Solución Eva Física

① La masa no afecta el movimiento, ambos se colocan en la misma aceleración.

② $y = h_1 - 30t - 4a \cdot t^2$

$y = 0{,}49t^2 + 30t - h = 0$

$t = \frac{1}{2}(-30 + \sqrt{30^2 + 4 \cdot 49 \cdot h}$

Parte 2

$y = h + Vot - \frac{1}{2} g \cdot t^2 = 0 \; ; \; 4{,}9t^2 - 30t - h = 0$

$T = \frac{1}{2}(-30 + \sqrt{30^2 + 4 \cdot 19 \cdot h}$

③ $V_1 = 20$ km/h

$t = 1h$

$V_2 = 10$ km/h

$t = 2h$

$T_1 = V_1/g \; y \; T_2 = 4V_1/g$

$h = (5 \cdot t^2)/2$

$h = (5 \cdot (V_1/g)^2)/2$

$h = V_1^2/2$

$(V_1^2/2)/(8V_1^2) = 1/16$

$H = 16$ veces

$H = (5 \cdot t^2)/2$

$H = (5 \cdot 4V_1^2/g^2)/2$

$H = 8V_1^2$

⑤ 10kg

$\theta = 35°$

$\mu = 0{,}3$

$P = 90$ N

$\cos(35°) = \frac{F_x}{90}$

$F_x = 90 \cdot \cos(35)$

$F_x = 73.72$

$\sin(35°) = \frac{F_y}{90}$

$F_y = \sin(35°) \cdot 90$

$F_y = 51.62$

$F_T = \frac{73.72}{51.62} = 1.42$

$P = m \cdot a$

$1.42 = 10 \cdot a$

$a = \frac{10}{1.42} = 7.00$