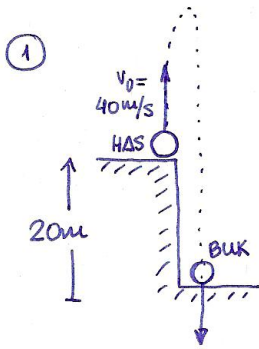


# Dinamika eta jauzi libreko: EBAZPENAK



a) denbora

$$v = v_0 - 10 \frac{m}{s^2} \cdot t \xrightarrow{\text{datuak}} v = 40 \frac{m}{s} - 10 \frac{m}{s^2} \cdot t$$

$$\Delta y = v_0 \cdot t - 5 \frac{m}{s^2} \cdot t^2 \xrightarrow{\text{datuak}} -20m = 40 \frac{m}{s} \cdot t - 5 \frac{m}{s^2} \cdot t^2$$

$$\begin{aligned} \Delta y &= y - y_0 \\ &= -20m \end{aligned}$$

bigarren mailako ekuazioa

$$5t^2 - 40t - 20 = 0$$

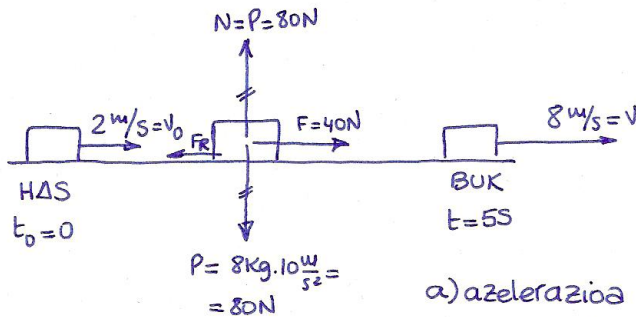
$$t^2 - 8t - 4 = 0$$

$$t = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{8 \pm \sqrt{64 + 16}}{2} = \frac{8 \pm 8.94}{2} \begin{matrix} \nearrow t < 0 \\ \searrow t = 8.47s \end{matrix}$$

b) abiadura

$$v = 40 \frac{m}{s} - 10 \frac{m}{s^2} \cdot 8.47s = -44.7 \frac{m}{s}$$

②



a) azelerazioa

$$v = v_0 + at \xrightarrow{\text{datuak}} 8 \frac{m}{s} = 2 \frac{m}{s} + a \cdot 5s \rightarrow$$

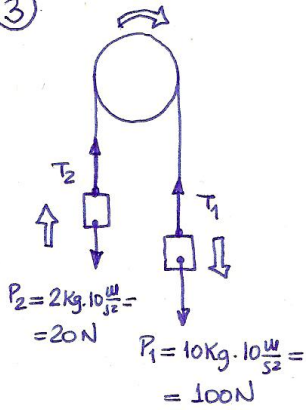
$$\rightarrow 8 \frac{m}{s} - 2 \frac{m}{s} = a \cdot 5s \rightarrow a = \frac{6 \frac{m}{s}}{5s} = 1.2 \frac{m}{s^2}$$

b) Marruskadura-indarra

$$\begin{aligned} F_T &= m \cdot a \xrightarrow{\text{datuak}} 40N - F_R = 8 \text{ Kg} \cdot 1.2 \frac{m}{s^2} = 9.6N \\ a &= 1.2 \frac{m}{s^2} \\ m &= 8 \text{ Kg} \\ F_T &= F - F_R = 40N - F_R \end{aligned}$$

$$F_R = 40N - 9.6N = 30.4N$$

③



a) azelerazioa

$$F_T = m_T \cdot a \quad \text{datuak} \quad 80 \text{ N} = 12 \text{ kg} \cdot a$$

$$m_T = 10 \text{ kg} + 2 \text{ kg} = 12 \text{ kg}$$

$$F_T = P_1 - T_1 + T_2 - P_2 = 100 \text{ N} - 20 \text{ N} = 80 \text{ N}$$

$$a = \frac{80 \text{ N}}{12 \text{ kg}} = 6'67 \frac{\text{m}}{\text{s}^2}$$

b) sokaren tentsioak

$10 \text{ kg}$   
 $P_1 = 100 \text{ N}$   
 $a = 6'67 \frac{\text{m}}{\text{s}^2}$

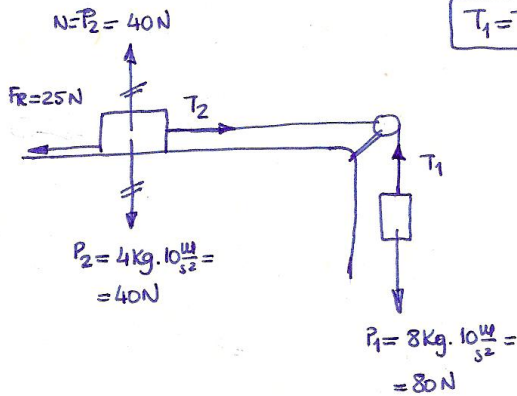
$$F_T = m \cdot a$$

datuak:  
 $m = 10 \text{ kg}$   
 $a = 6'67 \text{ m/s}^2$   
 $F_T = P_1 - T_1 = 100 \text{ N} - T_1$

$$100 \text{ N} - T_1 = 10 \text{ kg} \cdot 6'67 \frac{\text{m}}{\text{s}^2} = 66'7 \text{ N}$$

$$T_1 = T_2 = 100 \text{ N} - 66'7 \text{ N} = 33'3 \text{ N}$$

④



a) azelerazioa

$$F_T = m_T \cdot a$$

datuak  
 $m_T = 8 \text{ kg} + 4 \text{ kg} = 12 \text{ kg}$   
 $F_T = P_1 - T_1 + T_2 - F_R = 80 \text{ N} - 25 \text{ N} = 55 \text{ N}$

$$55 \text{ N} = 12 \text{ kg} \cdot a \rightarrow a = \frac{55 \text{ N}}{12 \text{ kg}} = 4'58 \frac{\text{m}}{\text{s}^2}$$

b) sokaren tentsioak

$8 \text{ kg}$   
 $a = 4'58 \frac{\text{m}}{\text{s}^2}$   
 $P_1 = 80 \text{ N}$

$$F_T = m \cdot a$$

datuak  
 $m = 8 \text{ kg}$   
 $a = 4'58 \text{ m/s}^2$   
 $F_T = P_1 - T_1 = 80 \text{ N} - T_1$

$$80 \text{ N} - T_1 = 8 \text{ kg} \cdot 4'58 \frac{\text{m}}{\text{s}^2} = 36'64 \text{ N}$$

$$T_1 = T_2 = 80 \text{ N} - 36'64 \text{ N} = 43'36 \text{ N}$$