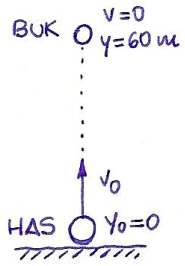
① 

a) hasierako abiadura

$\Delta y = y - y_0 = 60m - 0 = 60m$

$\Delta y = v_0 \cdot t - 5\frac{m}{s^2} \cdot t \xrightarrow{\text{datuak}} 60m = v_0 \cdot t - 5\frac{m}{s^2} \cdot t^2$

$v = v_0 - 10\frac{m}{s^2} \cdot t \xrightarrow{\text{datuak}} 0 = v_0 - 10\frac{m}{s^2} \cdot t$

Bi ekuazio bi ezezagunekin → SISTEMA

$$\begin{cases} 60 = v_0 \cdot t - 5t^2 \xrightarrow{\text{ordezkatuz}} 60 = (10 \cdot t) \cdot t - 5t^2 \\ 0 = v_0 - 10t \rightarrow v_0 = 10t \end{cases}$$

$60 = 10t^2 - 5t^2$

$60 = 5t^2 \rightarrow t = \sqrt{\frac{60}{5}} = 3'46\ s$

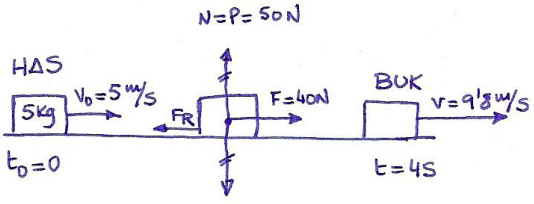
$0 = v_0 - 10\frac{m}{s^2} \cdot 3'46\ s = v_0 - 34'6\frac{m}{s} \rightarrow \boxed{v_0 = 34'6\frac{m}{s}}$

b) denbora airean

$t = 2 \cdot 3'46\ s = \boxed{6'93\ s}$

②

b) indarren adierazpena



P = m.g =
= 5kg. $10\frac{m}{s^2}$ =
= 50N

a) azelerazioa

$v = v_0 + a \cdot t$

↓ datuak

$9'8\frac{m}{s} = 5\frac{m}{s} + a \cdot 4s$

$9'8\frac{m}{s} - 5\frac{m}{s} = a \cdot 4s$

$4'8\frac{m}{s} = a \cdot 4s \rightarrow a = \frac{4'8\ m/s}{4s} = \boxed{1'2\frac{m}{s^2}}$

c) indarren balioak

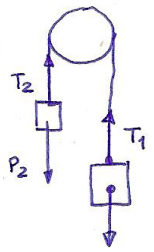
$\boxed{F_T = m \cdot a}$ ↑ $\xrightarrow{\text{datuak}}$ $40N - F_R = 5kg \cdot 1'2\frac{m}{s^2} = 6N$

$F_T = F - F_R = 40N - F_R$

↓

$F_R = 40N - 6N = \boxed{34\ N}$

③ a) "m" masaren balioa



$P_1 = m \cdot g = 6Kg \cdot 10 \frac{m}{s^2} = 60N$

Newton-en ekuazioa

$F_T = m_T \cdot a$

$a = 2 m/s^2$

$m_T = 6Kg + m$

$F_T = P_1 - T_1 + T_2 - P_2 =$

$= 60N - m \cdot 10 \frac{m}{s^2}$

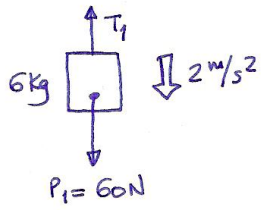
datuak

$60N - m \cdot 10 \frac{m}{s^2} = (6Kg + m) \cdot 2 \frac{m}{s^2}$

$60N - m \cdot 10 \frac{m}{s^2} = 12N + m \cdot 2 \frac{m}{s^2} \rightarrow 60N - 12N = m \cdot 2 \frac{m}{s^2} + m \cdot 10 \frac{m}{s^2} \rightarrow$

$\rightarrow 48N = m \left(2 \frac{m}{s^2} + 10 \frac{m}{s^2}\right) = m \cdot 12 \frac{m}{s^2} \rightarrow m = \frac{48N}{12 m/s^2} = \boxed{4 Kg}$

b) tentsioak



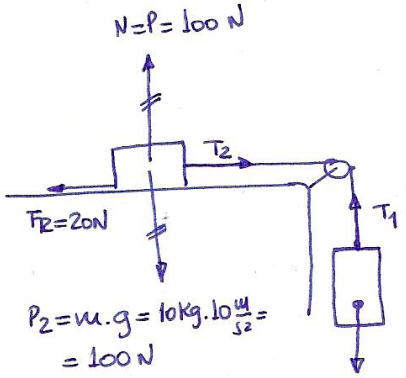
$F_T = m \cdot a$

datuak

$60N - T_1 = 6Kg \cdot 2 \frac{m}{s^2} = 12N$

$T_1 = T_2 = 60N - 12N = \boxed{48 N}$

④



$P_1 = m.g = 6kg.10\frac{m}{s^2} = 60N$

a) azelerazioa

$F_T = m_T . a$

↓ datuak

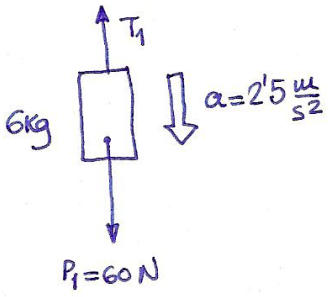
$60N - T_1 + T_2 - 20N = 16kg . a$

↓

$40N = 16kg . a$

$a = \frac{40N}{16kg} = \boxed{2'5\frac{m}{s^2}}$

b) sokaren tentsioak



$\boxed{F_T = m.a}$

↓ datuak

$60N - T_1 = 6kg . 2'5\frac{m}{s^2} = 15N$

$T_1 = T_2 = 60N - 15N = \boxed{45\ N}$