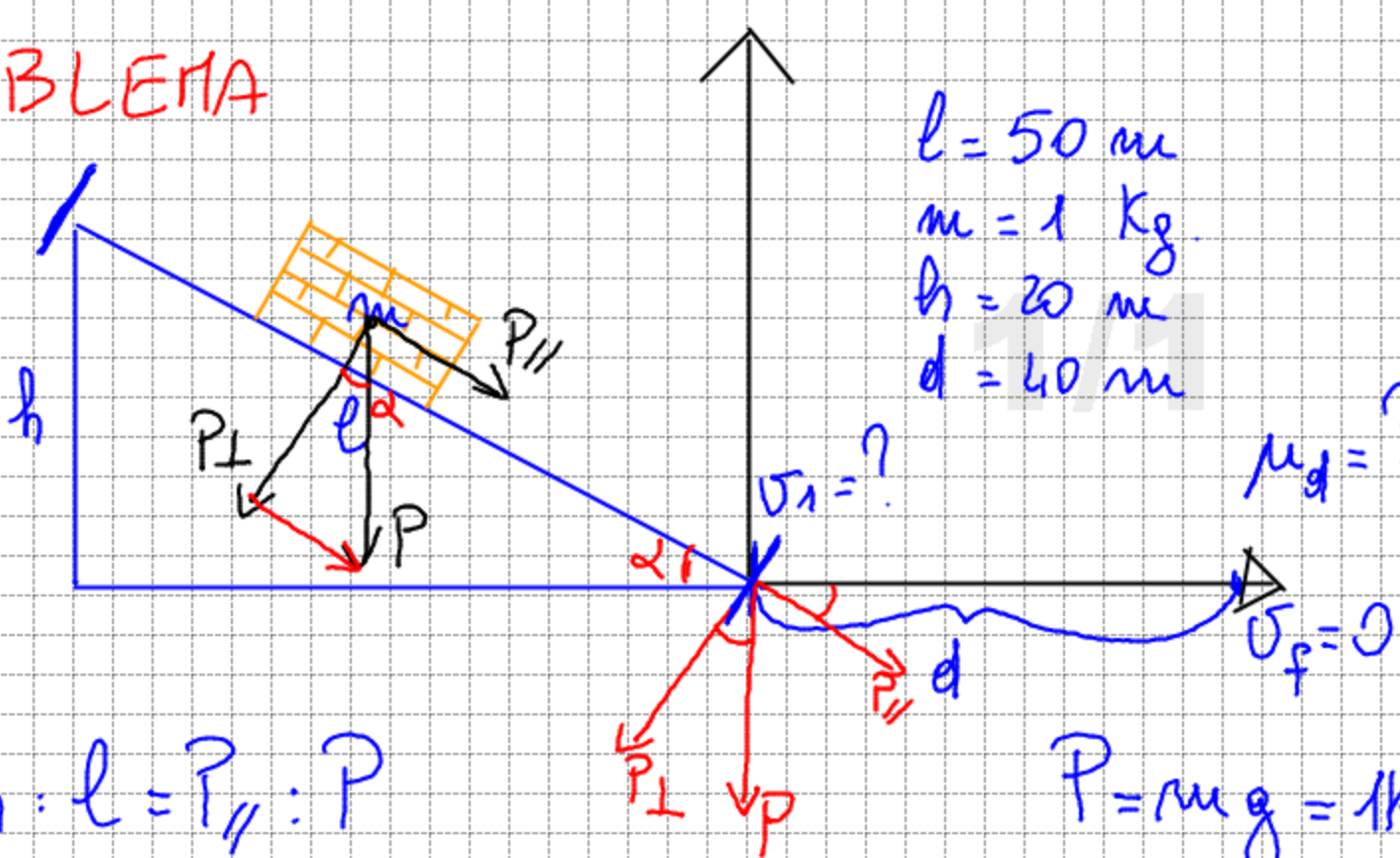


PROBLEMA



$$h \cdot l = P_{\parallel} : P$$

$$P_{\parallel} = \frac{h \cdot P}{l} = \frac{20 \text{ m} \cdot 9,81 \text{ N}}{50 \text{ m}} = 3,9 \text{ N}$$

$$P = mg = 1 \text{ kg} \times 9,81 \frac{\text{m}}{\text{s}^2} = 9,81 \text{ N}$$

$$\vec{F} = m \cdot a$$

$$[N] = [kg] \cdot [\frac{m}{s^2}]$$

$$a = 3,9 \frac{\text{N}}{\text{kg}}$$

$$P_{\parallel} = m \cdot a \quad a = \frac{P_{\parallel}}{m} \quad a = \frac{3,9 \text{ N}}{1 \text{ kg}}$$

$$\begin{cases} l = \frac{1}{2} a t^2 \\ v = a t \end{cases} \quad \begin{cases} t^2 = \frac{2l}{a} \\ v = a t \end{cases} \quad \begin{cases} t = \sqrt{\frac{2l}{a}} \Rightarrow t = \sqrt{\frac{100 \text{ m}}{3,9 \text{ m/s}^2}} \quad t = 5 \text{ s} \\ v = a t \end{cases}$$

$$v = a t \quad v = 3,9 \frac{\text{m}}{\text{s}^2} \cdot 5 \text{ s} = 19,5 \frac{\text{m}}{\text{s}}$$

$$v_1 = 19,5 \frac{\text{m}}{\text{s}}$$

$$d = 40 \text{ m}$$

$$v_1 = 19,5 \frac{\text{m}}{\text{s}}$$

$$v_f = 0 \frac{\text{m}}{\text{s}} \rightarrow \text{si ferma}$$

$$\begin{cases} d = \frac{1}{2} a t^2 + v_1 t \\ v = v_1 + a t \end{cases}$$

$$\begin{cases} 40 \text{ m} = \frac{1}{2} \left(\frac{-19,5 \text{ m}}{\text{s}} \right) t^2 + 19,5 \frac{\text{m}}{\text{s}} t \\ a = \frac{v - v_1}{t} = - \frac{19,5 \text{ m}}{\text{s}} \end{cases}$$

$$\begin{cases} 40 = -9,75 t + 19,5 t \\ a = - \frac{19,5}{t} \end{cases} \quad \begin{cases} 9,5 t = 40 \quad t = 4,1 \text{ s} \\ a = - \frac{19,5 \text{ m}}{4,1 \text{ s}} \quad a = -4,76 \frac{\text{m}}{\text{s}^2} \end{cases}$$

$$\vec{F} = \vec{F}_{\text{att}d}$$

$\downarrow m \cdot a$ $\downarrow \mu_d \cdot P$

$$m \cdot a = \mu_d \cdot m \cdot g \quad \mu_d = \frac{a}{g}$$

coeff. attrito dinamico

$$\mu_d = 0,48$$